

# Sustainable Reindeer Husbandry

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## Preface

*This report puts reindeer husbandry on the circumpolar agenda as part of the activity of the Arctic Council.*

*Reindeer husbandry represents a traditional way of life and is of great economic and cultural importance for many indigenous peoples. At the same time the industry is vulnerable to external influences and changes. Today the circumpolar reindeer industry is facing major challenges and in some geographical areas the situation is extremely serious. The situation in the reindeer herding industry therefore calls for the full attention of the international community.*

*In October 2000 a project on sustainable reindeer husbandry was approved at the Ministerial Meeting of the Arctic Council in Barrow, Alaska. As a preparation for the project an international workshop on sustainable reindeer herding and husbandry was arranged in Kautokeino, Norway, in March 2000, with participants from Russia, Canada, Denmark/Greenland, Finland, Sweden and Norway. The workshop strongly recommended that reindeer husbandry should be included in the future work plan of the Arctic Council.*

*The project is a joint Norwegian-Russian initiative with support from several countries. The composition of the international steering committee is evidence of this. The cooperation with all the countries involved and with the various national reindeer herding organizations and the Sustainable Development Working Group (SDWG) in the Arctic Council has functioned extremely well.*

*This report is based on fieldwork in Russia, Alaska, Sweden, Finland and Norway, and on an examination of the management plans and written material on the reindeer industry in the various Arctic countries. The project also organized a workshop on the development of national legislation on reindeer husbandry in the Arctic in April 2002 in Kautokeino, Norway.*

*On the basis of the report's review of the current situation in the circumpolar reindeer husbandry industry, the international steering committee has agreed on specific recommendations to national authorities, to the Arctic Council and to the industry itself. These recommendations are included as an appendix to the report.*

*We would like to emphasize how much the project has benefited from its cooperation with the Association of World Reindeer Herders. The Association has been an active partner throughout the project, and has made important contributions to the discussions in the steering committee.*

*The report is intended to be easily accessible for people without a detailed knowledge of reindeer husbandry. Therefore it does not contain extensive background data or references to scientific literature. We hope that the report will give readers a better understanding of the challenges facing reindeer husbandry in the Arctic countries.*

*The report has been written in English, and will be translated into Russian.*

Tromsø, September 2002

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## Executive Summary

### Introduction

The project Sustainable Reindeer Husbandry is a direct follow-up of the international workshop held in Kautokeino in March 2000. The title of the workshop was “Sustainable Reindeer Herding and Husbandry”, and approximately 70 persons from Canada, Russia, Denmark/Greenland, Norway, Sweden and Finland attended the workshop.

The question of how the Arctic Council can continue its work on reindeer husbandry was an important issue at the workshop, and one of the statements from the Chairmen’s Summary emphasised the importance of bringing reindeer husbandry on the international agenda and that the Arctic Council should initiate a project to survey the situation in the reindeer husbandry industry.

Norway brought a proposal of such an international project to the Arctic Council, and the project was approved at the Ministerial meeting in Barrow, Alaska, in October 2000.

The formal start-up for the project was October 1st 2000, and the project period is until 31st of December 2002.

### Russia

The reindeer husbandry in Russia today is receding. As a consequence of the transitional period and changes of economic priorities in the Russian economy after the collapse of the Soviet Union, the total reindeer stock has been reduced twice. Nevertheless, Russia still has two thirds of the world’s population of domesticated reindeer.

Unlike other Arctic countries the reindeer husbandry in Russia is very differentiated: representatives of 18 peoples are engaged in the industry and preserve their national traditions due to reindeer husbandry. 16 of them are included in the official list of indigenous small-numbered people of the North.

The main areas of recession, where the reindeer stock has been reduced 4-5 times, are in the North-Eastern regions of the Russian Federation (RF) and in the Siberian taiga. The number of reindeer in the North-Western part of Russia is fairly stable.

The decline of the industry results in poverty for the indigenous population connected with it. Because reindeer husbandry is the base of the traditional culture and way of life of many indigenous peoples this



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has a destructive impact on the nomadic herders' families and ethnic traditions.

A specific feature of the reindeer husbandry in Russia (compared with other Arctic countries) is the central role of reindeer enterprises with public and state forms of ownership. The rate of reindeer in private property still remains low even after reforms during the last decade. Enterprises consist of herders brigades. A brigade is a group of herders' families, usually related to each other, who jointly manage the herds within a designated pasture area. The brigade was introduced as an organisation principle during the Soviet period, and it is generally agreed to consider the brigade as a the basic productive unit in reindeer husbandry.

Reindeer enterprises are subordinated to the Departments of Agriculture in the Administrations (Governments) of the Subjects of the RF and to the Russian Ministry of Agriculture on the federal level.

During the latest reforms, the management system of reindeer husbandry in Russia has been reduced considerably. Today, it is not in a position to control the situation, especially on the federal level.

Reindeer herders in Russia are practically deprived of the possibility to participate in decision making processes in the reindeer husbandry management. The

NGO's of the reindeer herders need to be strengthened. An important NGO is the Reindeer Herder Union of Russia (RHUR), which works in contact with the Russian Ministry of Agriculture in Moscow. The RHUR was established 7 years ago, and it is a member of the Association of World Reindeer Herders. The RHUR suffers under a constant lack of funding and staff that prevents it from working efficiently.

The present economic situation in the Russian reindeer husbandry is not favourable. The domestic market is not developed, although its potential capacity is enormous. Selling prices on reindeer meat are very low.

During the last decade the intensity in the reindeer industry dropped and meat production in the enterprises was reduced by 3.4 times. At the time being reindeer husbandry is profitable only in Murmansk oblast', where the meat is sold for export at a higher price. In other regions the industry recedes despite grants allocated from the federal and regional budgets. However, its profitableness could be considerably increased by value-adding production, including high quality of reindeer meat and other products like soft and dried antlers, deer skins, blood, etc.

Pasture resources are sufficient for a further development of a sustainable reindeer husbandry in most

parts of the Russian North. However, in Yamal-Nenets Autonomous Okrug, which is the greatest region of reindeer husbandry, pastures are heavily grazed. That is especially concerning since the Yamal Peninsula is the most important area of new oil and gas exploitation development in Russia.

The decrease in the reindeer industry has stimulated the growth of several wild reindeer populations in Taimyr, Yakutia and Chukotka. The wild and the domestic reindeer, as ecological antagonists, constantly confront each other. In addition, the wild reindeer hunting produces meat at a low price and becomes a competitor for the reindeer industry. On the whole, the combination of reindeer husbandry and wild reindeer hunting is a rather difficult problem solve.

The legislation on reindeer husbandry has made an important progress during the last years. Now, three subjects of the RF have special laws on reindeer husbandry, although the federal law was not adopted. In all legal acts and law drafts the reindeer husbandry is regarded as a traditional economic activity of the indigenous peoples of the North and as an indispensable condition for the preservation of traditional cultures and ways of living. However, at the present stage the legal system in Russia still does not secure the herders' rights in reindeer husbandry. Legal acts are focused mainly on reindeer enterprises and set aside private reindeer owners.

Based on the background information collected for this project, we would make the following recommendations:

- It is expedient to develop the legislation on reindeer husbandry in Russia further, and to prepare favourable conditions for the ratification of the ILO Convention no. 169.
- It is expedient to support and develop the NGO's of reindeer herders. The aim is to enable a constructive dialogue between the herders organisations and the Russian Government.
- In order to get the reindeer husbandry in Russia sustainable, an economic, social and technological system based on scientific recommendations and research should be realized. The first variant of a State programme has been worked out by the Russian Reindeer herders Union and Yakutian scientists.

- In areas of considerable recession (the taiga zone and the North-East of Russia) the most urgent is to prevent a further decrease in the domesticated reindeer stock and to improve the life conditions for the reindeer herders' families.
- In the North-Western part of Russia – where the reindeer husbandry has remained stable – it is expedient to improve the facilities for the production of reindeer products through:
  - investment in slaughtering houses to secure high quality meat,
  - investment in new technologies for full utilization of reindeer carcasses (incl. antlers, skins, blood, glands for medicament and bio-preparations, etc.),
  - development of a domestic market for reindeer meat and other reindeer products.
- Lack of pastures is a problem mainly in the Yamal-Nenets Autonomous Okrug. This problem is enhanced by the oil and gas exploitation development in the area. Measures should be taken to secure the future of reindeer husbandry in this region.
- The large population of wild reindeer in Taimyr, Yakutia and Chukotka create difficulties for the reindeer husbandry in these regions. A management system focusing on pasture use and exploitation of wild reindeer resources based on scientific recommendations should be introduced to resolve the wild reindeer problem.

## Alaska

From the first introduction of domesticated reindeer in 1892, Alaska experienced a rapid growth in the reindeer population. Around 1930 there were approximately 600.000 reindeer, half of these located on the Seward Peninsula. The decline of the reindeer population began in 1933, and by 1950 only 25.000 reindeer remained. In the period 1950-1992 the number of reindeer increased to 41.000 animals, but then fell to 19.000 in 1999. The estimation for the Seward Penin-



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sula 2001 is 9,000 reindeer and the industry is facing a major crisis at the moment.

The reindeer industry has made up an important part of the economy on Seward Peninsula for over a century. It has provided employment, food and income to residents in the area where employment opportunities were scarce. During the last 10 years, the industry has employed approximately 150 local people in different locations on the Seward Peninsula, in addition to the people employed on the different islands. The peak income of the industry on Seward Peninsula amounted USD 1,500,000 in the early 1990's, when 15 herds were in operation. Today the reindeer industry suffers direct losses of \$1 million annually due to the caribou problem and the soft antlers prices.

The reindeer industry on the Seward Peninsula is facing a major threat at the moment, and this is the growing Western Arctic Caribou Herd (WACH). The herd numbers approximately 440,000 animals, and is penetrating further and further into the Seward Peninsula. The economic value of the range resource throughout the peninsula is being devastated, and once depleted, it will take many years to recover. The huge caribou herd also attracts predators, but

the most serious is the "run-off" problem. In a situation with a mix-up between domesticated reindeer and caribou, the reindeer will follow the caribou herd on its migration. All efforts to try to keep the caribou herd away from the grazing areas of the domesticated reindeer have been without result.

The market for reindeer meat in Alaska is good. There is a demand in the local stores and from groceries in Anchorage. All the meat available on the market is sold. There is also a market for deliveries to the "high-end" restaurants in the "lower-48's". The challenges connected to the market are different kinds of infrastructure - access to abattoirs, transport, transport costs and a demand for better docking facilities on the islands.

The Reindeer Act of 1937 is an important law, restricting ownership of reindeer to the native peoples of Alaska. This right has been questioned by the court system of Alaska, which states that the Reindeer Act of 1937 only gives the exclusively right to reindeer husbandry of reindeer inside the State of Alaska, and not for import of reindeer for sale.

Based on the background information collected for this project, we would make the following recommendations:

- The growing caribou herd represents a major threat to the reindeer industry in Alaska. This calls for a joint effort between the national management system and the industry. Without a solution the industry will face a major crisis in a few years.
- The reindeer industry on the islands of Alaska have several advantages that must be utilized. There is no problem with caribou or predators. However, the transport cost in Alaska is a disadvantage for the development of the industry. To be able to realise the potential of the industry it is important to provide proper infrastructure like abattoirs, transport and docking facilities, and make the transport costs reasonable.
- To further improve the management of the industry at all levels there should be a focus on the educational system. An establishment of a reindeer herding school could inspire the younger generation to secure the future of the industry.
- The exclusive rights to own reindeer for the native peoples in Alaska must be secured. The Reindeer Act from 1937 is under threat, and to secure these rights will give the native peoples of Alaska an opportunity to make a living out of reindeer husbandry within their areas.

## Norway, Sweden and Finland

The reindeer pastures and the number of reindeer in Norway, Sweden and Finland are quite comparable. The figures for Norway for 2001 are 165.000 reindeer grazing on 140.000 square kilometres, or about 40% of Norway; the Swedish figures for 1998 are 227.000 reindeer grazing on 160.000 square kilometres, or about 34% of Sweden, and the Finnish figures for 2000 are 186.000 reindeer grazing on 114.000 square kilometres, or 33% of Finland.

In contrast to Russia and Alaska, the reindeer husbandry in Scandinavia faces a challenge because the pastures to a great extent are situated close to populated areas, and conflicts with other industries like farming and forestry are common. In the southern Saami area in Sweden and Norway these conflicts are threatening to undermine the whole industry.

The three different management systems in

Norway, Sweden and Finland are based on the same administrative principles. The responsibility of the national policy towards the reindeer industry is located to the Ministry of Agriculture. The Ministry of Agriculture delegates the executive authority of the reindeer policy to different government services outside the Ministry.

The Saami concept of "siida" (community) is the traditional way of organizing the reindeer owners, and their families. This concept is not part of the Norwegian, Swedish or Finnish management system today.

The Norwegian management system introduced the Norwegian concept of "husbandry unit" to reindeer husbandry. A husbandry unit is a licence given to one person in order to legally own reindeer and to be part of a reindeer district. One family could hold several husbandry units.

The Swedish system is similar to the Norwegian, but the licence is connected to the membership of a Saami village. Each owner is an individual enterprise, and like in Norway, one family could consist of several individual enterprises.

The reindeer herding licence in Finland is connected to the membership of a district. Unlike in Norway and Sweden, reindeer husbandry is not an exclusive right for the Saami, but can be performed by all citizens of Finland.

The number of reindeer in Norway, Sweden and Finland show a similar development, with an increase in animals from the late 1970's and a peak between 1989 -1991. After 1991 the trend has been a steady reduction of the herds. The reduction in the number of animals is partly due to a instruction from the national authorities, partly the influence of predators, and partly an understanding from the owners that the number of animals in 1989 was not on a sustainable level.

Sale of reindeer meat is the most important income for the reindeer owners. In addition, there is income from compensation of loss of reindeer, salary, pension, handy craft (duodji) and additional earnings. The average income of a reindeer owner is lower than the average personal income among other groups of the society.

The main costs in the reindeer industry are connected to mechanical equipment, transport and constructions, snow mobiles, motorbikes, cars, helicopters etc. These are capital intensive tools for the reindeer owner, but also important in the daily work in order to be able to keep up with the herd. Due to an

increase in infrastructure, which makes the migration between pastures more difficult more owners choose to move the reindeer by car. This makes the migration easier, it saves the animals' energy, but it means extra cost for the owner. In some areas, this is almost the only possibility to get the reindeer from one pasture to another.

Loss of pasture is one of the main threats to the reindeer industry in the future, according to most of the reindeer owners and herders interviewed in this project. This viewpoint is also supported by "GLOBIO – Global methodology for mapping Human Impacts on the Biosphere" which shows explicitly the impact on the pasture areas during the last 60 years, especially for Norway, but also for the northern part of Sweden, Finland and northern part of Russia. The report emphasises that the impact from infrastructure development on reindeer and caribou threatens the cultural traditions of arctic indigenous people and their way of life.

Predators are a major concern to the reindeer industry in Scandinavia, and according to the interviews, this problem is growing. This view is supported by the official statistics in these countries. The number of the different predators - lynx, wolverine, wolf, bear and eagle - is increasing.

The situation in Finland is most dramatic. According to the official statistics between 1987 and 2000 there has been an increase of 23% of the wolf population, a 89% increase in the bear population, 40% increase of the lynx population and a 109% increase of the wolverine population. The number of reindeer killed by wolf increased by 90%, for bear it was an increase of 300%, for lynx an increase of 26%, and for wolverine an increase of 1.708% in this period.

The compensation system in Sweden for loss of reindeer to predators is based on the occurrence of different predators inside one pasture area. The compensation is based on the estimated reproduction of each predator every year, and is paid independent of the number of reindeer found killed by predators.

Disturbance from small game hunting, especially with dogs, is according to reindeer owners in Scandinavia as an increasing problem. In a situation where the pasture land is decreasing, or an efficient use of the pasture is complicated by the development of infrastructure, an increase of relatively small disturbances, for instance from small game hunting, could have significant effect on the herd.

In the mid 1990's there was a change in the Swedish legislation in connection with small game hunting. Before 1993 the local Saami village could sell the game



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licences and decide the maximum number of hunters a day on their pasture areas. This situation gave the Saami villages an opportunity to inform the hunters where the reindeer were and to avoid these areas. After the changes in the legislation anybody can buy a game licence in the local shop without any information about the reindeer husbandry and there is no limit to the number of hunters. One consequence is an increased problem with disturbances of the herds, resulting in a lot of work to keep the herds together.

The reindeer market in Scandinavia are favorable. Reindeer meat is well received in the national markets in Scandinavia, and is perceived as healthy and clean arctic food. The price of reindeer meat is much higher than for other comparable meat products. At the same time, the reindeer owners are mainly primary producer of meat, and there is a potential for value-adding production.

There is a extensive work concerning the legislation in the Scandinavian countries. At present, three important reports - one Norwegian, one Swedish and one Norwegian-Swedish - are on public inquiry. This is the Norwegian report "Proposal for an amendment to the Norwegian Reindeer Herding Act" (NOU 2001:35), the Swedish "A New Reindeer Management Policy" (SOU 2001:101) and "Recommendations from the Norwegian-Swedish reindeer pasture commission". All reports are expected to have impact on the management system in both countries. In addition, the public debates about a future ratification of the ILO Convention no. 169 is continuing in Sweden and Finland. Norway ratified the ILO Convention, no. 169 in 1990.

Based on the background information collected for this project, we would make the following recommendations:

- The situation with loss of pasture connected to infrastructure development is a major threat to the reindeer industries of Norway, Sweden and Finland. A joint effort between national authorities and the reindeer industry is needed to secure the remaining pasture areas.
- The loss of access to pastures in the Southern Saami area in Sweden and Norway is an on-going dispute in the court system between reindeer owners and private landowners. This situation calls upon immediate attention from the national governments.
- Predators are a growing concern to the industry. Norway and Finland should look closer into the compensation system of Sweden, which is based on the occurrence of different predators inside one pasture area. The compensation systems must be based on a fixed price on each reindeer.
- The Saami reindeer husbandry is based on the family as a social and economic unit. The development during the last 30 years has reduced the family members' rights and, as a consequence, their involvement in the industry. It is important to strenghten the position of the family through a familij-based reindeer husbandry, and reverse the development of the reindeer industry into a special branch of agriculture.
- The positive development of value-adding production must continue in all countries. The reindeer meat is a highly valued product, and the opportunities within the domestic markets are favourable.
- To increase the value-adding production the information about the rules and regulations connected to meat production and the start-up of small scale productions must be made more easily accessible for the industry and the local governments.
- Sweden and Finland are encouraged to intensify the work towards a ratification of the ILO Convention no. 169.





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# INTRODUCTION

## The Sustainable Reindeer Husbandry Project - a short History

The project “Sustainable Reindeer Husbandry” was approved by the Arctic Council as a project under the Sustainable Development Programme at the Ministerial meeting in Barrow, Alaska, in October 2000. The aim of the project is to assess circumpolar reindeer herding and husbandry in relation to economic and social/cultural sustainability. This is done by carrying out a thematic survey and assessment of reindeer husbandry in the Arctic region (Norway, Sweden, Finland, Alaska and Russia).

The main objectives of the Sustainable Reindeer Husbandry project are:

- Describe and analyse the present situation with regard to economic and social conditions
- Describe and analyse the present situation with regard to national management of reindeer husbandry

- Describe and analyse the present situation with regard to current legislation in the reindeer husbandry

## Origin of the project

At the first ministerial meeting of the Arctic Council, in Iqaluit Canada, the former Norwegian foreign minister Knut Vollebæk, focused on different Arctic industries (oil & gas, fisheries, and reindeer herding) and how these industries are related to sustainable development. Vollebæk stated that Norway would initiate international workshops within these themes. The workshop, which discussed reindeer husbandry, was held in Kautokeino, Norway, in March 2000 under the heading “Sustainable reindeer herding and husbandry”. The chairmen’s summary from the workshop states:

“The Arctic Council should initiate a project to survey the situation in the reindeer husbandry

industry. Such a project would have to consider the different aspects of reindeer husbandry and be carried out in collaboration with the Association of World Reindeer Herders.”

The formal start-up for the project was October 1st 2000, and the project period is until 31st of December 2002.

## The Sustainable Reindeer Husbandry Process

### Collection of data

The project has collected the latest available national statistics about reindeer husbandry, management plans, assessments for predators, documents about the different national management policies and scientific papers about the development in reindeer husbandry. In addition to this written material, a set of interviews with reindeer herders and owners, bureaucrats and researchers in Russia, Alaska, Norway, Sweden and Finland have been accomplished. Several field trips have been undertaken to different parts of Russia, Alaska, Norway, Sweden and Finland during the period May 2001 to April 2002.

In order to fulfil the requirements from the objectives of the project, the following information was needed:

#### *National management of reindeer husbandry*

- National level
- Regional level
- Local level
- Compensation
- Government subsidy

#### *Household/Family/Community*

- Distribution of income in the family
- Income from meat and other products from reindeer
- Cost in reindeer husbandry
- Number of reindeer in different forms of ownership

#### *External conditions*

- Conflicts with other industries
- Predators
- Access to and requirement for abattoir
- Access to market
- Influence of wild reindeer (Russia and Alaska)

#### *Legislation*

- National legislation
- Regional legislation
- Local legislation

Based on this material and the results of the field trips the present situation in the circumpolar reindeer husbandry has been described and analysed.

In addition to the field trips, a seminar with the title “Reindeer Husbandry in a Circumpolar Perspective” was arranged by the project April 26-27 in Kautokeino, Norway, with approximately 50 participants. The overall theme of the seminar was the socio-economic development of reindeer husbandry in the Arctic countries and the development of national legislation connected to reindeer husbandry. There was a special focus on the situation of the industry in Russia and the new reindeer husbandry legislation being proposed in Norway and Sweden. The two-days seminar included presentations from legal experts and other speakers representing Russia, Sweden, Finland, Alaska and Norway. The organisers of the seminar were Nordic Saami Institute in Kautokeino, The Association of World Reindeer Herders and the Centre for Saami Studies, University of Tromsø.

The chapters in this report is organised around four main themes: a) National management of reindeer husbandry, b) Economy connected to household/family/community level, c) External conditions that affect reindeer husbandry and d) Legislation.

### Presentation of the statistic

To collect the official statistics from each country is a time consuming process. The management of the reindeer husbandry is different from country to country. This means that the responsibility for the statistics is organised differently in each country and considerable time is needed to navigate through the bureaucracy.

One of the main challenges connected to the data collecting process is the diversity in official statistic - or the diversity in focus in the collected material. For instance there is extensive information on slaughtering weight in one country, with a complete absent of this information in another country. Given this situation, the type and focus of the statistics presented in this report will change according to the national data on reindeer husbandry.

All figures in the tables and diagrams in the report are presented in the original/national currency of the country described. As a consequence, the report will operate with five currencies - American dollar (USD), Russian rouble (RUS), Finnish mark (FIM), Swedish krona (SEK) and Norwegian krona (NOK).

## Setting up the project in a Arctic Council framework

The framework for the project is the Arctic Council and the “Sustainable Development Programme”

which is part of the Sustainable Development Working Group (SDWG). It has been important for Norway, as the originator of the project, to carry out the project in accordance with the “Sustainable Development Framework Document” and “Terms of Reference for a Sustainable Development Programme”.

As noted in the Terms of Reference, the goals of the Sustainable Development Programme is to

“propose and adopt steps to be taken by the Arctic States to advance sustainable development in the Arctic, including opportunities to protect and enhance the environment and the economies, culture and health of indigenous communities and of other inhabitants of the Arctic, as well as to improve the environmental, economic and social conditions of Arctic communities as a whole.”

The “Sustainable Reindeer Husbandry” project aims to provide foundation necessary for realizing the goals mentioned in the “Terms of Reference”

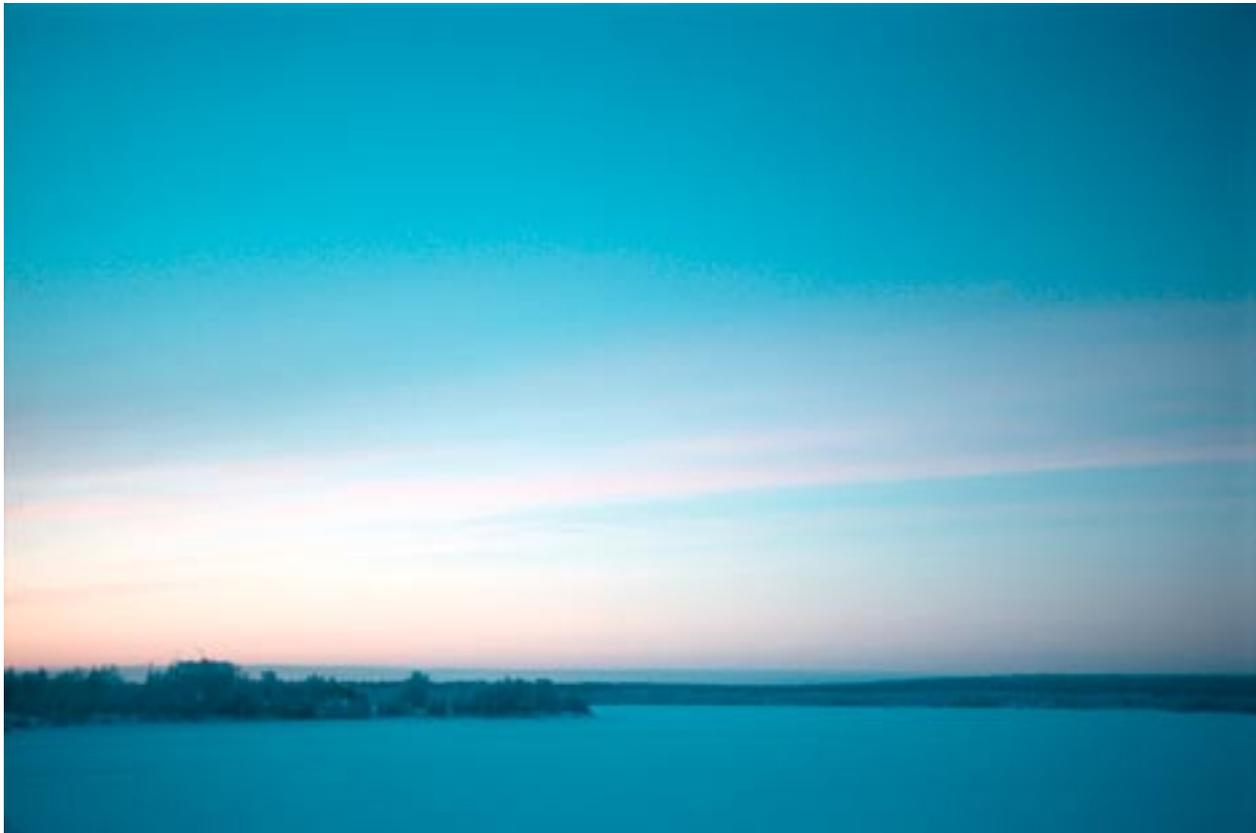


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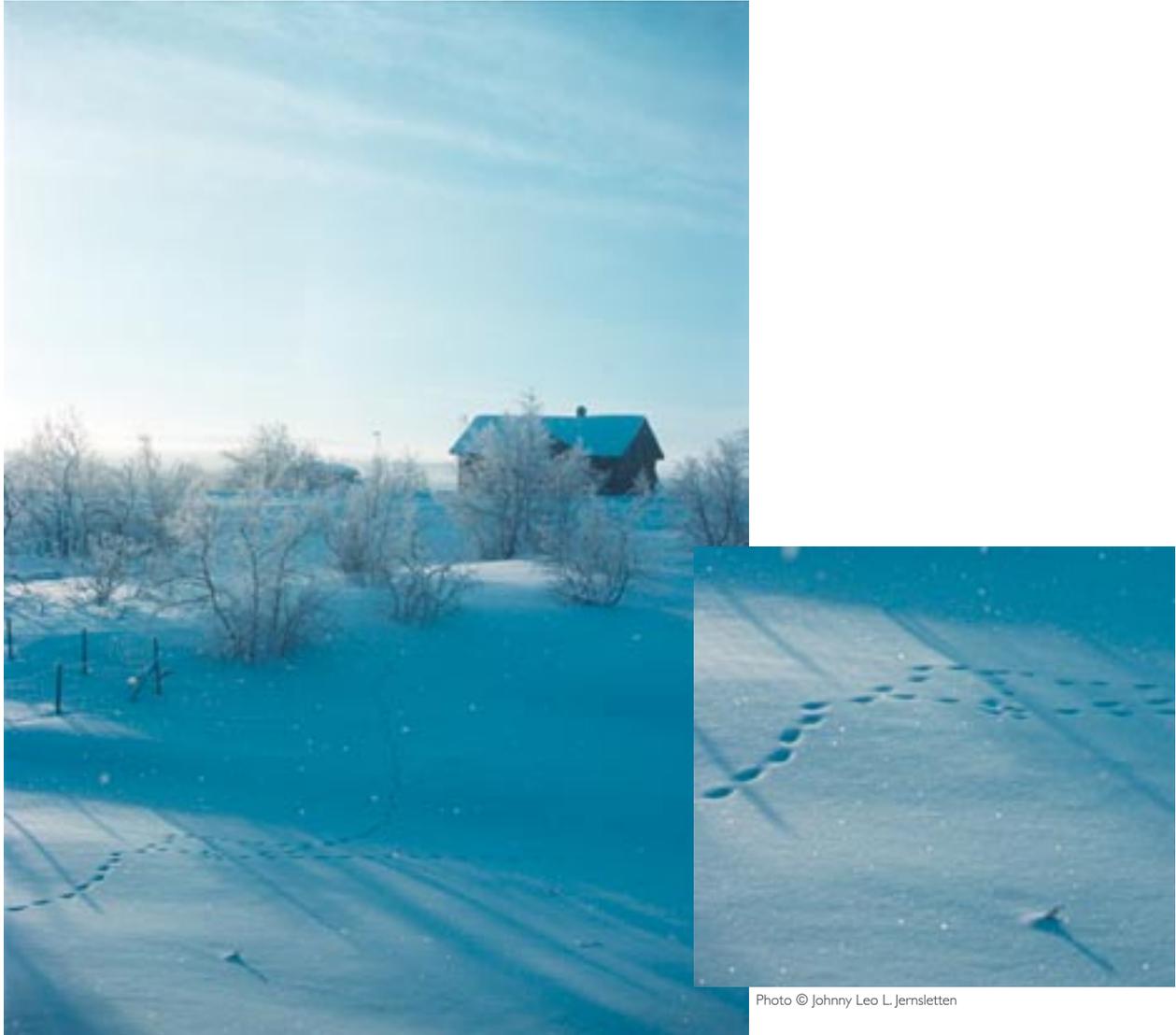


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## What do we mean with Sustainable Development?

The Arctic Council has made some reference points to emphasize what could be included in the phrase “Sustainable Development”:

- Sustainable Development must meet the needs of the present without compromising the ability of future generations to meet their own needs. Economic, social and cultural developments are, along with environmental protection, interdependent and mutually reinforcing aspects of Sustainable Development and are all part of the Councils focus in this regard.
- The Sustainable Development Programme should leave future generations in the North with expanded opportunities, and promote economic activity that creates wealth and human capital, while simultaneously safeguarding the natural capital of the Arctic.
- Sustainable Development must be based on sound science, traditional knowledge of indigenous and local people, and prudent conservation and management of resources, and it must benefit from and strengthen the innovative and educational processes of northern communities.

In the same document the Arctic Council attaches special importance to a number of subject areas. Some of these are particularly important to this project:

Sustainable economic activities and increasing community prosperity. To be sustainable, Arctic

communities must have an appropriate economic basis to ensure their survival.

Management of natural, including living, resources. This must be based on sound science and traditional knowledge to maintain and develop local settlements in the Arctic.

## Organisational Structure

The project has been headed by an international steering committee. The members of the steering committee have been:

- Jan Tore Holvik, Senior Arctic Official and Ambassador, The Norwegian Ministry of Foreign Affairs (Head of the Steering Committee)
- Dag Lenvik, Deputy Director, The Norwegian Ministry of Agriculture (Until 31.12.2001)
- Sigurd Svela, Senior Executive Officer, The Norwegian Ministry of Agriculture (From 01.01.2002)
- Johan-Klemet Kalstad, Director, Nordic Saami Institute, Kautokeino
- Johan-Mathis Turi, President, Association of World Reindeer Herders, Tromsø
- Tatjana S. Nikolajeva, Senior Consultant, The Russian Ministry of Agriculture
- Vasilij A. Zabrodin, Chairman of the co-ordination team for the North-Western sector of Academy of Agriculture Sciences, St. Petersburg
- Nina Hellström, Senior Executive Officer, The Finnish Ministry of Agriculture and Forestry

The project manager, Johnny-Leo L. Jernsletten, located at the Centre for Saami Studies, University of Tromsø, heads the day-to-day work. He is responsible for the scientific work of the project and for the preparation of the project report. A Russian co-ordinator, Konstantin Klokov, located at the Institute of Geography, St.Petersburg State University, has also been full-time employed in the project. The project manager and the russian co-ordinator have worked as the secretariat for the International Steering Committee.

## The Framework of the Report

The report aims to give an overview of the socio-economic situation in reindeer husbandry in the circumpolar area. To be able to conduct this within a two-years period, the focus has been on a national level. The report gives an introduction to and an overview of the socio-economic situation within each country; an analysis of the situation within each country; and to some extent a comparison of some aspects between the countries. The report will only to a limited extent refer to the historical background and the development of reindeer husbandry in each country.

## The writing of the Report

The text and the illustrations that constitute this report are the work of several persons; project manager Johnny-Leo L. Jernsletten has prepared chapter 4, 5, 6, and 7; the russian co-ordinator Konstantin Klokov has prepared chapter 3. Chapter 1, 2 and 8 are a joint effort between Johnny-Leo L. Jernsletten and Konstantin Klokov. In addition to this the following persons have made direct contributions to chapter 3 - Evgheni Syroechkovski, Artom Rybkin, Marina Zenko, and Aleksandr Komarov.

During the preparation of this report, the Association of World Reindeer Herders offered the project to include a short report about the current situation in Mongolia. The report is based on the WRH latest visit to Mongolia. This report is included as Appendix A and Johan-Mathis Turi is responsible for the text.

## What is not included in the project

The project's main focus is towards economic and social science in reindeer husbandry, which also is reflected in the objectives of the project. This means that reindeer biology, assessment of pastures, and other ecological components, have not been part of this project.

## Areas of studies

The background for the selection was a wish from the Arctic Council to get an overview and an report on the present status in the reindeer industry in the circumpolar area. The time schedule for the project

has been too narrow to include all areas with reindeer husbandry in these countries, but in co-operation with different national reindeer herders organisations, we were able to point out special areas of interest.

The limited time available for this project (October 2000 - October 2002) means that some limitation on the geographical focus was necessary. The consequences are that the reindeer husbandry in China, Canada and Greenland is not included in this presentation. Mongolia was not part of the project, but a short report from Mongolia is included as Appendix A.

## Organisations and institutions connected to the project

A considerable number of organisations and institutions have made valuable contributions to the project.

### *In Norway:*

- The Ministry of Foreign Affairs
- The Ministry of Agriculture
- Nordic Saami Institute
- Association of World Reindeer Herders
- Norwegian Reindeer Herders Association
- University of Tromsø

### *In Sweden:*

- University of Uppsala
- The National Union of the Swedish Saami People

### *In Finland:*

- The Ministry of Agriculture- and Forestry
- The Reindeer Herders Association

### *In Russia:*

- The Ministry of Agriculture
- Institute for Agriculture economy in North-west Russia
- Russian Reindeer Herders Union

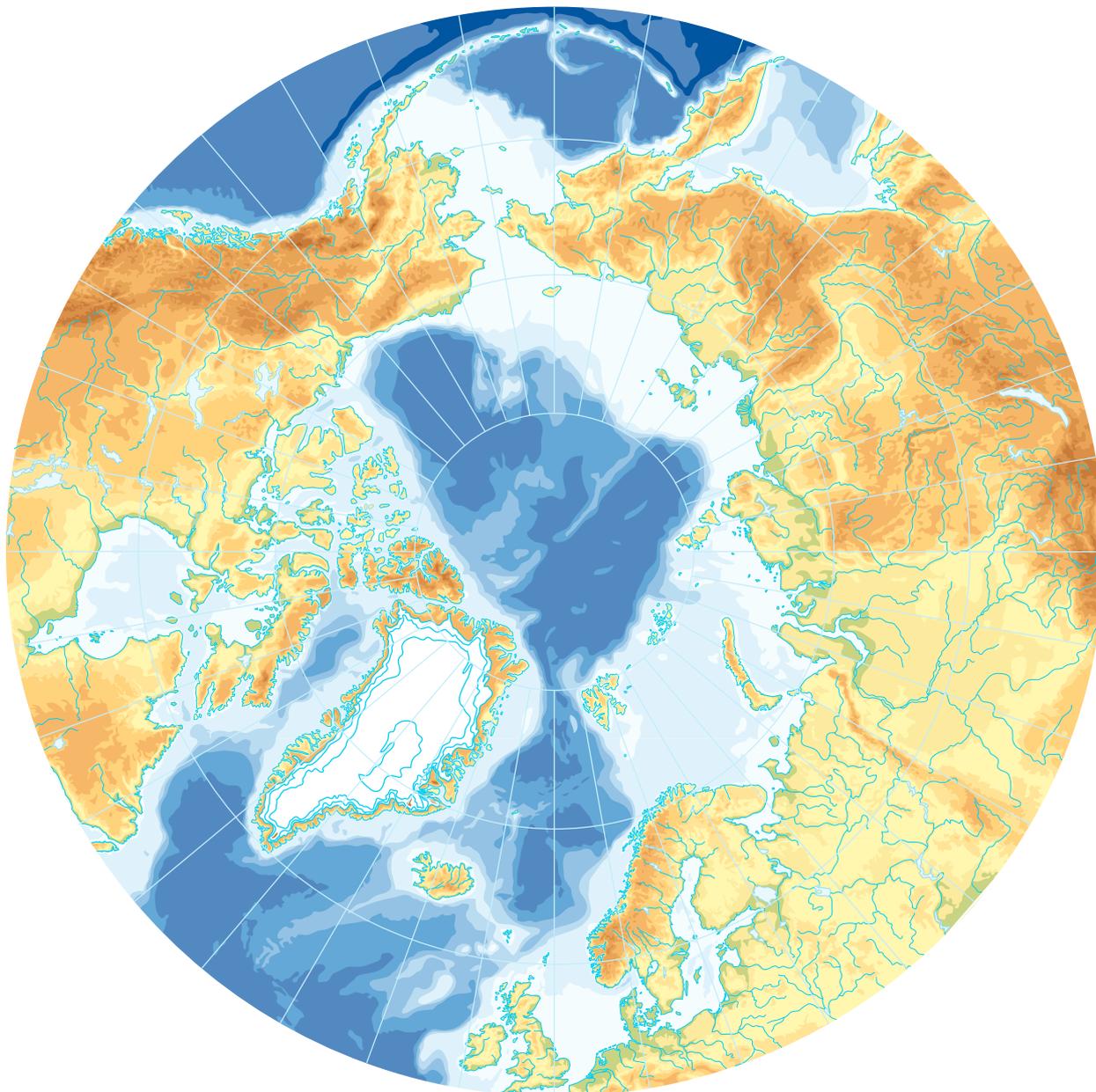
## Readers Guide

The report is divided into eight chapters and one appendix:

- Chapter 1: Introduction to the report with background information about the “Sustainable Reindeer Husbandry” project, participants in the project and the framework for this report.
- Chapter 2: offers a introduction to the reindeer industry and gives a short introduction to the concepts of reindeer husbandry.
- Chapter 3: reindeer husbandry in Russia
- Chapter 4: reindeer husbandry in Alaska
- Chapter 5: reindeer husbandry in Norway
- Chapter 6: reindeer husbandry in Sweden
- Chapter 7: reindeer husbandry in Finland
- Appendix A: short report about the present situation in reindeer husbandry in Mongolia
- Appendix B: Recommendations from the International Steering Committee

### Map I: Overview, Circumpolar Area

Map © GRID Arendal







Rock carving, Alta, Norway

Photo: © Johnny Leo L. Jernsletten

# BASIC CONCEPTS IN THE REINDEER INDUSTRY

## Introduction

This chapter presents a short overview of the circumpolar reindeer herding “landscape” and some of the universal principles behind reindeer husbandry. We will introduce the reader to some of the concepts connected to the reindeer industry as a “way-of-life”. It is meant to be a short introduction as a help to those readers who are not familiar with the reindeer industry.

The chapter will also focus on the exceptional diversity found within the reindeer industry in the circumpolar area. The reindeer herding communities are by no means a homogeneous mass that will react in one particular way to external pressures, or changed market conditions, but must be considered equally heterogeneous as groups found in any other society. This is an important point that also will be confirmed throughout the report. This is a point that Flanders emphasises in connection with the opening of the Northern Sea Route:

“Perhaps the most important suggestion made in the Alaskan material is that indigenous groups will not be affected uniformly. [...] Indigenous groups should not be treated as a single mass, all affected the same way.”

The point made from Flanders is valid in our context when it comes to the reindeer herding communities.

## Pastures

In many national management systems the reindeer industry is placed under the Ministry of Agriculture, although it differs in many aspects from what we normally consider as “agriculture”. Reindeer have the ability to utilize pastures in the outlying field that no other animal could use, especially when it comes to lichen. But reindeer can not live only on lichen. The reindeer herd requires different pastures according to seasons. And in order to meet the need for different

pastures the reindeer migrate yearly fourth and back between summer- and winter pastures.

Summer pastures are also called “green pastures” with green plants, herbs, grass etc. This type of pasture secures the growth of the animals and is important for the calves. Good quality summer pastures give the reindeer a head-start for the winter through increased weight. Summer pastures are mainly along the coast where wet, cooling winds help the animals against the mosquito, or in the high mountains where the herd can find peace from insects on patches of snow.

Winter pasture is mainly dominated with lichen. It is often described as the “bottle-neck” for the industry, because the grazing capacity on the winter pastures is normally much lower than on the summer pastures. A general rule is that it is the winter pasture which decides how many reindeer the owner could have inside one grazing area. The winter pasture could also get ice-covered after a period of mild weather. The wet snow will freeze and make a hard cover of ice over the lichen. The reindeer will not get access to the pastures, and the herd has to move to another pasture.

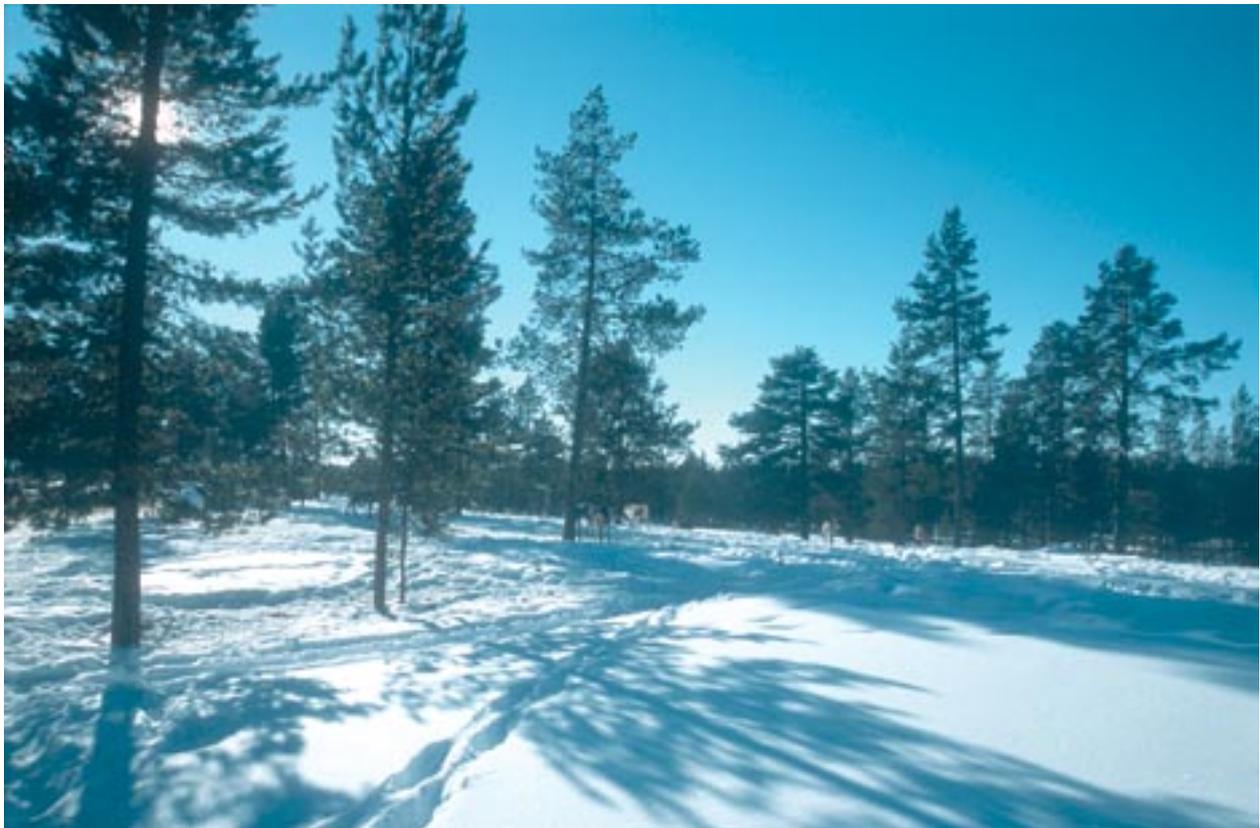
The Saami reindeer owners divide the year into eight seasons. This division reflects what is important

for the reindeer in each season. In the following we want to give the reader an impression of the importance of the access to a diversity of grazing areas throughout the year.

Spring (April-May): This is the calving season and an important time for the herds to grow. The reindeer will be on the calving land with small hills and protection against the cold wind. A calving area has patches with snowless ground, often in a southern slope where the sun is warming. It is important to protect the reindeer from predators and from external disturbances so that the calves and their mothers are not separated.

Spring-summer/early summer (June): This is a time of intensive grazing activity. The animals need to gain weight and it is important that they can graze undisturbed in one area. The period before the mosquitos are hatched and the hot summer days begin is especially important for the calves - good pastures give them the opportunity to grow and become stronger.

Summer (June-July): The animals are moving towards higher grazing areas, or further out on the coast. In the mountain the patches of snow allow the reindeer to get cooled down and to escape from the bugs, and provide fresh grass as the snow melts. On



Winter pasture, Liehittäjä consession area, Sweden

Photo: © Johnny Leo L. Jernsletten



Reindeer herder, Russia

Photo: © Konstantin Klokov

the coast the fresh winds from the sea drives the bugs away. This is also the time for the reindeer owner to mark the calves.

Autumn-summer (August): The animals are still grazing on the green pastures, but mushroom are also an important part of the diet. They are now building up the fat reserves for the winter.

Autumn (September-October): Cold nights make the green pastures wither and the animals gradually change their diet to lichen. This is also the rutting season and some of the bulls are slaughtered before they go into heat, which will give the meat a nonpleasant taste.

Autumn-winter (November - December): Lichen pastures get more and more important for the animals. This is also the slaughtering season, which is an important part of the work for the owner. This is the time to decide the herd structure. Which animals should be slaughtered and which should be used for breeding. After the slaughtering the animals are collected into different herds and the move down to the winter pastures begins.

Winter (December - March): The animals are separated into small herds, and are mainly grazing on lichens. The herds are guarded from a distance, and protected from predators.

Spring-winter (March-April): This is the season for return to the summer pastures. There is still a lot of snow and it is difficult for the animals to get down to the lichens. The southern slopes are important for the herd during the migration, because here it is less snow and easier access to the pastures.

In different regions the distribution of seasonal pastures can vary: for example the Nenets in Western Siberia do not use mountain pastures. They migrate with their herds from summer pastures situated on the tundra on the Arctic Ocean coast and spend the winter in the forest-tundra or taiga. In Alaska there are herds that graze year round on relatively small tundra islands. In the Siberian taiga herds are kept year round in forests landscapes. But in all cases the diversity of seasonal pastures with sufficient carrying capacity remains the essential condition for reindeer husbandry.



Reindeer herd on St. Paul Island, Alaska.

Photo: © Johnny Leo L. Jernsletten

## Ownership to Reindeer

The relationship between the reindeer and the owner or herder is essential for the day-to-day work with the herds. To know your animals by behaviour and colour is valued in most of the reindeer herding cultures. The ability to create a well composed herd with all the important characterizations is also highly valued and signals that you are a successful reindeer owner. Aspects that are important for a well composed herd are for instance the proportion of male and female reindeer, variation in the colours of the animals, and individual behavior. A well composed herd is easy to manage and enables the animals to utilize the pasture more efficiently.

The relationship between the reindeer owners are also important for the reindeer husbandry. The family is essential because they represent a potential work force in intensive periods, like marking of the calves, slaughtering or the separation of the herd into several smaller herds. In these periods, the reindeer owners depends on persons that are knowledgeable and willing to lend a hand. In other seasons there is less need for extra workers. This variation in need of labour is the historical background for different adaptations of

communities in the circumpolar area. The communities are able to alternate between working with the herds and other necessary activities like hunting and fishing.

According to the Norwegian management system the “husbandry unit” (driftsenhet) is the basis of the reindeer husbandry organisation. This is a form of “licence” given to an individual from the area board where the unit wants to establish itself. The licence entitles a person to start with reindeer husbandry inside one designated area, and the area board decides which district the new unit will belong to.

In legal terms a unit consist of one herd managed by one person, or the spouses together, if both persons have their own earmarks in the herd. If both persons have a husbandry unit before they are married, they can keep their separate units also after the marriage.

The concept of “husbandry unit” is not in accordance with the way the Saami themselves have traditionally organised the reindeer husbandry. The “Siida” is an ancient Saami community system within a designated area. It could also be defined as a working partnership where the members had individual rights to resources but helped each other with the management of the herds, the hunting and fishing.



Artificial feeding of reindeer.

Photo: © Johnny Leo L. Jernsletten

The community could consist of several families and their reindeer herds. The *siida* is not just a working partnership, but also a central basis for the traditional use of the grazing areas.

In Russia after the socialist reorganisations of economy in the 1930's the main part of the reindeer owners became wage workers for *kolkhozes* and *sovkhozes*. Small private herds were united into larger ones (from several hundred animals in the taiga areas to 2.000-3.000 on the tundra). To guard large herds the herders' families had been divided into brigades. Accordingly, the brigade is considered a basic productive unit in reindeer husbandry in Russia today. The brigade is a group of families, usually related to each other, who jointly manage one herd within a designated pasture area. During "perestroika" *kolkhozes* and *sovkhozes* were transformed into other types of enterprises, but the brigades have remained the basic element of the industry.

## The basis for the Report

The reindeer industry is an important part of the societies in Russia, Alaska, Norway, Sweden and Finland,

but it is rather "invisible" in comparison with other industries. At the same time, it is an area intensive industry dependent on extensive grazing grounds.

Relatively speaking, and according to different national statistics, a small number of people are connected to the industry. In connection with this an often raised question occurs from persons outside the industry: how much consideration should be taken to protect and safeguard this industry against other interests in the society? In accordance with international legislation, the fundamental viewpoint of this report is that reindeer husbandry forms a "way-of-life" more than a "way-of-production". A loss of this industry will not only mean a loss of reindeer meat and other products to a market, it will also mean a loss of many Arctic cultures.

The interviews conducted for this report with the reindeer herders, reindeer owners and other persons connected to the industry, have clearly shown that the self-esteem and self-respect of the people involved in reindeer husbandry is strong, even increasing, despite the fact that the industry in some areas is fighting for survival. This is the case in the eastern part of Russia, and the western part of Alaska; and the development in the southern part of Sweden is not optimistic. Still,

the reindeer owners, herders and their families do not want to give up. This is a strong message from the industry, and we would like to emphasize this in the report.

The point could be illustrated by some of the questions put forward in a questionnaire answered by Swedish reindeer owners in 1998. We will let three of the questions illustrate our point:

The first question:

“How did you become involved in reindeer husbandry?”

The answers were divided into five alternatives, and most responses were

“Reindeer husbandry is my biggest interest” and “My parents were reindeer owners. It was natural to be like them”.

The second question:

“Where do you obtain knowledge and inspiration in your reindeer husbandry?”

This time there were seven alternatives. The top two were:

“From other reindeer owners in the same situation as myself” and “From older and more skilled reindeer owners through traditional knowledge”.

The third question:

“Which are the positive aspects of being a reindeer herder?”

Six alternatives were given, and the top two were:

“To be a reindeer owner is part of my tradition” and “The satisfaction when the reindeer are healthy and well”.

Reindeer husbandry is an important part of life for the owners and their families. Some will even say “it is our life”. But reindeer husbandry is also important to persons outside the industry – it provides raw material for handicraft and is a common symbol of identity for indigenous peoples in the north. Reindeer husbandry makes up one of several important parts of what we in a generic term call “arctic cultures”, and without

reindeer husbandry, all these cultures will experience severe losses of tradition.

## The Concepts of Reindeer Herding, Reindeer Management and Reindeer husbandry

The use of the concepts reindeer herding, reindeer management and reindeer husbandry is part of a long debate in the scientific literature. The concept “ranging” has also been introduced to describe the different ways of working with a reindeer herd. During the project field trips we have been introduced to a number of ways that people relate to their herds. The span is enormous - from families migrating with their animals 5-600 km between summer and winter pastures, only using reindeer as transport, to families with the animals in a fence during the winter, and driving the animals 30-40 km with car to the summer pasture. A considerable variation is found within each country, or even within one pasture area.

It is important to notice that the use of different concepts to describe the organisation of work within the industry, could also imply a hidden classification of people. That involves a “ranking” situation between peoples. We have tried to avoid this through a flexible approach to our description of the management systems. Reindeer herding is used either for the concrete action with a herd, or as a description of persons working with the herd, without any ownership to the animals. Reindeer management is used in the description of different herding systems, in other words the overall organisation. Reindeer husbandry is used as a general term for the families living of the animals, or having a close relationship to the animals through different kinds of ownership.



Nganasans boy from the Piasina River in Central Taimyr, Russia  
Photo © Konstantin Klokov

## Reindeer Husbandry in Russia

### Introduction

Russia has about two thirds of the world's population of domesticated reindeer. They are herded on a territory of more than three millions of square kilometers on the tundra, forest-tundra, taiga and mountain areas. The reindeer husbandry in Russia is the basis of the cultures of many northern indigenous peoples, who have various traditions and wide experiences of reindeer herding in a diversity of landscapes. Domesticated reindeer allows them to live in harmony with the extremely severe natural conditions of the Far North. Many herders say: "Our people will live as long as the reindeer are here. If there are no reindeer –there will not be our people".

Today the reindeer husbandry in Russia is receding. In several districts it has completely disappeared. The

total number of domesticated reindeer has decreased from almost 2.5 millions to 1.2 million. The recession of the reindeer husbandry is dramatic for a number of reindeer herding peoples, since the reindeer economy is the major factor of their ethnic consolidation.

This chapter will focus on the present situation and trends in the reindeer husbandry with connection to the life of the indigenous peoples, as well as the changes of economic priorities arising as a consequence of the transition in the Russian economy. Since the situation in the reindeer husbandry all over the huge territory of Russia is very various, the analyses has been made according to the main zones and types of reindeer husbandry in Russia. Many concrete examples from the regions of reindeer husbandry studied during field works are given.

## Collected data

This chapter is written on the base of three main sources of data:

- four special reports written by Russian experts: Evgeni Syroechkovskii (Wild reindeer), Marina Zen'ko (Legal status of reindeer husbandry), Atriom Rybkin (National management of reindeer husbandry), and Aleksandr Komarov (Reinder Herder Union of Russia);
- four reports on field works conducted by Konstantin Klokov and Johnny-Leo L. Jernsletten in four reindeer husbandry regions of Russia (Murmansk Oblast', Yamal-Nenets Autonomous Okrug, Yakutia and Chukotka);
- statistic data, collected during fieldworks and received from the Russian Ministry of Agriculture and the Reindeer Herder Union of Russia.
- Maps are made by Olga Petina.

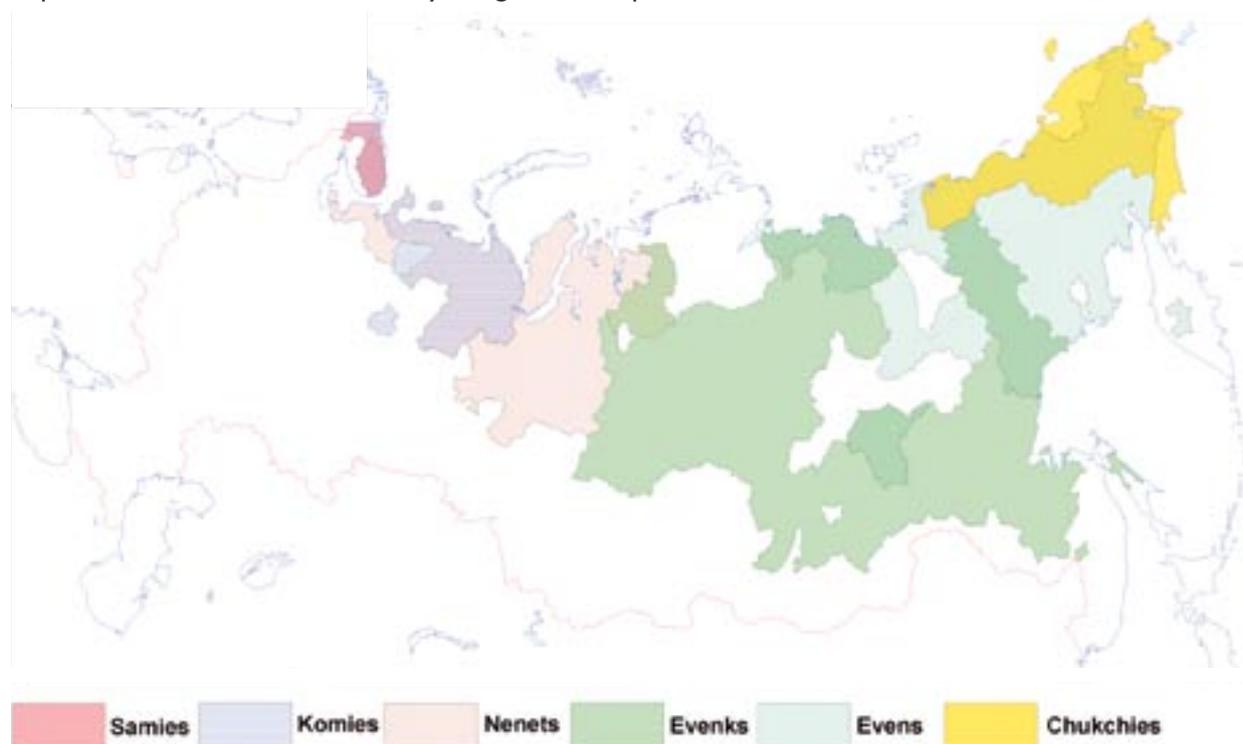
## Reindeer herding peoples

Unlike Norway, Sweden and Finland there are many different peoples engaged in reindeer husbandry in Russia. Representatives of the 16 reindeer breeding peoples are in the official list of indigenous small-numbered peoples of the North. Besides them, separate groups of Komi and Yakuts are also engaged in reindeer husbandry, but they are not included in the list, because their number is over 50.000. There are no Russian reindeer herders now, but Russian often work in reindeer enterprises as administrative officials and as specialists (veterinaries, zootechnicians, accountants) or work with equipment (mechanics, drivers of tractors, land-rovers, etc.). It should be noted, that reindeer husbandry in Russia is not an exclusive right for indigenous peoples.

Nenets, Komi, Saami, Evens, Evenks, Chukchi, Koriaks, Khants, and Dolgans have cultural traditions closely connected with reindeer breeding, their mode of life and economy depend mostly on reindeer (see map this page).

From a cultural point of view there are four types of reindeer husbandry in Russia:

Map 1: Areas of Reindeer Husbandry, Indigenous Peoples in Russia





Chukchi from the Basin of Belaya River in Central Chukotka, Russia

Photo © Konstantin Klokov

- Saami's,
- Nenets' and Komi-Izhems',
- Tungus-Yakuts',
- Chukchi-Koriaks'.

This classification reflects the history of reindeer husbandry during the last centuries. Types of reindeer husbandry differs in the means of reindeer keeping, making equipment (sledge, harness), nomad dwelling (chum, yaranga, balok), clothing and shoes, means of using animals for transport (different types of harnesses, using reindeer for pack and saddle), milking (or not) females, using (or not) dogs for reindeer pasturing, construction of fences, sheds and other means of the traditional economy.

For example, some distinctive features of the Nenets' and Komi-Izhems' reindeer herding are: herd preserving and directing during the whole day; reindeer herding with aid of dogs and reindeer teams; using sledges all over the year; lack of saddle- and pack-reindeer. Reindeer herders live in conic chums.

The Chukchi-Koriaks use sledges of very different construction than Nenets' ones only in winter. During the warm seasons herders move on foot, without harnessing reindeer even when they migrate from one place to the other. The traditional dwelling of the reindeer herders is the yaranga.

Various reindeer transport (sledge-, saddle-, pack-reindeer) is in use among the Tungus-Yakuts' reindeer herders. Fences are also wide-spread, as well as different additional fodder.

To let reindeer "loose" or "semi-loose" while herding is a Saami tradition.

The largest reindeer stock in Russia belongs to the Nenets and the Komi-Izhems, then Chukchi-Koriaks, Tungus-Yakuts and Saami.

The traditions of different reindeer herding peoples are significant even today. Now, in the period of reforms, under sharp changes of economic and social conditions of life, they influence greatly on their choice of economic strategy and ways of adaptation to the market economy. Here are some examples.

The Nenets who are the most numerous indigenous people engaged in large herd reindeer husbandry - have very close connections with their animals. Private reindeer are the main source for their survival, size of the herd indicates social status. The growth of ones own reindeer herd is the main task for each Nenets' reindeer herder. Reforms of the last years stimulating development of private business are good for Nenets' reindeer breeding development.

The Chukchi, who traditionally also have large herds, do not have the same close connection with their reindeer as the Nenets. One can find as explanation to this in the history of the people, which has



Dolgons from Ust' Avam settlement in Central Taimyr, Russia

Photo © Konstantin Klokov

been divided into two groups - reindeer breeders and sea hunters. In different periods of history most part of the Chukchi changed reindeer herding for sea hunting and then back again, according to changes of natural and economic conditions. Now, the number of Chukchi engaged in reindeer herding notably shortens and the number of hunters on sea mammals grows.

The Evenks, among other small-numbered indigenous peoples inhabiting the Siberian taiga (Mansi, Khants, Selkups, Evens, separate groups of Yakuts, Yukagirs, Tuvinians-Todgins, Tofalars, Oroks, etc.) have been mainly connected with transport-using reindeer herding. Their reindeer are rather domesticated (much more than reindeer of other peoples) and not afraid of people. Traditionally they were very careful about their reindeer, which were not slaughtered except in special cases. They had no tendency to make the herd large, because such a herd would take too much time and prevent them from hunting. At the same time they have never been afraid of losing them, because even an absolute lack of reindeer wouldn't deprive them of means of subsistence. Reindeer losses were very common for taiga hunters recently. Under favorable circumstances they bought

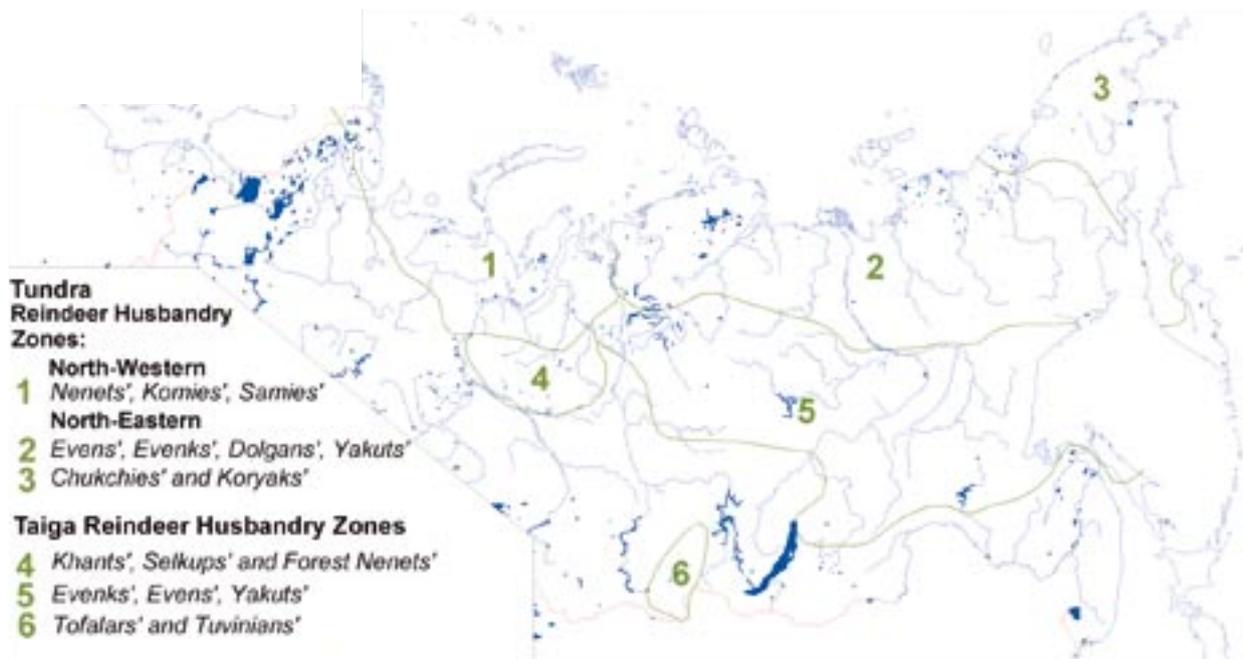
reindeer again. Now such traditions are not favourable for the development of large herds of reindeer for meat production.

The number of people involved in reindeer herding shortens in Russia. Kets, Nganasans, Karels and separate groups of the Russian population (Pomors in Murmanskaya oblast', Symski old-believers in Krasnoyarski krai, etc.) kept reindeer several decades ago, but have lost reindeer husbandry now.

## Main types of reindeer husbandry

On the large territory of the Russian North there is considerable variety of forms of reindeer husbandry (see map opposite page). This fact is important because different types of husbandry requires different approaches in management. In general one can divide the diversity in reindeer husbandry forms into two main types. We will name them "tundra type" and "taiga type" of reindeer husbandry.

Map 2: Different Types of Reindeer Husbandry



### *Tundra Reindeer Husbandry*

The first type covers almost all the tundra and forest-tundra in Russia (except Taymyr which is occupied by a large wild reindeer population) and also mountainous taiga areas situated mainly in the North-Eastern part of the country.

The reindeer herds have long migration routes, usually several hundreds kilometres. During summer the reindeer graze the shores of the northern seas and during winter in the forest-tundra and northern taiga. In forest-tundra and mountainous landscapes herds graze the whole year round in the same area including both forests and tundra territories providing good grazing in different seasons. Migration routes are much shorter than on the tundra – not more than one hundred kilometres.

The herds in reindeer husbandry of the tundra type are big: 1000-3000 animals or even more. The “close” herding method typical for Nenets’, Komi-Izhems’ and Chukchi-Koriaks’ traditions is most common. The Saami’s tradition of “loose” herding (without continuous control over the reindeer herd) is used on Kol’ski Peninsula together with the “close” herding.

The main aim of reindeer husbandry of this type is meat production. Now there are enterprises oriented not only on meat, but also on soft antler production or on full using of all reindeer resources including skins,

antlers, blood, endocrine glands, etc. The structure of the herds depend on the type of husbandry: enterprises try to enlarge female number for meat production, or male number for production of soft antlers.

According to D. I. Syrovatski’s data (2000) under modern conditions, if the husbandry is organized in a rational manner, meat should cover about 2/3 of the total income from the production. Today reindeer enterprises get their profits almost only from meat production.

For herders engaged in the tundra type of reindeer husbandry, reindeer are the main (and sometimes the only) means of subsistence. The territory occupied by this type of reindeer husbandry can be divided into two zones - North-Western (from western border of Russia to Yenisei) and North-Eastern (from Yenisei to the Pacific ocean).

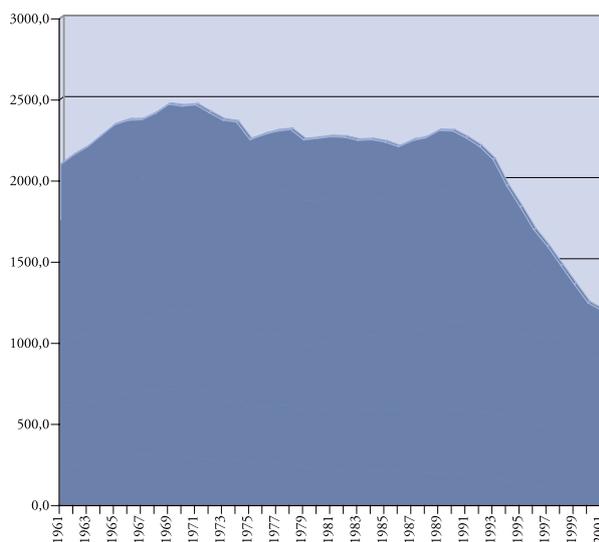
### *Taiga Reindeer Husbandry*

The taiga type of reindeer husbandry is quite different. The herds are not large: usually a few hundred animals. There are no long migrations. The “loose” or “free-camp” herding are used, when animals graze alone, periodically coming to herders’ houses or camps. Sometimes reindeer are kept on territory completely fenced.

Such husbandry is mostly oriented towards subsistence and transport. It does not produce a lot of meat, as the reindeer are used mostly for the transport needs of indigenous populations especially during the fur animal hunting season. The reindeer also supply the herders' families with meat and skins. Main income comes not from the reindeer themselves, but from products of hunting with aid of these animals (mainly from fur skins).

In the past, up to the end of the 1950's - beginning of 1960's, reindeer of the Russian North were used for post and pack transportation, and reindeer owners had their main income from reindeer rent. Large herds were held especially for this purpose. Before the establishment of kolkhozes, some reindeer herders' families (especially Evenks', Evenks', Khants') had

**Figure 1: Dynamics of Number of Domesticated Reindeer in Russia, in Thousand**



thousands reindeer for transport. Later the kolkhozes and sovkhoses in the taiga zone had big profits from the rent of transport reindeer for geological and other expeditions. Besides, they had additional income from meat. Now reindeer are rented only for the transportation of tourists. But this branch of the tourist business is just emerging in Russia.

These are some reasons for the shortening of the taiga type of reindeer husbandry in Siberia during the last decades. This type of reindeer herding has completely disappeared in the European North. That's why the taiga zone is also called the zone of disappearing reindeer husbandry.

## Trends in number of domesticated reindeer

The number of domesticated reindeer in Russia has been changing significantly within the last 100 years in the range of from 1.2 million (2001) to almost 2.5 million (1969). The main reasons for these changes have been of social and economic character.

The first accurate registration of the reindeer population in Russia was carried out in 1926-1927, the total was 2.195.000 reindeer, and all belonged to private owners. Reindeer husbandry had three main purposes: the use of animals for transport, subsistence economy and meat production.

In the 1930's the transformation of reindeer herds into public ownership was a very painful process for Northern indigenous peoples, especially at the initial stage. The size of private herds was strictly limited.

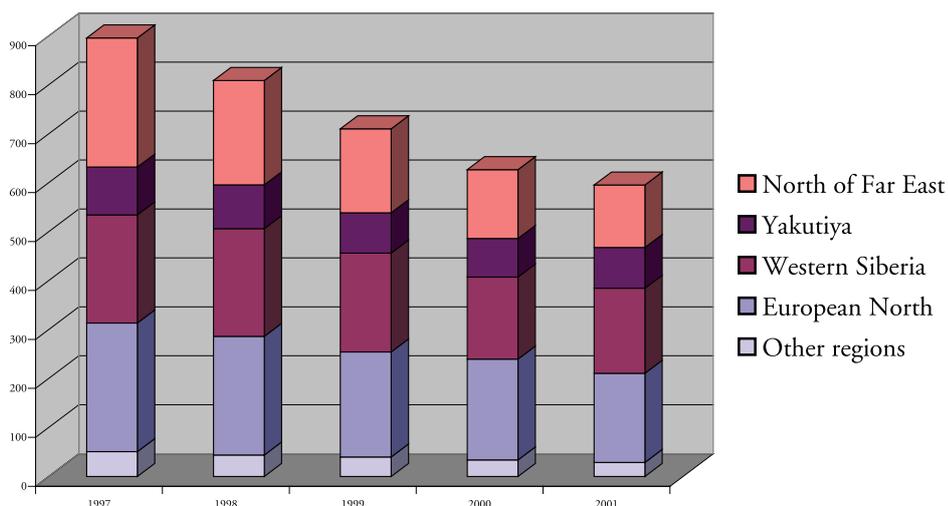
As a result, the total number of domesticated reindeer in Russia decreased by 1934 to the minimum level of 1.434.700.

Then the total number of reindeer increased steadily, though slowly and unstably at first. In the 1960's and 1970's, the number of domesticated reindeer was by far over 2 million (Figure 1) and in the period 1968-1972 it was at the maximum (over 2.400.000). At that time the percentage of private-owned reindeer was at the lowest (11-13%).

The indigenous peoples of the North were still passively opposed to public reindeer husbandry, but through a generation gradually got accustomed to it. It played an important role that the Soviet government paid great attention to the public reindeer husbandry and allocated large sums of money for developing it. Various zootechnic and veterinary procedures were carried out on a wide scale. In particular, considerable work was done in overcoming reindeer diseases, like anthrax, scabies, brucellosis, necrobacillosis. Great attention was paid to the scientific support of reindeer husbandry. In Norilsk, Yakutsk, Magadan and Naryan-Mar special institutes and a network of research stations were set up to service the agriculture of the North, and reindeer husbandry occupied a prominent place among the agricultural projects. New technical means were taken into use in reindeer husbandry, like special caterpillar vehicles, airplanes and helicopters, radio communication and electric power supply.

Unfortunately, the same period was characterized by purposeful struggle against the nomadic way of life of reindeer herders and Northern peoples in general.

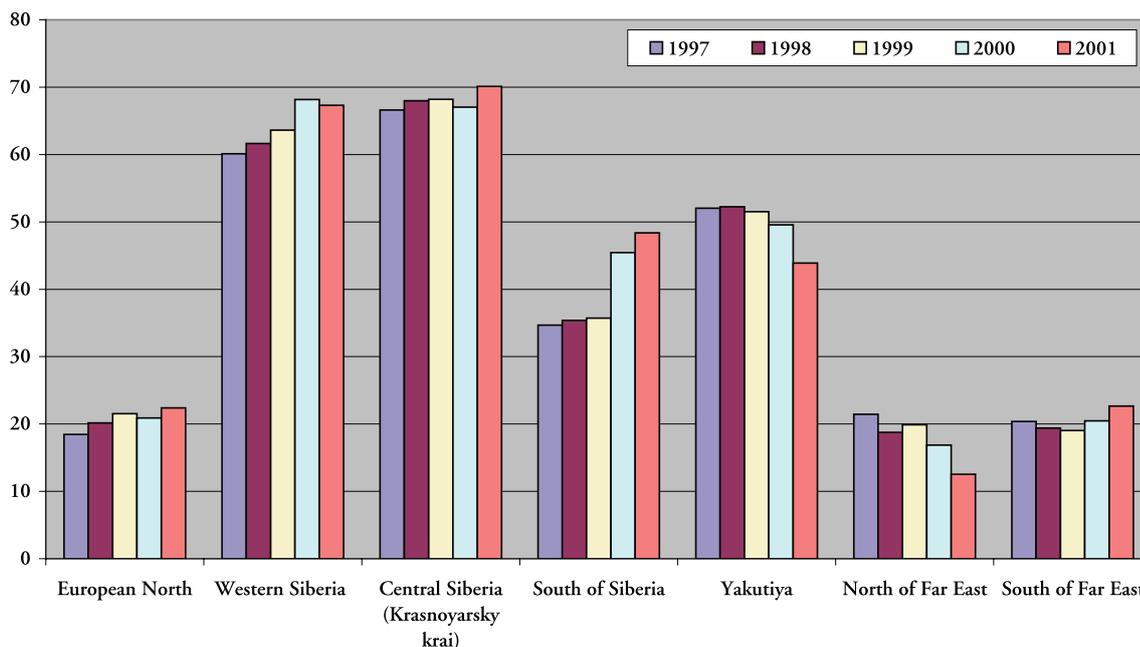
Figure 2: Dynamics of the Number of Domesticated Reindeer in Enterprises, in Thousand



This resulted in quite negative consequences. The system of a traditional wildlife management and of a traditional way of life of the reindeer herding peoples was partly disrupted. During the compulsory elimination of nomadism (which used to be the reindeer herders' normal way of life in the Russian North) the aboriginal family life was deteriorated. It was quite unnatural when in case of the so-called shift system of herding, herders' families were divided: the men were in the herds, while the women and children were in specially built settlements.

Together with the development of large-herd reindeer husbandry on the tundra, forest-tundra, and mountain taiga areas, the 1970's and 1980's were characterized by the recession of the transport reindeer husbandry of the Khanty, Mansi, Evenk, Even, Selkup and some other peoples in the taiga. By 1989 the taiga reindeer husbandry was reduced at least twice, down to the level of 100-150.000 reindeer (in the 1970's there were 300.000 reindeer). Although the forage capacity of the taiga reindeer pasture allows successfully pasturing of at least 1-1.5 million domesticated reindeer.

Figure 3. Rate of Reindeer in Households, %



The reasons were especially of economic character: the development of power-driven transport, especially the appearance of snowscooters dramatically reduced the resident populations need for transport reindeer.

In the 1990's, when the formation of market economy and democratization of the society began, the situation in reindeer husbandry changed dramatically. That resulted in a significant reduction in the population size of domesticated reindeer, decline and decay of collective reindeer husbandry of the kolkhoz' and sovkhos' type (Figure 2), and partial return to

private ownership of reindeer herds. Private-owned domesticated reindeer constitute now (01.01.2002) almost 50% of the total number (Figure 3).

Number of reindeer commonly tends to shorten. The last year (01.01.2002) it was only 1.196.000 domesticated reindeer, i. e. 48 % from their maximum number - 2.467.000 in 1969.

In the largest region - the Northe-East the number of reindeer has been reduced by three times. In several regions there are practically no reindeer left.

Figure 4: Dynamics of Number of Domesticated Reindeer in North-Western Regions, in Thousand

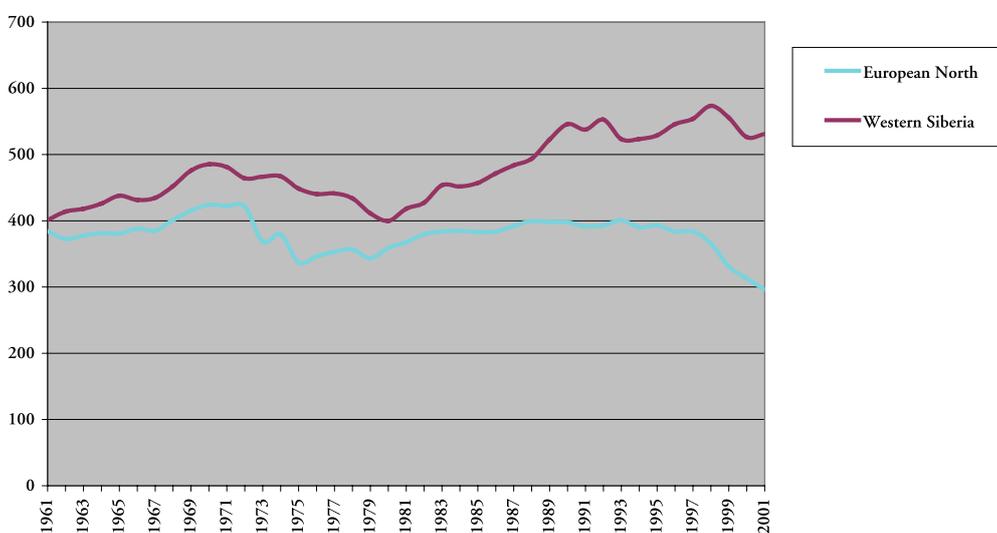
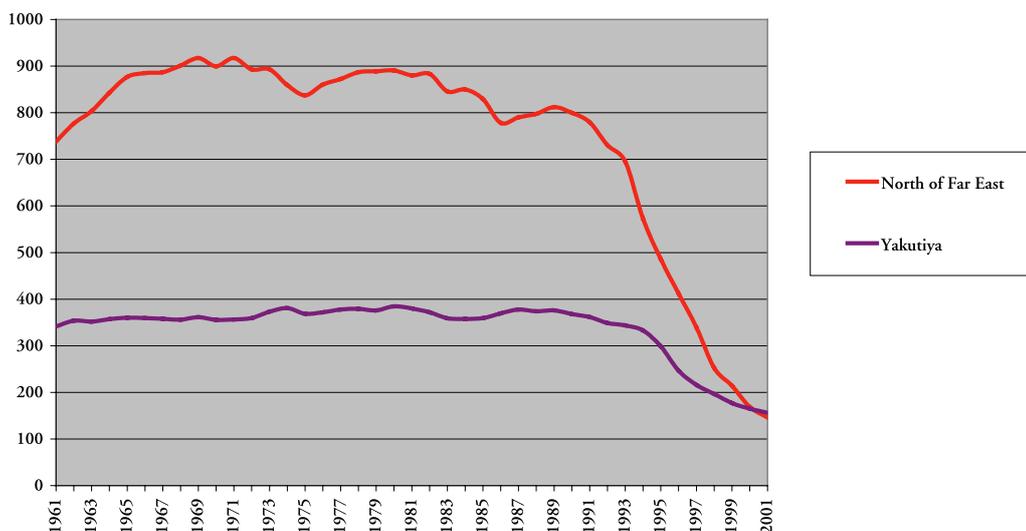


Figure 5: Dynamics of Number of Domesticated Reindeer in North-Eastern Regions, in Thousand



## Modern situation in main reindeer husbandry regions

As noticed before, all reindeer herding regions in Russia can be divided into three zones according to their geographical, ethnic and economic characteristics. They differ in terms of modernization tendency to change and perspectives on the future development.

### *The North-West Zone (Figure 4)*

The zone includes the tundra and forest-tundra from the western borders of the RF to the Yenisei. It is the territory of Saami's, Nenets' and Komi-izhems' reindeer herding within the limits of the Murmansk and Arkhangelsk Oblasts, the Komi Republic, the Yamal-Nenets and western part of Taimyr AO. Although this region has been under intensive oil and gas exploitation, the reindeer husbandry here is comparatively stable. The number of reindeer on the main part of this territory is constant or shortens little during the last decade (see Figure 2). In two districts (Yamal, and Taz) it has gradually grown. The economic conditions for further development of reindeer husbandry in the northwestern Russia are comparatively favorable. Particularly it is connected with a high level of industrial development in the region, where there is intensive oil and gas exploitation (Yamal-Nenets and Nenets AO). The Yamal-Nenets AO is now the largest region

of reindeer husbandry. Almost a half of all Russian domesticated reindeer are concentrated here. The main factors that prevent it from developing further are storage, processing and realization of reindeer meat; there is also a lack of pastures in many places.

### *The North-East Zone (Figure 5)*

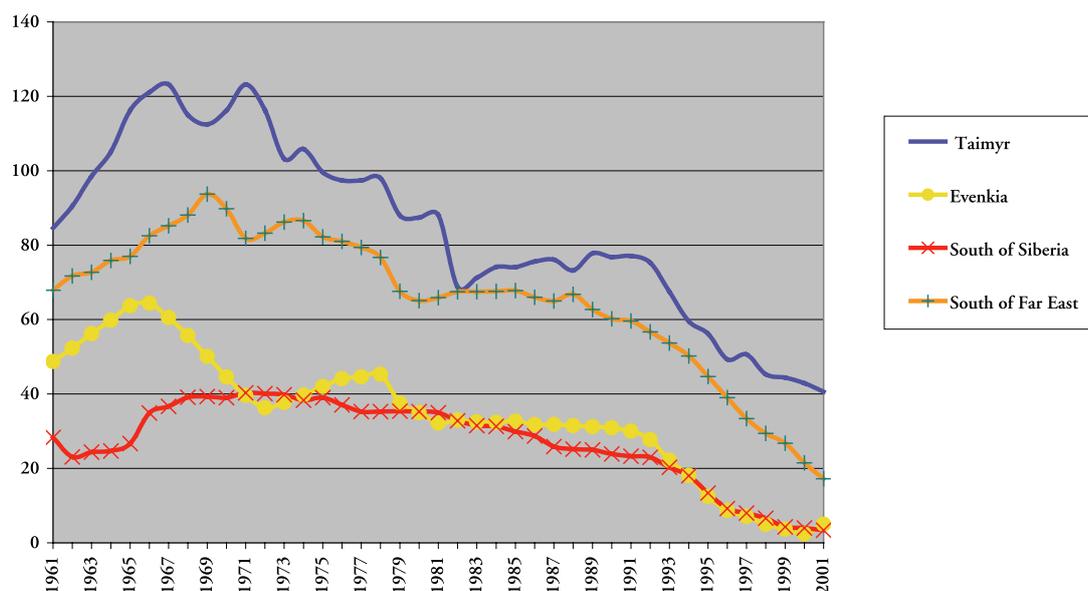
The zone includes territories of tundra, forest-tundra, and northern mountainous taiga in the east from Yenisei (Yakutia, Chukotka and Koriak AO, Kamchatka, and Magadan oblasts).

Reindeer husbandry here is the occupation of Evens, Chukchi, and Koriaks. It is an area of rapid recession in number of reindeer and as a consequence impoverishment of indigenous population connected with reindeer husbandry. To stabilize the situation and to stop the shortening in number of reindeer, financial support for reindeer enterprises and herders' families from regional budgets takes place. But there are no obvious results. The perspectives of the branch are uncertain. Reindeer husbandry here seems to develop only with other branches of the traditional economy (hunting on wild reindeer, fur animals, sea mammals, fishing) as parts of a common economic unit.

### *The Siberian Taiga Zone (Figure 6)*

The zone includes all reindeer herding regions of the Siberian taiga (Evenkia, Buriatia, Tyva, Irkutsk,

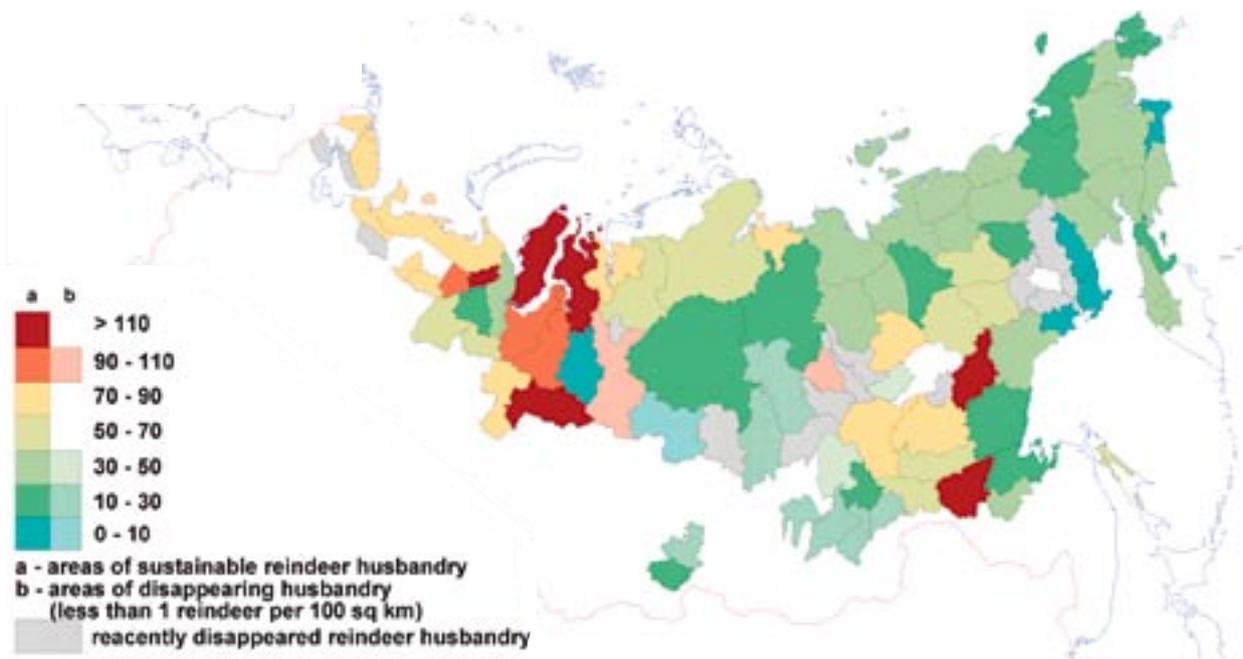
Figure 6: Dynamics of Number of Domesticated Reindeer in Southern Regions and Taimyr,



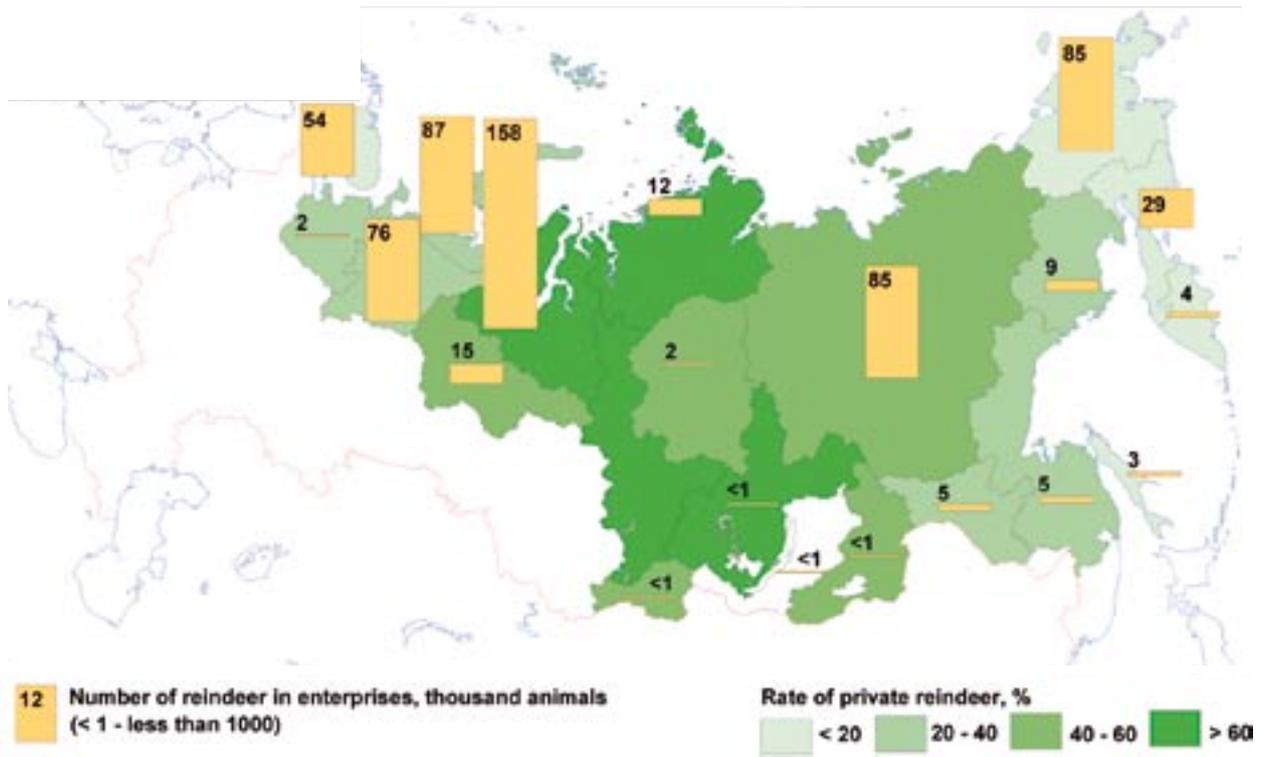
Map 3: Number of Domesticated Reindeer per 100 sq km



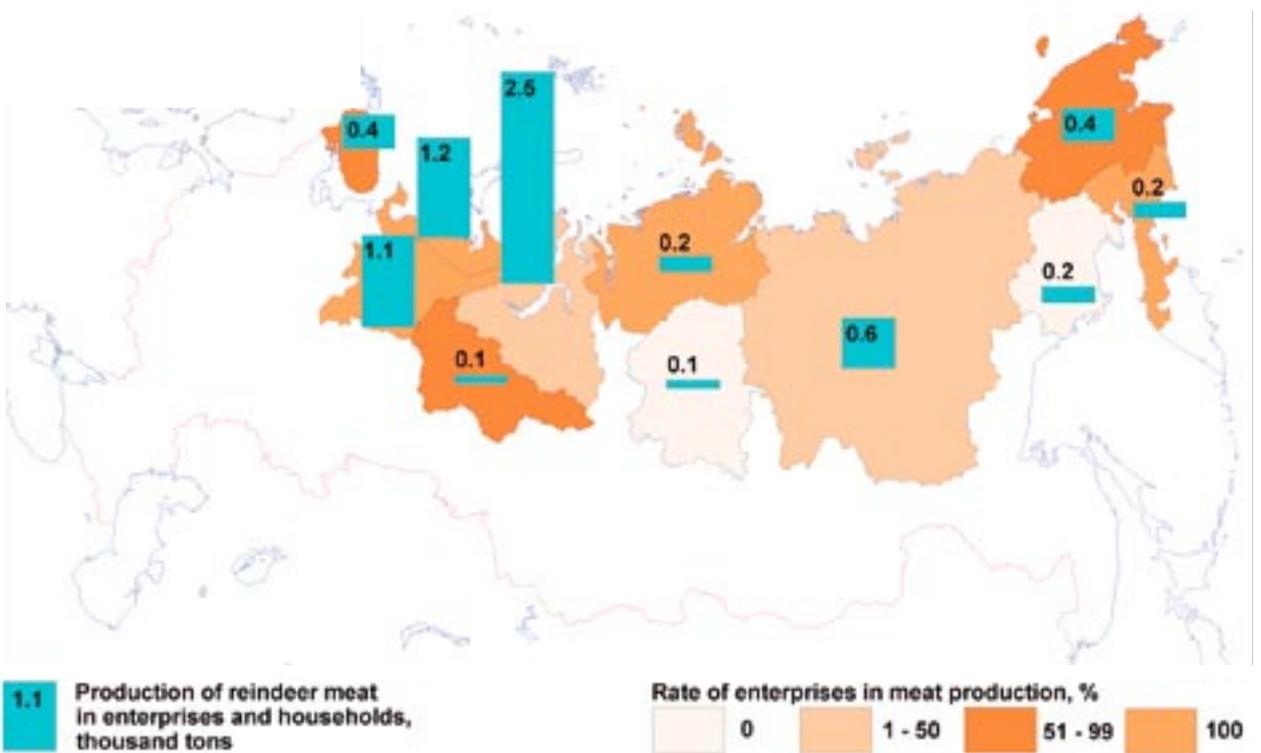
Map 4: Trends in Domesticated Reindeer Number, 1999/1990, %



Map 5: Rate of Private Reindeer and Number of Reindeer in Enterprises, 01/01 2002



Map 6: Production of Reindeer Meat, 2001



Chita, Amur, and Sakhalin oblasts, Krasnoyarsk and Khabarovsk krai) except territories in the northern mountainous taiga. Many indigenous peoples are engaged in reindeer herding here. The taiga in the Western Siberia (Khanty-Mansi AO) can also be included in the list, but this territory is different when it comes to conditions for reindeer herding and reindeer husbandry here is more stable. In the European part of the country (Karelia, forest regions of the Komi) the taiga reindeer herding has disappeared. Now, it is rapidly receding throughout the large territory of the Siberian taiga. The area used for herding is not continuous, it is divided into separate isolated lots with a few hundred reindeer on each. But even they are becoming smaller and more separated. In many taiga districts, where reindeer husbandry used to be common, there are no reindeer at all. The Tofalar reindeer (Irkutsk oblast) are nearly extinct; these reindeer used to be the strongest and largest transport reindeer on earth. In some regions the number of reindeer has grown during last decade. But this situation is connected with the impoverishment of the population. Earlier they used snow-scooters for hunting but now price on petrol is too high and they have to go back to the traditional reindeer transport.

Under the modern conditions the reindeer husbandry in the taiga can expect to be supported and preserved mainly as a part of the culture of the indigenous peoples. These traditions are rich and various, but are practically out of use under the modern economic conditions in Russia.

As to economy (except the use of transport reindeer for hunting), the future perspectives can be connected with the creation of cultural and recreational centres (reindeer used for tourism) and with breeding reindeer within fences.

## National Management of Reindeer Husbandry

### Forms of ownership of reindeer and pastures

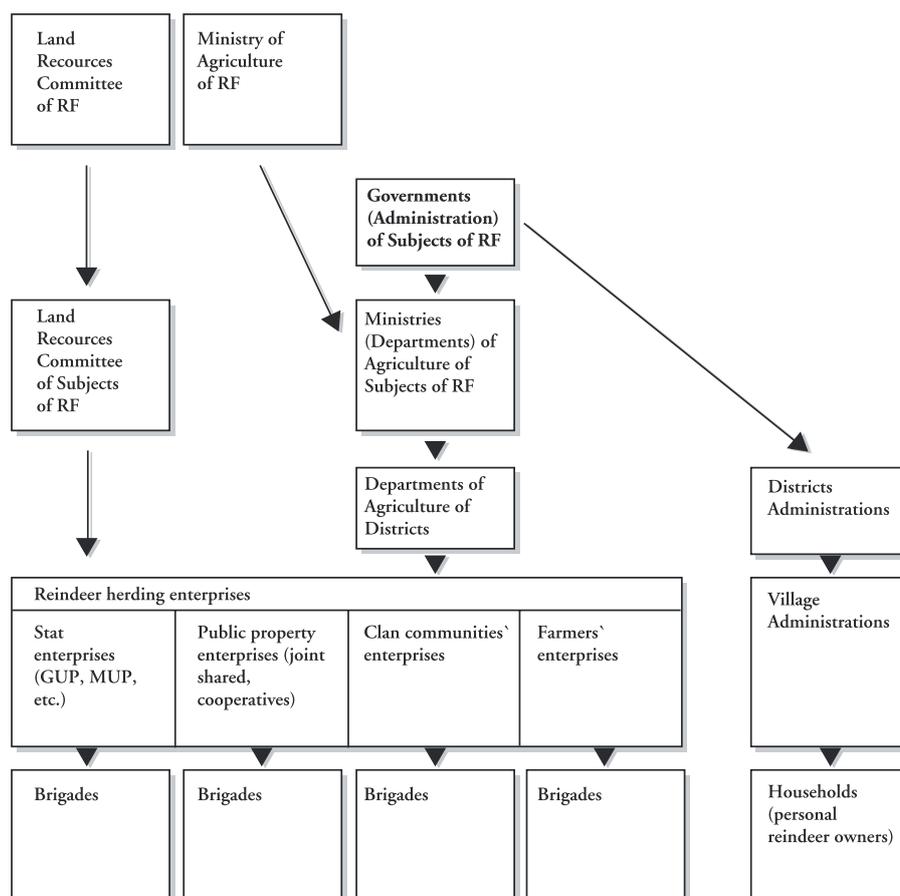
There are three forms of ownership of reindeer in Russia today: public ownership, state ownership and private ownership, which in turn, divides into farmers' and personal ownership (Figure 7).



Evenks from Sovietskie Lakes in Turukhansk District, Russia

Photo © Konstantin Klovov

Figure 7: Management System of Reindeer Husbandry in Russia



There are more than 1.100 agricultural enterprises with different forms of ownership functioning now in the North. Most of them are connected to reindeer husbandry. Various forms of enterprises are created in the North, as well as all over the Russia (Materials of the Ministry of Agriculture of the RF ..., 2001).

State ownership is preserved in experimental-producing enterprises, belonging to agricultural research stations of the Russian Agricultural Academy, as well as in the number of enterprises, which were transformed after privatization into unitary ones of municipal or regional subordination (MUP or GUP).

In state enterprises the reindeer herders are not the owners, but wage laborers, who can at best have some personal reindeer in the herd.

Public property includes most reindeer, which were earlier owned by collective and state farms. As a result of privatization joint shared enterprises and agricultural producer's co-operatives and sometimes clan communities have been created on the base of

reindeer herding kolkhozes and sovkhoses. Public property is most common. In practice the difference between state and public forms of property are insignificant for the reindeer herders. They have a small number of shares, which have no influence on the results of voting at stockholders meetings. The directors of the public enterprises are often appointed by administrative organs, and not elected.

Private ownership appears in personal reindeer owning, as well as in new forms, like owning of reindeer by farmers' enterprises, clan communities, unions and other private associations. Personal reindeer usually belong to concrete herders working for the reindeer enterprise (or to one of his relatives). Those reindeer are herded within the herds of the enterprise, where the owners work. However, it is now possible for private owners to run their independent economy.

The question concerning the form of ownership in clan communities is complicated. Principally, the commune assumes an association of reindeer, belong-

ing to concrete owners, i.e. private property. However, in the statistics reindeer stock of large communes is usually regarded as public ownership. Moreover, the definition of the state of the clan communities' reindeer to a great extent depends on the local legislation (see text in box).

Pastures of the enterprises, which are created on the base of sovkhozes and kolkhozes, are in their perpetual tenure, but belong to the state. Withdrawal of those lands is possible only by a general meeting resolution or a decision of the board of directors of the enterprise. As a rule, appointed lands are assigned to clan communities, co-operatives, joint-stock companies and farmers' enterprises on the base of long-term rent (sometimes general tenancy) with succession. The usual term is 25-50 years.

Personal reindeer owners (householders) have the most complicated situation in terms of the use of land. They herd their reindeer on the pasturing territories of public and state enterprises, sometimes within the herds of the main land user, sometimes by separate herds. In the case of surplus of reindeer on the terri-

tory the administrative organs, first of all, try to reduce the personal reindeer stock.

There are restrictions on the number of personal reindeer for workers and pensioners in enterprises in some regions, such as Nenets AO, Murmansk Oblast and other regions. A similar resolution is about to be passed in the Yamalo-Nenets AO, where the stock of personal reindeer is the largest in Russia. In a number of regions leaders of state and public enterprises collect payment from personal reindeer owners for herding reindeer on the pastures of these enterprises.

In the statistic material, published by the Ministry of Agriculture of the RF, only three forms of ownership of reindeer are marked: public and state enterprise ownership (together), farmers' ownership and personal property of the population (i.e. households). It is interesting that during the 1990's, despite a considerable reduction in the reindeer stock in most regions, an increase in the percentage of personal and farmers' ownership, i.e. in private property, took place in many districts (see Figure 3).



Evenks from Sovietskie Lakes in Turukhansk District, Russia

Photo © Konstantin Klokov

## The Federal Level of Reindeer Husbandry Management

Reindeer husbandry as a specific branch of agriculture requires a particularized approach to its management. It is impossible to achieve the desired effect of the state management if the reindeer husbandry is approached as a part of cattle breeding, without taking its characteristics into consideration.

At present, the management of the reindeer husbandry as a specific branch of agriculture, on the federal level is carried out by the Ministry of Agriculture of the RF through the Department of Regional Co-ordination (see Figure 7).

The federal state reindeer husbandry management was most effective during the period 1961-1991. It was based on the principles of state protectionism. In that period there was a State Department of the North within the Ministry of Agriculture of the RF. Within its structure there were several departments: on planned-economical and bookkeeping works, on material support and capital construction, on zoovet-

erinarian measures, on technological processing of production, on personnel training.

Unfortunately, the special management structures with a number of high-quality specialists were eradicated in 1991, when the process of transformation of state property to different owners has begun. Today in the Ministry of Agriculture of the RF only 6 persons in the Department of Regional Co-ordination are partly engaged in the management of reindeer husbandry, that is, obviously, not enough. At the same time the state support of the branch was sharply reduced.

The Ministry of Agriculture of the RF together with the Reindeer Herders Union of Russia (RHUR) take a number of measures to enlarge the support of the branch. On their initiative the government regulation "On Additional Measures of State Support of Reindeer Husbandry in 2000-2005" has been passed. But the activity of the Ministry on the support of the northern agricultural industries faces a key problem – lack of budget financing. Thus, the law "On Federal Budget for 2001" has called off lax credits, compensations for 30% of forage costs and Development



Evenks from Sovietskie Lakes in Turukhansk District, Russia

Photo © Konstantin Klokov



Evenks from Sovietskie Lakes in Turukhansk District, Russia

Photo © Konstantin Klokov

Budgets, which were appointed as measures of additional support of the northern reindeer husbandry. The Ministry of Agriculture of the RF considers, that to improve the situation in reindeer husbandry it is necessary promptly to pass a special federal law “On Reindeer Husbandry”.

The Ministry of Agriculture is not the only state organ managing reindeer husbandry issues. These questions form a considerable part of the common Federal purpose program “Economic and Social Development of Indigenous Peoples of the North until 2011”.

The main executors of the Programme has been the Ministry on Federation Issues, National and Migration Politics of the the RF (in autumn of 2001 this Ministry was dismissed), other interested federal organs of executive power, executive authorities of subjects of the RF and local government, associations of indigenous peoples, the Reindeer Herder Union of Russia and other organizations.

The main aims of the program are:

- to support reindeer husbandry and other traditional activities and handicrafts of indigenous population;
- to develop processing of their production;

- to create trading stations to increase trade and barter with indigenous communities;
- to improve local energy supply;
- to develop market infrastructure, social infrastructure, system of health protection and human services. Intellectual and national culture development and perfection of educational system in the Far North are also included in the Program.

## Regional level of Reindeer Husbandry Management

On the regional level the reindeer management is executed by the Departments of Agriculture of regional Administrations, in the republics by Ministries of Agriculture. In the regions with districts or other administrative division there are additional management units, such as Departments of Agriculture in Administrations of the districts. Regional and district administrations have a staff of specialists in reindeer husbandry, veterinarian service and, ideally, financial and legal consultants. Unfortunately, in most of the regions agricultural administrations are understaffed with specialists on reindeer husbandry.

*A characteristic of the organisation of small clan communities in southern Yakutia is the private ownership of reindeer among the members of community, that are kept in the common herd. Each reindeer has the label of its owner. However, it may be used for transport purposes also by other members of the community. The reindeer of each owner are considered as his share in the common clan community ownership. At the same time, in official documents for the Statistic Board all these reindeer are considered the property of the clan community. It gives the herders a possibility to receive state support. Thus, small clan communities in southern Yakutia operate as co-operative societies. Their members do not receive wages from the incomes of the communities (by the exception of state grants). Quite often members of clan communities simultaneously are workers of the sovkhoses or other state enterprise. As workers of the sovkhose they may be included into reindeer herders brigades. They may keep reindeer of the sovkhose and reindeer of the clan community in one common herd. This situation became possible because the small clan communities were formed under the initiative of the Association of Indigenous Peoples of the North even before the reorganisation of the sovkhoses. As an opposite, in northern Yakutia the clan communities were mostly created from the state farms, and in many cases it was only “the changes of a signboard”. This is the reason, why small clan communities in southern Yakutia, which have been organised like co-operative societies are more viable and more active than larger communities, organised like sovkhoses.*

Administrations draw up instructions and recommendations, long-term plans of development of reindeer husbandry, coordinate activity of reindeer enterprises, settle questions on distribution of budget means (local and federal), etc. They usually hold annual conferences of the leaders of the reindeer enterprises for working out strategies for the development of the branch, experience exchanging and dealing and other issues.

The other important items of the reindeer management in regions are Committees of Land-use and Land Resources which are responsible for the use of reindeer pastures (see Figure 7). They set the lines of land tenures and, moreover, until recently they were responsible for the organization of pastural territories within reindeer enterprises. This concerned, first of all, large enterprises, with several reindeer herds. Their territories have been divided into brigade pasture lots, which in turn have been divided into seasonal plots according to forage capacity of the pastures. All pastures have been mapped and their carrying capacity have been calculated on the base of special botanical aerial surveys.

The structure, described above, is an ideal for the state management of the reindeer enterprises on the regional level. However, it is not convenient for the management of private reindeer husbandry under modern conditions.

For example, in the Yamal-Nenets Autonomous Okrug the Department of Agriculture is responsible for the reindeer husbandry management for the Administration of the Okrug. The State Committee of Land-Use and Land Resources is responsible for the use of reindeer pastures. Both the Department and the Committee deal directly (without mediation of the Districts' Administrations) with managers of public and state enterprises but they do not deal with owners of private reindeer. This means that only 12 large enterprises (erlier sovkhozes) with 153.000 reindeer (33 % of the total number of reindeer) are under the operative control of the Yamal-Nenets Autonomous Okrug Administration. The lack of means to control private reindeer husbandry became a major problem for the Yamal-Nenets Autonomous Okrug Administration. This has resulted in some hostility towards the private herders and conflicts between them and large enterprises.

The above-mentioned structure of regional management is mainly characteristic for the regions of the tundra type of reindeer husbandry. In the taiga zone, where reindeer herding has an auxiliary function, it is

often of little interests for the agricultural administrations. In this case the committees or departments for indigenous peoples' issues take up reindeer management. Unfortunately, as the experience shows, an unprofessional approach has resulted in the loss of administrative control on reindeer husbandry in these cases.

In some regions, for example in the Sakha (Yakutia) Republic, the management system of reindeer husbandry has specific features. There are two basic types of enterprises owning reindeer in this Republic: the clan communities and the state enterprises. The clan communities are the main successors to the broken up sovkhozes. However, until now many reindeer enterprises have kept the state form of ownership: "state unitary enterprises" and "municipal unitary enterprises".

Nearly all the state enterprises are under the jurisdiction of the Ministry of Agriculture of the Sakha (Yakutia) Republic. But, in contrast to the Departments of Agriculture in Administrations of other regions in the Russian North (for example the Yamal-Nenets AO), the Ministry of Agriculture of the Sakha Republic does not work directly with enterprises. According to the concept of management of reindeer husbandry (as well as other branches of agriculture in the Sakha Republic), the Ministry only creates conditions for economic development, but does not participate in the decisions making. The administrative task of the Ministry is to develop state mechanisms that support and stimulate the reindeer husbandry. Enterprises are not subordinate to the Ministry and the Ministry has not divisions in uluses (districts in the Sakha Republic), i.e. the administrative vertical structure is absent. Although the Ministry communicates with enterprises only through the administrations of the uluses, the departments of agriculture in the administrations of the uluses are not subordinated to the Ministry.

However, this variety in management of reindeer husbandry in different regions does not exclude, but rather confirms the proposal on improvement of regional reindeer husbandry management, prepared by Dr. Syrovatsky (2000), concerning working out universal standards of organizational and zooveterinarian measures for the enterprises with different types of ownership and the same type of reindeer husbandry. These standards should provide for and regulate: methods of formation of herds and brigades, material support, order of use of pastures, terms and methods of veterinarian works and zootechnical

actions, herding and guarding organization, standards for storing, transporting, processing and realization of production.

## The Local Level: Management of Reindeer Enterprises

In a historical perspective the traditional use of resource of the northern peoples was an economic activity of small permanent or temporary labour collectives (20-100 persons) mostly for own consumption, but using the surplus for barter and sale (Pika, Prokhorov, 1994).

Now, the main form of such collectives is the reindeer herding brigade. Each enterprise has as many brigades as reindeer herds. The brigade completes the whole annual work cycle connected to one herd. It has a lot of pasture land, buildings, hardware and other inventory assigned to the brigade by the enterprise.

Very often the brigades consist of close relatives or embraces several related families. Usually zooveterinarian specialists, mechanics and representatives of the administration of the enterprise come to the brigade several times a year according to a management plan and a plan of zooveterinarian works.

Some specialization and division of labour is common within the brigade, while easy co-operation is kept in general. At the present time it is possible to mark the following herders' specialties: accounting clerk, mechanic, radio operator, veterinarian. The division of labour takes place in herding as well as in seasonal displacement and moving to the next pasture lots. It takes into consideration the physical condition and experience of concrete herders.

Besides, there is an inter-brigade specialization within an enterprise. In large enterprises there are specialized brigades to keep different types of herds: meat productive, breeding, soft antlers, fattening, etc. (Podkorytov, 1995; Syrovatsky, 2000, etc.). Sometimes a special brigade can be formed to drive the reindeer herd to other district for sale.

Concerning the administration, the brigade includes herders, one of which is a leader with common duties of the herder – brigadier, and chum-workers (women), who get wages for taking care of common needs (cooking, repairing cloths, storing firewood, maintaining the chum, etc.). The leader of the enterprise together with the brigadier forms a brigade for working with a common herd. It is very important to have the necessary staff in the brigade; this lightens

the work with the animals. The leading body of the enterprise defines the operating schedule, but usually the brigadier corrects it, starting from the needs of the brigade. The brigadier appoints chief herders, based upon experiences and special skills of the brigade members. They are responsible for the execution of duty functions and concrete organization-economic works. Young members of the brigade usually work as herder's learners. In the pre-reformations period the number of chum-workers in the enterprise was usually based on the norm of one worker per 2-3 reindeer herders. This resulted in the fact, that there were several women per one position of chum-worker, when several families were herding common herds (hidden unemployment). At the present time the common enterprises can determine the status of women in the brigade independently, as well as their payment.

The management control of the work of the reindeer herding brigades in the enterprise is executed from the head of the enterprise to the brigadiers of the reindeer herding brigades through senior specialists (chief zootechnician and veterinarian), radio dispatchers and specialists, assigned to the brigades. The functional management is executed mainly by senior specialists through (sometimes by-passing) a radio dispatcher and assigned specialists. This approach enables the brigade to coordinate the organization-economic plans with a head and specialists of the enterprise, assigned to the brigade, while at the same time acting as an independent unit.

The leader (director, chairman of the board) of present-day reindeer enterprises manages its activity on the base of undivided authority according to a working plan for the current calendar year, approved in the enterprise and coordinated with a head of the local Administration. A basic point in the work of the leader of the reindeer enterprise is a presence of stable communication with subordinated brigades, neighboring enterprises, other land-users and higher organizations. This allows making necessary resolutions in the case of emergency situations, and coordinating them with the other interested organizations. The undivided authority of the leader in the sphere of management control is limited by the board of the enterprise, which joint resolution sets the terms and order of zootechnical, organizational and veterinarian actions, prepares proposals for structural changes of the enterprise, directions for development, etc.

In the collective property enterprises a general meeting of owners (stockholders, shareholders) is a very important management element. Key ques-

*In different regions the number of herders in one brigade can vary from 4 to 10 men, and the average number of herders in brigade is 8 persons. As a rule the number of herders does not depend on the number of reindeer in the herd. The question about the number of herders, necessary for herding one herd, has always been debatable. Most of the agricultural managers approach this problem from the common positions in cattle breeding: more animals – more herders. Usually the duty standards have been set to 200-300 animals per reindeer herder, and hence the number of reindeer herders for a herd is set. However, such an approach can not be accepted as correct (Syrovatsky, 2000). In reality the amount of work of the herders' brigade is the same, regardless of the number of animals in the herd. One herder's duty lasts for 12 hours and from 1 to 3 men should constantly stay with the herd depending on weather, season and type of pasture. Thus, only herding requires about 14,500 work-hours. Except for these duties, the herders should carry out a number of other jobs. These works differ a little bit, depending on the size of the herd, but in general they require about 4 thousand work-hours a year. Thus, the total amount of working time of one reindeer-herding brigade is about 17,000 work-hours. According to the Labour Code of the Russian Federation, the amount of working time for one person should not be more than 1876 hours a year. Thus a reindeer herders' brigade should include 9 reindeer herders ( $16873:1876=$  approximately 9).*



Nenets from the Enysei River in Western Part of Taimyr Autonomuos Okrug, Russia  
Photo © Konstantin Klokov

**S**upport of reindeer husbandry in Sakha and Chukotka  
*In the Sakha Republic the state support embraces all enterprises, but not individual owners. Nominally if someone becomes owner of private enterprise (farm) possessing reindeer and register as a legal person he will also receive the state support. Funds to support reindeer husbandry are allocated form a special item in the Republic budget and transferred to the Finance Departments in the Administrations of the Uluses. To receive money the head of a reindeer enterprise (director of state or municipal unitary enterprise, head of clan community farm, chairman of co-operative, etc.) should present the data on the number of reindeer and calves to Statistics and to Agriculture Departments of the ulus Administration, which transfer the information to the Ministry of Agriculture of the Sakha Republic. On the basis of these data, the Finance Department of the ulus Administration transfers funds to the account of the enterprise. According to clause 13 of the Laws of the Sakha Republic "On the State Budget of Sakha (Yakutia) Republic for 2001" and the special Order of Government of the Sakha Republic (2001) funds of 53,140,000 roubles (about 1,700,000 USD) were allocated for payment of guaranteed wages to reindeer herders and 10,000,000 roubles (about 300,000 USD) – as grants for born and survived calves. Besides the direct grants, financing support of reindeer husbandry has been included in several other budget items: protection of reindeer pastures, shooting of wolves, development of the basic agricultural enterprises (section "reindeer enterprises"), insurance of agricultural funds (section "reindeer"), aerial surveying of the number of wild reindeer, and reimbursement of hunting licenses for wild reindeer and sable to local people (mostly to reindeer herders). In the Chukotka Autonomous Okrug, where the reduction of the reindeer stock has been especially sharp, according to the Decision of the Governor (2000), all herders (men) received grants of 500 roubles per month and "chum-workers" (women) - of 1000 roubles per month during all the time they worked on the tundra. But it has not produced any positive effects. To improve the situation the new Governor of Chukotka in 2001 introduced new grants at the rate of 550 roubles per reindeer a year. Now the herders receive in average 4,000-5,000 roubles (about 150 USD) every month . Thus, the level of income of the herders has been multiply nearly by ten due to the support from regional budget. Hopefully this should produce positive changes in the reindeer economy of the Chukotka in the nearest future.*

tions of financial politics of the enterprise and main directions of its activity, elections of the head and the board, recruiting of specialists, approval of administration report for the last economic year are in the competence of the general meeting. Unfortunately, in most of the post-socialist enterprises workers-owners do not quite understand the role and importance of this superior managerial body of the enterprise.

### Forms of state and regional support of the reindeer husbandry

The reindeer enterprises are situated in the North of Russia, at a considerable distance from the main markets and industrial centres, producing material and technical resources. In addition, the communications in the Far North are underdeveloped and transport is much more expensive than in other regions. These

conditions are the base reasons for the state support of the northern agricultural enterprises, that is determined by the Law “On the Basis of Governmental Regulations of Social-economic Development of the North of the Russian Federation” (1996) and governmental decrees “On Additional Measures of State Support of Reindeer Husbandry in 2000-2005” and “On the Federal Purpose Program «Economic and Social Development of Indigenous Peoples of the North until 2011»”.

Today, the main type of state support, that is received by reindeer enterprises, is direct grants for all kinds of meat and other agricultural products. This grant is paid from regional budgets to all meat producers (including reindeer enterprises and, in a number of regions, also private reindeer owners). The regions’ administrations annually fix the rates of subsidy for 1 kg of meat production. The biggest subsidies have been paid in Chukotka, Yamal-Nenets, and Khanty-Mansi Autonomous Okrugs.

Besides, since 2000 special financial means from the federal budget are assigned for the direct support of reindeer husbandry. In 2001 the reindeer

enterprises received federal support at the rate of 110 roubles per reindeer.

In some regions the local budgets also appropriate special direct grants to reindeer enterprises. For example, in the Tyva Republic grants at the rate of 450 roubles per reindeer is provided in addition to 110 roubles of the federal grant. In several regions the administrations give special grants to enterprises lacking reindeer and private reindeer owners for purchase of live reindeer.

A few regions has more developed mechanism of reindeer husbandry support (see text in box).

In all northern regions, besides the direct grants, recovering of the transport costs should become a very important element of the state support. The transport component in the prime price of the reindeer husbandry production amounts to 60 %. The Ministry of Agriculture of Russia has proposed to assign 322 million roubles as transport compensations for agricultural enterprises of the Far North from additional budget sources. Such compensations are already made now in a number of regions. For example, in the Nenets AO 80 % of the transport costs for delivery of



Nenets from the Enysei River in Western Part of Taimyr Autonomous Okrug, Russia

Photo © Konstantin Klokov

production of reindeer enterprises to Narjan-Mar are recovered.

It should also be noted, that the state granting of the social sphere of the reindeer husbandry seems very important now.

## State capital investments in reindeer husbandry

During the last four years due to a default in 1998 a sharp decrease in the capital investments into the agriculture in the North and the reindeer husbandry in particular, took place. During three years no slaughter houses were built (Materials of the Ministry of Agriculture of RF to Parliament hearings, 2001).

In the present situation, the reindeer husbandry can not in practice obtain commercial credits. That is why it is very important to assign state means for the development of capital for construction in reindeer husbandry. Now, the main capital investments into the branch are specified by the Federal purpose program "Economic and Social Development of Indigenous Peoples of the North until 2010".

Besides, regional authorities create their own programs of reindeer husbandry development. They aim to get reindeer enterprises profitable, to develop domestic markets, to start new technologies and to produce new kinds of products from reindeer. Usually such programs propose to use not only regional budget means, but, first of all, to obtain long-term credits from exterior organizations and off-budget funds.

## The Reindeer Herders Union of Russia

The Reindeer Herders Union of Russia (RHUR) was established in 1995 according to the federal law "On non-commercial organizations". It includes more than 220 physical and juridical persons from all reindeer regions of the Russian North. Units of reindeer associations from the republics of Komi, Sakha (Yakutia), Tyva, Chukotka, Yamal-Nenets, Khanty-Mansi, Nenets, Evenks A.O., social-political organizations – Association of Indigenous Small-number Peoples of the Russian North, Siberia and Far West, foundations of support for indigenous peoples of the Russian North and their traditional activity are also members of the RHUR.

The leading organ of the RHUR according to its Regulations is the Congress of Reindeer Herders of Russia; between Congresses – the Government and the Executive Direction of the Union. There is also a Scientific-coordinating Council. The RHUR does not have any constant financing resources except small membership fees for office expenses. This fact prevents the Union from working more efficiently.

The Executive Direction works with the Government of the RF, the Parliament of the RF, the Russian Academy of Sciences and the Russian Academy of Agricultural Sciences, and other institutions. There is visible development in the cooperation between the RHUR and the regional northern administrations, their departments of agriculture and with the NGOs of the indigenous peoples of the North.

The Reindeer Herders Union of Russia is a member of the association of World Reindeer Herders. Business relations between the RHUR's Government and Direction and the associations and organizations of reindeer herders from Norway, Finland, Sweden, and Canada usually solve practical tasks. For example, educational institutions of Russia and Finland have concluded the agreements on education and training of reindeer herders and specialists in reindeer breeding, and to work out co-educational programs, hold yearly educating seminars in Kautokeino (Norway), Inary (Finland), Murmansk and Moscow (Russia). The next seminar will take place in Khanty-Mansiysk (Russia).

Together with the Institute of the Problems of Small-numbered Indigenous Peoples of the Russian North (Russian Ac. Sci, Siberian Dep.) and the "Rosniizemproect" the RHUR has made an alternative variant of an important governmental project – the state program of "Stabilization and Future Development of Reindeer Husbandry up to 2010". It has principally different aim. It suggests that the means of federal budget should be spent not only on creating productive objects, but also on recreating the number of reindeer and provide what is necessary to help the reindeer herder recreate dispersed households, prepare new reindeer breeding personnel and preserve the traditional way of life. This is a real opportunity to face the crisis in Russian reindeer husbandry. It is expedient to create enterprises for reindeer slaughtering and reindeer meat processing in the districts where the reindeer stock is not strongly reducing.

The reworking program was supported by the organizations of the indigenous peoples of the North-

ern regions and became a basic methodical manual for the working out and supporting programs of reindeer husbandry development and is carried out now by the administrations of all major reindeer regions in Russia.

The RHUR also proposed to work out a “Scheme of Land-use in the Regions of the Far North” to direct reindeer pastures and hunting territories which was carried out by the “Rosniizemproect” in 2000-2001.

The Russian Federation is the only Arctic State that has not regulated the relationships with indigenous peoples in the sphere of natural resources use and nature protection. So the second Congress of RHUR asked the president of the RF V. V. Putin to support the working out of the law acts package on the problems of the northern indigenous peoples.

The Reindeer Herders Union of Russia looks forward to international support of governmental and non-governmental organizations, such as the Arctic Council, the Northern Forum, and the Barents-Region. The Russian North is in a crisis. It needs not only financial support, but also to gain experience of stable reindeer husbandry that takes place in the Scandinavian countries.

## Economy of Reindeer Husbandry

### Main types of reindeer enterprises

There are two main types of reindeer enterprises in Russia: one has reindeer husbandry as a main activity, in the other reindeer husbandry has an auxiliary function. The first one is situated mainly on the tundra, and the second mainly in the taiga.

#### *Enterprises where reindeer husbandry is a main activity*

The reindeer husbandry production is a basic activity for most of the joint enterprises, clan communities, close corporations, co-operatives and private enterprises on the pasture areas on the tundra, the forest-tundra and, partly, in the mountainous-taiga. All those enterprises appeared from former kolkhozes and sovkhoses, which were created in the territories of northern peoples in 1930's-1950's.

It is typical for those enterprises that the number of reindeer tends to a maximum from the point of

view of the pastures' carrying capacity or the number of workers. Usually reindeer are divided into several herds. A group of workers takes care of each herd. Single reindeer herds are characterized by a comparatively constant sex-age structure, which reflects the main direction of activity of the enterprise or specialization of the concrete herd. Nowadays the main directions could be meat production or soft antlers production. Furthermore, the following products could be included in the list of main products of the enterprises: reindeer skins for overall tailoring and chum covers, skins for chamois, dried or conserved blood, and endocrine glands used for medication.

#### *Enterprises where reindeer herding has auxiliary importance*

In the Siberian taiga there are many enterprises, where reindeer herding acted as an auxiliary service (foremost as transport). They are state, or public, or personal businesses of hunters and fishermen in the taiga reindeer herding area. In general, many scientists notice a principal difference between large herds tundra reindeer husbandry, which could be compared with meat productive cattle-breeding, and small herd reindeer husbandry in the taiga, which is directed towards intensification of the other types of traditional economical activities. The reindeer transportation was quite important until the middle of the 1970's. Then the introduction of mechanical transport means to the northern regions began, and the number of transport reindeer in unspecialized enterprises started to reduce.

At the present the tendency is a small increase in number of reindeer in a number of unspecialized enterprises. This is, first of all, due to high costs of mechanical transport means and complications in the service of private enterprises and communes. Besides, many programs for development of traditional branches in the taiga zone intended to provide additional incomes for communes and private farmers' enterprises from reindeer herds owing to soft antlers and fermentative raw materials.

The situation in the Sakha (Yakutia) Republic illustrates how differently the reindeer enterprises could develop under conditions of economic crises.

The reindeer husbandry in northern and southern Yakutia have changed in different directions. Before the reforms reindeer-herding sovkhoses in northern Yakutia were big enterprises specialised mainly on meat production. They received significant state support and were well-provided with technical facili-

ties. All reindeer herder brigades were equipped with caterpillar cross-country vehicles, snowscooters, radio transmitters, rifles, etc. Helicopters constantly served them. Tractors transported them firewood when they migrate on the tundra. In a number of sovkhoses fattening of reindeer before slaughtering, using mixed fodder, mineral and salt was carried out. Great attention was paid on the breeding work and veterinarian services. All these activities stopped or were sharply reduced after the reforms. As a result the efficiency of production fell dramatically. Herders lost interest in their work, losses of reindeer increased and income of enterprises reduced to zero (by the exception of state grants). All reindeer enterprises of northern Yakutia were also involved in fishing and hunting. Under the present conditions reindeer husbandry became the most unprofitable among these three branches of economy. Because of that, a significant part of the herders concentrated on fishing and hunting which gave more income and more food. This is particularly important for the regions where there are a lot of wild

reindeer, i.e. for the most part of the area of reindeer husbandry in the North of Yakutia.

Under the Soviet period reindeer husbandry in the South of Yakutia was not as well developed as in the northern part. Reindeer were used mostly as riding animals. Now, reindeer husbandry in southern Yakutia carries out two very important functions for indigenous population. First, it provides owners of reindeer with transport during the winter hunting for sable. The sell of sable skins provide the basic money income. Most hunters of the indigenous population (Evenks and partially Yakuts) hunt sable with guns (traps are used only when the hunter watches the sable if it has hidden in a refuge). This method of hunting requires mobility, it is not possible without riding reindeer. Due to reindeer transport Evenks hunt in mountainous landscapes and escape the competition with Russian hunters, who occupy valleys of rivers, where they can use traps and snowscooters. In the 1980's Evenks also sometimes used snowscooters, but now they can not afford it, because the prices on engi-



Turf Storage, Piasina River, Central Taimyr, Russia

Photo © Konstantin Klokov

### **R**eformations of reindeer herding sovkhoses in Chukotka

*The experience from the reorganization of reindeer husbandry sovkhoses in Chukotka is illustrating for the whole eastern part of the Russian North. The reorganization started in 1991 according to the Decree of the President of the Russian Federation "On the reformation of agroindustrial complex of the Russian Federation" and was carried out in three ways. Several sovkhoses of the Okrug were completely divided into private farms (farmers' enterprises). These farms were put in equal economic conditions with other commercial and trade enterprises with all consequences following from it: excessive tax burdens, absence of privileges at purchase of material and financial resources, etc. Both farm managers (who were mostly former employers of the sovkhoses administration) and reindeer herders lacked theoretical and practical skills on the organization of the work in private farms. In several cases people have taken advantage of the situation and property of the farms has been sold out. Some inexperienced chiefs, wishing to reduce charges of the brigades on the tundra, have transported all old people and women into the settlements. Young herders without the advices and the authority of seniors and help of women, could not thoroughly organize the pasturing of their herds. The reindeer herding brigade is an independent productive unit living on the tundra. After being reformed into a private farm it is unable to be engaged simultaneously in production, processing, storage and realization. Especially it lacks the capacity to settle the matters of material and technical supply. All these activities would be possible only if farms were incorporated in an association or cooperative society. However creations of such associations takes a lot of time. As a result almost all farms have lost their reindeer during the first years of their work. In other sovkhoses only part of the brigades was transformed into independent private farms, i.e. their reorganization was not complete. For example, all farms created on the basis of the sovkhos "Konchalansky" were united again into one common enterprise after a few years. This has given positive results and reindeer husbandry there has survived.*

*In several enterprises the opposite strategy "of healthy conservatism" was accepted. Here, according to the Decree of the President, only the formal change of the pattern of ownership was carried out (from the state enterprise into joint-stock company), but the industrial structure is left intact. The structure of brigades was not changed, old skilled herders and women ("shum-workers") continued to work on the tundra. Under the new conditions the administration of the sovkhos has managed to keep intact the most important part of the industrial infrastructure. In spite of economic difficulties and price differences, the brigades of herders are supplied with foodstuffs and equipment whenever possible, and veterinary and zootechnic works are carried out in the herds. Three tundra provision bases continue to supply reindeer herder brigades the hole year around.*

neering and fuel are too high. Thus, the presence of transport reindeer has become for them the necessary condition to make a money income, although reindeer husbandry itself does not yield any profits. This kind of economy requires co-operation in work and stimulates the formation of clan communities. One of the members of the clan community keeps the herd, while others are hunting sable.

The second function of reindeer husbandry in the south is to provide families of reindeer owners (herders and hunters) with reindeer meat. Wild reindeer,

Siberian deer, elk and musk-deer can also be sources of meat. However, the opportunity for good hunting is not present everywhere. In opposite to the northern areas of Yakutia, fish resources in the south are also limited. Thus, actually the necessity to slaughter a lot of reindeer for meat does not allow herders to increase their herds. As a rule, the communities of herders in southern Yakutia are created from several related families. A distinctive feature of the life of the herders we met during fieldwork is the division of most of the families. Practically all year round the men live in the

taiga with the reindeer herds. They arrive in the village very seldom - once or twice during the year for a short period of time. Their wives, children and other relatives live in a village and are engaged in different works. Often they plant kitchen gardens and keep cattle, pig, and goat. Part of the villagers come to the taiga only for the hunting season. It is interesting to note, that formally heads of many clan communities are the wives of reindeer herders, who live in villages and conduct all documentation, while their husbands keep reindeer herds in the taiga.

### The Present state of reindeer enterprises

In most of the so-called agricultural enterprises in the North of the Russian Federation reindeer husbandry is the main kind of economic activity, but not the only

one. Except for reindeer herding, also hunting, fishing, fur farming, sea hunting, gathering of wild plants, breeding of cattle, horses, and pigs, and sometimes plant cultivation are also included into the sphere of activity of a number of enterprises. Most of them were unprofitable (without taking State subsidies into account) already since the 1970's. During the pre-reformation years the enterprises got a profit mainly out of reindeer husbandry.

By the beginning of the economic reforms the agricultural enterprises in the North fell into deep economic crisis. In general, great disparity between the prices of agricultural production and industrial one, remoteness of the centres of material-technical resources' production, increased prices of transportation, and a sharp decline in the rate of State support have caused an considerable recession of production during the 1990's.

Nganasans from the Piasina River in Central Taimyr, Russia  
Photo © Konstantin Klokov



Figure 8: Levels of Intensity of Reindeer Husbandry (by Syrovatsky, 2000)

Induses	Levels of intensity		
	Low intensity	Middle intensity	High intensity
Femal ratio in the whole stock, %	50%	55%	60%
Calf crop per 100 January females	55	65	80
Survival of adult reindeer, %	85	90	98
Average meat production for 1 year, kg per 1 reindeer	5,0	9,2	15,6
Average production of soft antlers for a year, kg per 1000 reindeer	60	92	125

Figure 9: Slaughter of Domesticated Reindeer in Enterprises, Metric Ton of Live Weight

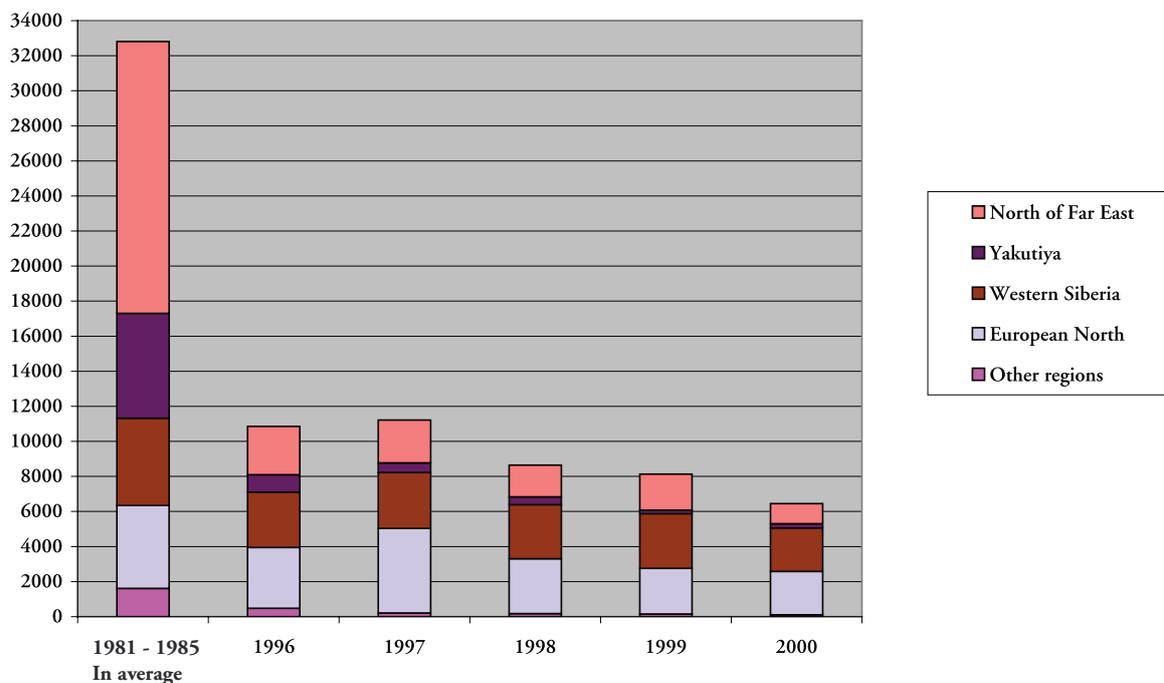
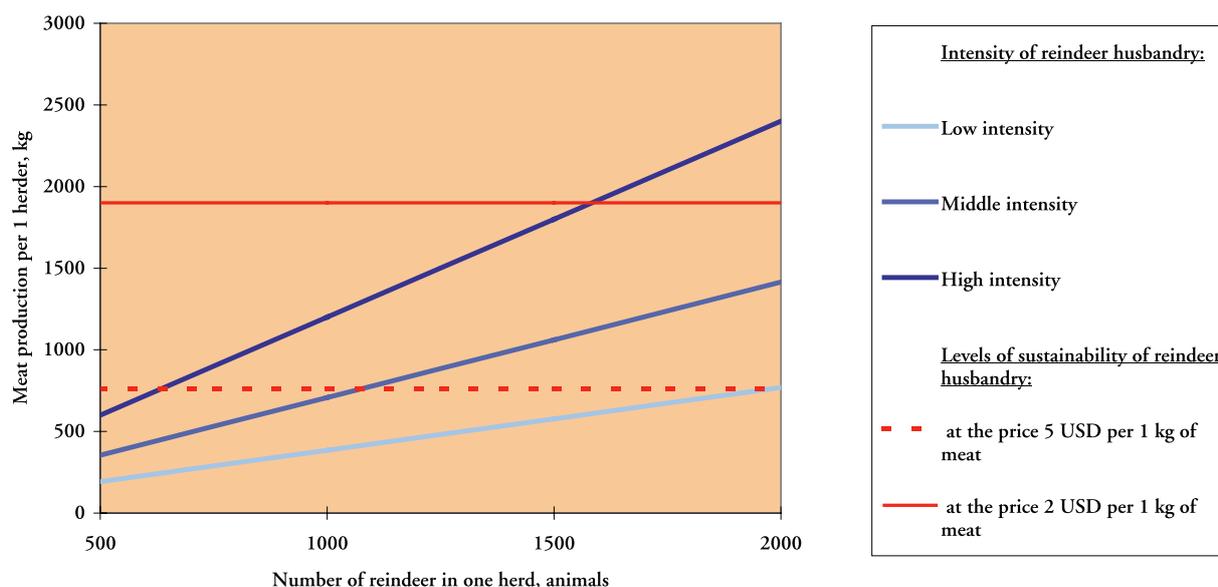


Figure 10: Levels of Sustainability of Reindeer Husbandry



The rates of recession \of agricultural production in the northern regions were higher than in Russia as a whole (Materials of Ministry of Agriculture, 2001). The cattle and poultry livestock has been reduced 3-5 times, meat and milk production – 5 times, area under crop – 2 times. By 2001 the reindeer stock has been reduced about twice. This situation results in a continuous reduction of capital assets of the reindeer enterprises and causes many problems in management.

The reformations of northern sovkhoses and kolkhozes have not improved the situation (see boxed text).

### Economic effectiveness and sustainability of reindeer husbandry

Although the economic state of nearly all reindeer enterprises is far from well-being, the reindeer husbandry in many regions of the Russian North, especially in the European North and Yamal, can still be the main profitable branch of production.

The value of income from reindeer husbandry is dependent upon several factors and conditions.

As it has been noted, the method of close herding of reindeer is most common in Russia, the herd is under round-the-clock control by a herders' brigade. In such a mode of herding the amount of work done

by a brigade varies only slightly with the number of reindeer in the herd. The average, is about 17.000 hours of work a year (Syrovatskyi, 2000). According to the Russian labour regulations, 9 herders are sufficient to do this amount of work. Also, at least 4 women (chum-workers) are needed for permanent service under the nomadic living conditions. Therefore, the total number of full-time jobs in a brigade is 13. In reality, it is with fewer workers in a brigade common, as they perform just the same amount of work by working more hours daily.

Depending on environmental conditions, a 13 member brigade can manage a herd of 500 reindeer in the taiga zone or 2.000 and even more in the tundra. It is obvious that a brigade with 2.000 reindeer, i.e. almost 154 reindeer per worker, could attain much better results and larger incomes than a brigade with 500 reindeer (about 38 reindeer per worker). That is why economic opportunities for the tundra reindeer husbandry are much more favourable than for the taiga reindeer husbandry.

Economic efficiency of reindeer husbandry can be measured:

- by annual quantities of meat and other products obtained from reindeer herd;
- by proceeds of the sale of meat and other products obtained from a given herd.

The annual quantities of meat and other products obtained by a brigade from their herd will depend on both the environment (including pasture and range condition, weather, predators, wild reindeer and so on) and intensity of husbandry (i.e. herders' skill, experience and material/technical supply, etc.).

The following quality indexes are generally used in Russia for assessing the outcome of the reindeer husbandry :

- survival of adult reindeer each year (%);
- calf crop per 100 January females, that is the number of living calves divided by the number of females at the beginning of the current year;
- specific female ratio in the whole stock (%).

These indexes are used to calculate annual quantities of meat and other products that could be obtained from a certain herd. In Table 8 an example of such calculations is given for three levels of reindeer husbandry .

The table shows that the yield of the same reindeer stock can differ three and even more times depending on intensity of husbandry. For example, a herd with 60% females, a 98% survival of adult reindeer, and a calf crop of 80 per 100 January females gives about 15 kg of meat per one reindeer a year and a herd with the respective indexes 48%, 85% and 55 gives only 5 kg.

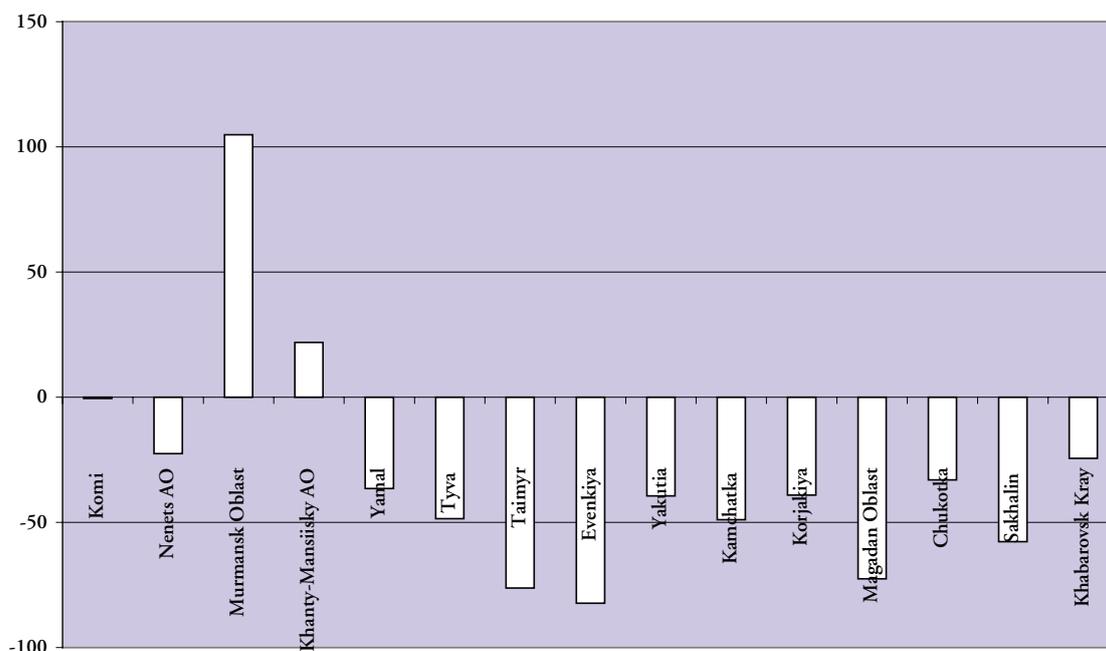
During the last decade the intensity of reindeer herding in all reindeer enterprises of Russia fell dramatically. Even in enterprises of the Yamal-Nenets AO, where the situation of reindeer husbandry was the best, the calf crop per 100 females reduced from 85-88 in the 1980's to 46-59 in 1998-2000. In Chukotka in 2001 the survival of adult reindeer was only 77.5% (in the 1970-1980's – 89%); the calf crop (in respective years) – 52 and 67. As a result, besides a decrease in number of domesticated reindeer, the yield from the same reindeer stock was reduced to a great extent. This has caused a reduction in reindeer meat production in Russia from 25.000 tons in 1990 to 7.400 tons in 2001 (Figure 9).

The income is dependent on the purchase price of meat. In the last few years, reindeer meat was sold in Northern Russia by wholesale price from 1.0 to 3.5 USD a kilo. More frequently the price was about 2.0 USD (50-60 roubles).

Thus, at low husbandry intensity one reindeer will provide a profit of approximately 10 USD a year, and one herder can receive income up to 380 USD in the taiga and up to 1.540 USD on the tundra.

Usually a reindeer enterprise spends about 50% (maximum – 60%) of the total income from meat sales on salaries to the brigade members. An essential part of the proceeds is used to cover other needs of the reindeer husbandry, especially for the transport, taxes

Figure 11: Profitability of Reindeer Meat in Northern Regions, 1996, %



and investments, to cover general farming expenses, as well as the losses in other branches of production, etc.). This means that in enterprises with low intensity the herder's salary even on the tundra can not amount more than 800 USD a year, although according to a calculation made by Russian economists (Syrovatski, 2000) the subsistence minimum of a herder with his family is about 1.900 USD a year.

But if the price is rised (for example 5 USD per 1 kg, which is rather realistic) the herder's income may increase up to approximately 500 USD in the taiga and 2.000 USD on the tundra. This would be enough to get the tundra reindeer husbandry sustainable. In the taiga zone the reindeer husbandry can be sustainable only with a high level of intensity (Figure 10).

Under the current conditions most of the reindeer enterprises are already below sufficiency level. Only a few, more efficient of them manage to remain stable.

The most favorable economic situation is in the Murmansk Oblast', where it is possible to export reindeer meat at a relatively high price (Figure 11). Husbandry intensity there is, however, low, and herders' salaries are not sufficient (see text in box).

However, the profitableness of the reindeer husbandry could be increased considerably by value-adding production, including, besides high quality reindeer meat, other kinds of products: viscera, deer-skins, heads, dried antlers, soft antlers, kamuses, etc. The total cost of these products is about 50% of the meat cost (Syrovatskiy, 2000) and the proceeds might be 1.5 times higher. In such a case, the reindeer husbandry is possible also in the taiga zone even at a mediate level of intensity, which is realistic now.

New technologies for obtaining medicines from reindeer blood and internal secretion glands can provide even higher profit, the value of which is dif-

**E**conomic situation in the co-operative "Tundra" (Lovozero, Murmansk Oblast', 2001)

The basic directions of economic activity of the co-operative "Tundra" are reindeer husbandry (reindeer meat production), production of milk, beef meat, and handicraft (mostly sewing, and making footwear of reindeer skins). The staff of the co-operative includes 340 workers. The enterprise has 25.000 reindeer and 377 cattle. It cultivates 406 ha of grass and fodder cultures to feed the cattle. There are 8 cross-country caterpillar vehicles to communicate with reindeer herders brigades. In opposite to the majority of reindeer enterprises in the Russian North, the "Tundra" receives a profit from the reindeer meat production. The production of milk, beef meat and handicraft have brought losses. Handicraft is not profitable because clothes and boots made of reindeer skins are sold basically to co-operative workers at reduced prices. It is important to note, that the profit from reindeer husbandry was received in spite of the extremely adverse weather conditions in 2000 (9.245 reindeer were lost this year).

The co-operative "Tundra" made such a high profit due to the possibility to sell reindeer meat to "Norfrys" at a relatively high price. The firm "Norfrys" received the certificate of the European Economic Community only last year. Now it buys reindeer meat at the price of 3.4 US dollars per kg and sells it abroad. The price on reindeer meat in the shops in the town of Lovozero (about 2.6 US dollars per kg) are now also to high, for the local market. Restaurants in Moscow and in other large cities are ready to pay for high-quality reindeer meat up to 20-25 US dollars per kg, but their needs are very restricted – not more than 10-15 kg of meat per day. It makes transportation cost to high and unprofitable. In the opinion of the president of the co-operative, the price on reindeer meat should be about 5 dollars per kg to get the husbandry stable.

It is interesting to compare the production of reindeer meat and beef meat by their economic efficiency. In 2000 the "Tundra" sold beef meat at a price 2.7 times lower, than the price of reindeer meat. The production cost of beef meat was twice the cost of reindeer, due to high costs of transportation by cars to places of sale. It would be the same situation with reindeer meat if it is sold on the domestic market, and not to "Norfrys".

difficult to estimate now. But such technologies might be gainful only if a lot of reindeer could be slaughtered. Therefore, such technologies could considerably elevate profitability of large herd reindeer husbandry on the tundra, but they cannot resolve the problems of the taiga reindeer husbandry.

### Economy of reindeer herder's family

Although the main inducers of reindeer husbandry in the enterprises are reflected in state statistics and in the reports of regional departments of agriculture there are few data on the herders' family economy. Scientific research on the herders' families are very seldom. According to a calculation of Dr. Dmitry Syrovatski (2000), a herder needs an income not lower than 5.500 roubles (180 USD) per month to support his family. The nomadic reindeer husbandry is practically impossible without extra work including incidental hunting,

fishing and gathering. Together with social payments (pensions, dependency allowances, social grants, etc.) they can give not more than 20% of the total income. That means that in the zone of the tundra type of reindeer husbandry a herder should receive from his main job about 1.800-1.900 USD a year.

This is a minimum which may be considered the main economic condition of sustainability of the reindeer husbandry. At present a herder's salary (without taking into account state grants) usually is less than 600-800 USD a year, i.e. about 2-3 times lower than the level of sustainability. If average incomes are below the level of 500-600 USD a year, the indigenous population is compelled to return from reindeer husbandry to other forms of economic activity such as subsistence fishery and hunting nearby villages. Many families live already without tea, bread and sugar. In many places the conditions are so critical that all domesticated reindeer have been slaughtered and eaten.

#### **R**emuneration of reindeer herders in the co-operative "Tundra" (Lovozero, Mumansk Oblast')

*Due to the successful realisation of reindeer meat in 2000 the average salary of the "Tundra" workers raised by 34 % (in comparison with 1999), up to 2085 roubles per month. Earnings of the reindeer herders are a little higher than average earnings of the co-operative workers. Their salary is defined by a tariff scale. If a herder works without remarks – he receives a salary threefold the size of the tariff scale. For example, in 2000 the average salary of reindeer herders in one brigade was 3255 roubles (about 110 USD) per month and in another - 2645 roubles (about 90 USD). The average salary of the women ("tchum-worker") was 1822 roubles (about 60 USD) per month. According to established co-operative rules, there may not be more than 2 women in a brigade of 8 herders. If there are three or four, the salary of two "tchum-workers" is divided between three or four persons. The salary of the herders is calculated every month but when they are on the tundra, they can not receive, nor spend money. In April all the brigades receive products and other necessary goods (not alcohol) as advance payment. This advance payment is withdrawn from the herders' salary.*

*Besides salary, each herder receives from the co-operative free-of-charge clothes of reindeer skins and boots. His wife ("tchum-worker") repairs his clothes for additional payment. Each brigade of the co-operative is provided with two snowscooters, a small electric power station, and a supply of gasoline. Besides earnings from the co-operative, the reindeer herders may receive additional incomes, but they are not very important. Staying on the tundra, the herders catch fish, which contributes in their diet and partially may be brought to their families in the settlement. They don't catch fish for selling. Herders can sell their own reindeer to the co-operative, receiving up to 60-62 roubles per kg of meat. "Tchum-workers" can make and sell clothes and footwear from reindeer skins. The co-operative also pays all veterinary works carried out for personal reindeer.*

The worst situation is in the North-eastern regions, where the planned economy was organized most effectively before the reforms. In these areas all domesticated reindeer were concentrated in the sovkhoses, which were large and well supplied with engineering. Many facilities were applied to make the herders' work easier, but simultaneously it lowered their adaptation. For example, the constant use of tractors and cross-country vehicles made training of transport reindeer unnecessary, the construction of fences in the taiga disaccustomed domesticated reindeer to keep by compact groups on pasturing places, etc.

In the North-Western zones salaries for reindeer herders are higher. But even in the most profitable reindeer enterprise in Russia – co-operative “Tundra” in Murmask Oblast’ – incomes of the herders are not high enough to reach the level of sustainability (see text in the box).

In the North-East of Russia, where collapsed reindeer enterprises can not pay salary to the reindeer herders brigades, the herders receive only special payments (grants) from regional budgets, in compliance with the decisions of regional Governments.

For example, in the Sakha (Yakutia) Republic financial support of reindeer husbandry from the

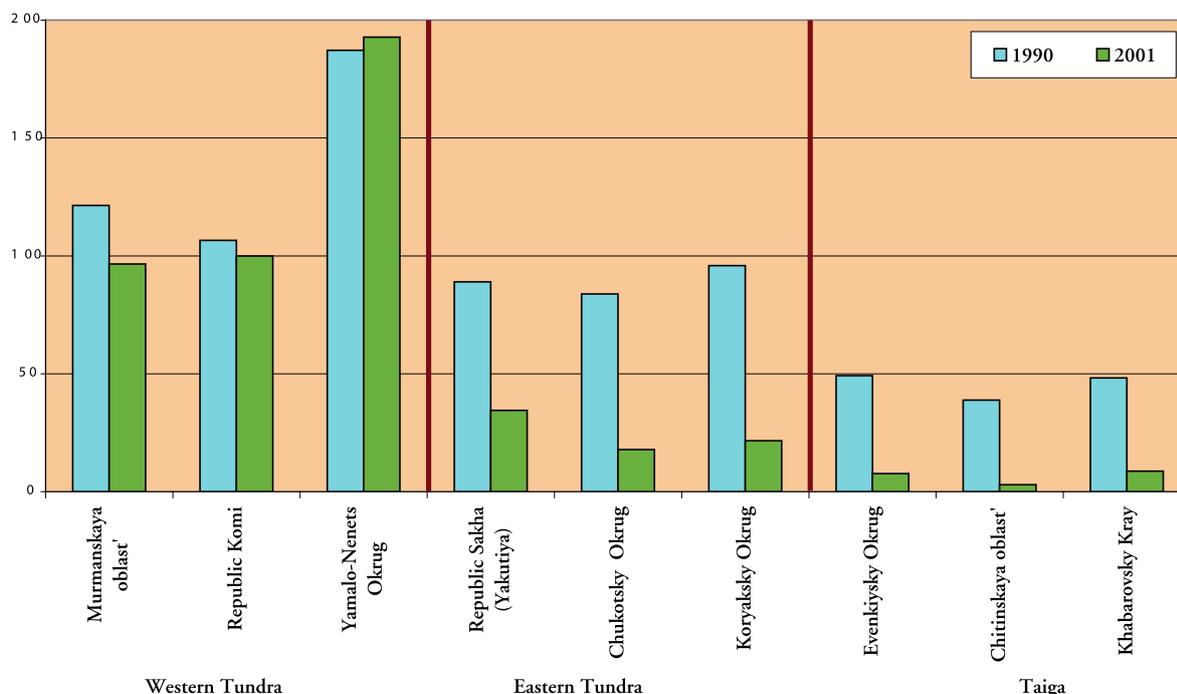
budget of the Republic has been made on the basis of the Law “On Reindeer Husbandry” (1997) and the Decision of the Government of the Sakha Republic “On payment of Work of Tchum-workers” (1998).

All forms of ownership have the right to receive this support by the exception of householders (owners of personal reindeer). The average size of the grant amounts to approximately 1 USD for each reindeer per month.

Other state grants stimulate the increase of reindeer female productiveness. Each enterprise receives about 10 USD per calf that survived until the end of the year. If the number of calves exceeded the average amount of calves in this particular uluse during last two years, the enterprise receives double payment for each additional head.

Householders, who do not work for reindeer enterprises, should have enough reindeer stock to support their families. Specialists from the Department of Agriculture of the Yamal-Nenets AO have calculated how many personal reindeer are necessary for life support of one nomadic family on the Yamal Tundra. According to this calculation a herder without family needs about 90 animals, herders with a family of 5 persons - about 385, and with a family of 8 per-

Figure 12: Trends in the Utilization of Pasture Resources in Different Zones of Reindeer Husbandry



sons - about 540. The calculation takes into account the requirements of the family for transport reindeer, meat and skin for consumption, and some reindeer for barter of basic essentials (like tea, sugar, bread, etc., with total cost about 1 USD for one person per day), but not for investment, snowscooters or the possibility to buy something for the family house in the settlement. Herders working for sovkhoses in the Yamal-Nenets AO receive a salary of about 2500 roubles (86 USD) per month.

## External Conditions

### Reindeer pastures

The total area of reindeer pasture in Russia is about 3.303.388 km<sup>2</sup> (19% of Russia). According to data from special land assessment surveys its carrying capacity is about 2.400.000 heads of domesticated

reindeer. About 20% of the pasture areas are situated in the taiga zones, only 7% of the domesticated reindeer are located.

There is 2.672.513 km<sup>2</sup> of pastures with a carrying capacity of 1.860.000 heads within the territory of large herd reindeer husbandry, including the tundra, forest-tundra zones and the mountain taiga/tundra landscapes. About 15-20% of these pastures (mostly in Taimyr, Yakutia and Chukotka) are occupied by wild reindeer.

In the rest of the pastures in 1990 there were about 1.950.000 domesticated reindeer and in many regions pastures were overgrazed. The total carrying capacity of pastures in Russia were used 94%. After the number of domesticated reindeer in Russia decreased twice, the situation has changed: only half of the pasture resources are now in use. The degree of utilization of forage resources in the three main zones of reindeer husbandry differs strongly.

In the North-Western zone the situation is tense. In the European North the forage resources are used

### *The pasture problem in Yamal-Nenets AO*

*Lack of pastures is one of the biggest challenges for reindeer husbandry in Yamal-Nenets Autonomous Okrug. All the specialists we interviewed named it as one of the three main problems. In two main districts of reindeer husbandry (Yamal and Taz Districts) there is important lack of pastures. These two tundra districts hold more than 70% of the number of reindeer, but only 35% of the grazing capacity of Yamal-Nenets Autonomous Okrug. According to data from the Okrug's Administration the actual number of reindeer in the Yamal District is 87% higher than the grazing capacity, and in Taz District - 31%.*

*The reserves of pastures in other districts, situated mostly in the forest-tundra and the northern taiga (Nadym, Pur Districts, etc.), can not be used to improve the situation in the tundra districts. To move herds from the tundra to the forest tundra is impossible due to the ethnic traditions. The routs of the Nenets are related with the adaptation of the Nenets reindeer herding to the pasturing in the northern tundra during the summer.*

*In year 2000 Yamal-Nenets Okrug produced 30.266.000 tons of oil and 521.000 millions m<sup>3</sup> of gas. During the last decades the destruction of reindeer pastures caused by the development of oil and gas extraction happened mostly in the Nadym and Pur Districts where the grazing capacity is higher than the number of reindeer. This is the reason, that despite the huge area of damaged pastures, the number of reindeer in the Yamal-Nenets Autonomous Okrug was not reduced. This fact may seem rather strange, if one doesn't take into account the concrete distribution of domestic reindeer in the different pasture areas.*

*During the next years the development of oil extraction in the Yamal peninsula becomes very probable. It will be connected with the construction of a new railway that will cross the most important grazing areas. This may lead to disastrous effects on the most important district of reindeer husbandry in the Yamal-Nenets Autonomous Okrug.*

*The lack of pastures is the background for the conflict between administration of the sovkhoses and the private reindeer herders. That was resumed in the special Decree of the Governor of the Yamal-Nenets Autonomous Okrug (2000), which introduced limits of number of reindeer for private owners. This limit gives them the possibility of surviving but prevent business opportunities to develop their reindeer husbandry further. At the same time the Decree does not practically impose any restrictions upon the sovkhose reindeer herding.*

from 75% (in the Nenets AO) to 100% (in the Komi Republic) - see Figure 12. In the European North during the last decade the intensity of resources use has slightly decreased. As an opposite, in the Yamal-Nenets AO during the last decade the extent of overgrazing augmented and a lot of pastures is overgrazed (see boxed text). In addition the pastures in the North-Western zone are exposed to escalating industrial impacts due to the development of oil and gas extraction in the Yamal-Nenets and the Nenets AO.

In the North-Eastern zone in the 1980-1990's the pastures were used up to 80-90%, but today they are only used on 20-30%. Large pasture areas are now out of use and their forage capacity is restoring. A lot of pastures, that were no longer used for reindeer husbandry, have been occupied by wild reindeer.

In the North-East the greatest defragmentations of top-soil and vegetation were connected with mining operations (especially gold, tin, and other non-ferrous metals' ore extraction) and with the use of caterpillar transport. But many gold-mining enterprises, towns, and settlements winded up during the last decade. E.g. in Chukotka in the years of intensive industrial development more than 200 settlements and other built-up areas, camps, factories, mines, pits, etc. were constructed and then liquidated. Thus, defragmentation of reindeer pastures has been reduced the latest years.

In the taiga zone the reindeer pastures were used by 30-50% in the 1980-1990's. Now, most of them are vacant and less than 10% of the forage resources are utilised. The problem of pasture conservation is an issue only in places where reindeer are pasturing in enclosures.

## Predators and poachers

According to official data from the Department of Hunting and Game, the Russian Ministry of Agriculture, there are approximately 23.000 wolves, 50.000 brown bears, 21.000 wolverines, and 6.000 lynxes in the reindeer husbandry area within the Russia. According to additional information received from zoologists these figures are underestimated at least in several big regions of Russia. For example, zoologists assume that in the Sakha Republic the number of wolves is 2-3 times higher than the official data from the Russian Ministry of Agriculture. Now, the number of predators (especially of the wolf) is noticeably higher than in the 1980's.

There is no official statistic data about the number of domesticated reindeer taken by predators all over the Russian Federation. According to data received from the regions, predators kill about 5-10% of the total reindeer livestock every year; which makes about 15-25% of the total unproductive losses of domesticated reindeer. Thus, the total number of reindeer taken by predators in Russia can be estimated to about 50-100,000 heads every year. In comparison the number of slaughtered reindeer is about 160.000-180.000. Wolves take the most. Losses from bears, wolverines and lynxes are less important. Lynxes take only a few animals during the winter, when the reindeer are pasturing in the forests.

- Before the reforms the state departments of game and hunting in all northern regions controlled the number of wolves. They had special budgets to rent helicopters for shooting wolves. Now, only in the Sakha Republic are there several special hunting brigades to fight against wolves. Besides, everybody, who kills a wolf, receives a special prize (up to about 100 USD).

The "predators problem" in the reindeer husbandry has been aggravated by the new system of control on



Food Storage, Belaya River, Central Chukotka, Russia  
Photo © Konstantin Klokov



Chukchi Woman preparing Reindeer Fur, Basin of Blaya River in Central Chukotka, Russia

Photo © Konstantin Klokov

rifled arms prescribed by the police. Usually, if herders have rifles and snowscooters, they can defend the herds from predators themselves. But now they are practically unable to receive permissions because of too complicated bureaucratic procedures. In addition they do not have enough snowscooters, fuel and cartridges. Only in the Sakha Republic the system of arm control has been simplified for reindeer herders and they can use rifles against predators without breaking the law.

Poaching is a serious problem in several regions, e.g. in the oil and gas extraction areas in Western Siberia, in the northern part of the Kola Peninsula, and others. Due to the economic crisis, the military divisions of Murmansk Oblast' received an informal sanction to shoot domesticated reindeer for meal in

case of necessity. Now, this fact makes the struggle against the poachers especially complicated. Neither herders themselves, nor reindeer enterprises have any effective means to withstand them. It is difficult to estimate the amount of reindeer shot by poachers. In official reports they are included in the total number of lost animals. Some years ago there were situations where domesticated reindeer were shot even in spite of the presence of herders.

### Wild Reindeer

Russia has always been a leading country in domesticated and wild reindeer populations. At present (in 2000) Russia has two thirds of the world's population

of domesticated reindeer (1.357.700 animals) and about 1.246.000 wild reindeer. In Russia, reindeer husbandry has always been a base for the traditional way of life of most of the indigenous peoples of the North. In the same time hunting wild reindeer also plays an important role in the life of more than 10 indigenous peoples of the North.

To maintain a sustainable reindeer husbandry, it is necessary to be aware of the interrelations between domesticated and wild reindeer. In the 20th century, the co-existence of wild and domesticated reindeer has been problematic in Russia.

Within the last decade, the population size of both wild and domesticated reindeer have undergone significant changes. The reindeer husbandry has receded significantly, while the number of wild reindeer has increased.

To analyse the problem, it has to be taken into account that domesticated reindeer cannot be considered totally "domestic" animals. It is a slightly domesticated form of the same biological species as *Rangifer tarandus*. In reindeer herding, only wild growing biological resources of pastures are used, there are no special zootechnical modes of feeding, no artificial mixed fodders created specially for reindeer, no particular modes of treatment, etc.

The wild and domesticated reindeer, as ecological antagonists, constantly contradict each other. The nature of these contradictions are discussed in a considerable amount of scientific literature, numbering over fifty books (Mikhel', 1938, Sdobnikov 1933, 1939, Druri, 1949, Geller, 1969, Syroechkovsky, 1986, Syroechkovskii 1995).

The goal in this report is oriented mostly towards an analyse the of possible negative influence of wild reindeer on domesticated ones. This negative influence, according to the general opinion, consists in the following:

- The magnitude of the danger of leading away domesticated reindeer by wild animals.
- The negative effect of wild reindeer on the pastures of domesticated reindeer and feeding competition of domesticated and wild reindeer on pastures.
- The importance of wild reindeer as carrier and transmitter of diseases to domesticated reindeer.

The firsts two are the most serious. To describe these conflicts, it is necessary to make a more detailed analysis of the relationship between domesticated and wild

reindeer (biological, ecological, ethological and other aspects).

#### *Distribution and dynamics of the wild reindeer population*

The original population size of wild reindeer in northern Russia is unknown but according to approximate estimates for the 16th century, the total number of wild reindeer did not exceed 5 million. In the 1980's, the total number of both wild and domesticated reindeer never exceeded 3.400.000 (2.4 mill. domesticated and 1 mill. wild reindeer) (Syroechkovski 1986,1995).

Nowadays (1999) the total population of wild reindeer in Russia is 1.231.600. It is the maximum figure within the last 50 years, i.e. within the period when attempts were made to count the total number of wild reindeer in Russia. Within this period, the number of wild reindeer has only once approached 1 million, it was between 1985-1992 (Figure 13). It is quite possible that the present-day population has been slightly underestimated, because in the recent years the large populations of wild reindeer has tended to grow gradually while the land and aviation censuses are done less frequently and on a much smaller scale.

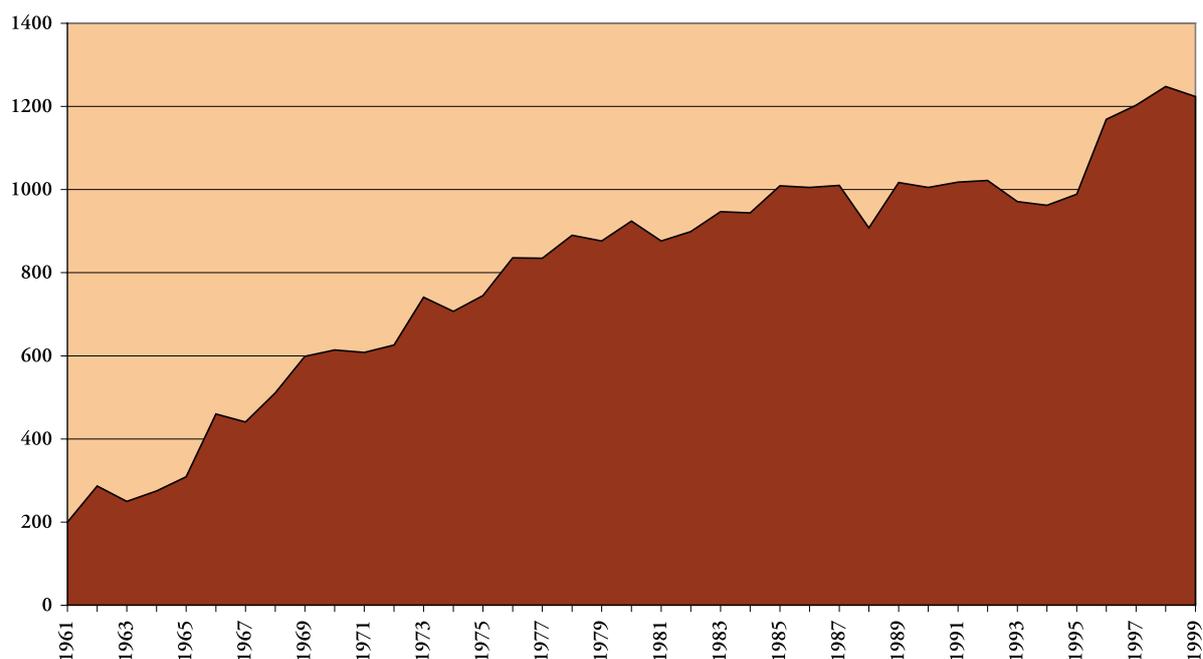
On the whole, the wild reindeer range in Russia comprises the tundra and forest-tundra zones, the major part of the taiga zone and mountain-taiga areas of South Siberia. But the main part of the wild reindeer population (about 85 %) is concentrated in three large regions: Taimyr, Northern Yakutia, and Central Chukotka (Figure 14). The area of these three regions is not more than 15% of the total wild reindeer range in Russia. The largest population occupies Taimyr and the parts of Evenkia, Yakutia and Western Siberia, that share borders with Taimyr (see text in the box).

In other regions of Russia there are few wild reindeer. Only in 9 regions their number is 5-20.000 (SEE MAP). In most of Russia the wild reindeer range has been separated into numerous isolated areas becoming smaller and smaller. Thus, in the major portion of its total range, the number of wild reindeer has been decreasing. The increase in the total number of wild reindeer in Russia can be accounted for only by the population growth in Taimyr and Central Chukotka.

#### *Problem of leading away domesticated reindeer by wild reindeer*

First of all, it is necessary to remember that domesticated reindeer frequently desert their herd irrespective of the presence of wild reindeer. Desertion generally takes place because of a wrong way of herding, when

Figure 13: Dynamics of Wild Reindeer Number in Russia, Thousand



reindeer have to remain for a long time on heavily trampled pastures, when they are exhausted due to blood-sucking insects, and so forth.

Reindeer herders are inclined to assign losses of reindeer to the following causes: death due to wolves or reindeer led away by wild reindeer. Although it is not fair to calculate the losses of domesticated reindeer due to wild reindeer from official documents, it is generally thought that a large part of the loss is attributable to wild reindeer.

However, in areas where wild reindeer are far more abundant (in Taimyr, the northern part of Evenkia, several regions of Yakutia and Chukotka) the picture is quite different. According to data from M.Kh.Geller (1969), in Taimyr and Evenkia in the period between 1958-1967 a total of 15.000 domesticated reindeer or about 1.500 animals per year were led away by wild reindeer. During this decade, the reindeer chose a non-standard direction for the winter migration. 1.500 per year is not a big number, especially when one considers that hunters bag 7.000 to 8.000 wild reindeer every year in this period.

As a rule there is no special item on the number of domesticated animals led away by wild reindeer in the annual statistic reports of the agricultural enterprises. V.M. Safronov (1999) notes, that in northern Yakutia in many cases all lost domesticated reindeer have been considered led away by wild reindeer. He calculated, that between 1985-1989 all sovkhoses of the North-

Eastern Yakutia lost 58.700 domesticated reindeer. 28.900 of them were lost within the ranges of the Yana-Indigirka and the Sundrun populations of wild reindeer, and 29.800 in areas without wild reindeer. The rate of domesticated reindeer lost by sovkhoses situated within the ranges of wild reindeer populations made up 6.8% of total number of animals, and the same induce in other sovkhoses is 4.6%. The difference (2.2%) is remarkable but not very important.

Unlike other regions, the Agriculture Department of Chukotka AO makes official accounts of domesticated reindeer losses caused by wild reindeer. In 1999 wild reindeer led away 2.500 domesticated reindeer. It makes up about 7 % of all unproductive losses in the Chukotka AO (36.400).

On the whole, losses due to leading away domesticated reindeer by wild ones sharply increase when large herds of wild reindeer change their familiar routes of migration and pass to other areas where reindeer herders are not prepared for their invasion.

As reported by Oleg Etylen from the Research Center "Chukotka" (Anadyr town), when lot of wild reindeer for the first time crossed the Anadyrsky mountain ridge and invaded in the pasturelands of the sovkhos "Omolon" almost half of one large sovkhos's herd (about 2.000 animals from 4.500) were led away instantly. The sovkhos director called for a helicopter with two riflemen, who began to shoot wild reindeer. As a result, the herd dissipated, wild animals mixed up

Map 7: Number and Distribution of Wild Reindeer (data of Centrokhotkontrol)

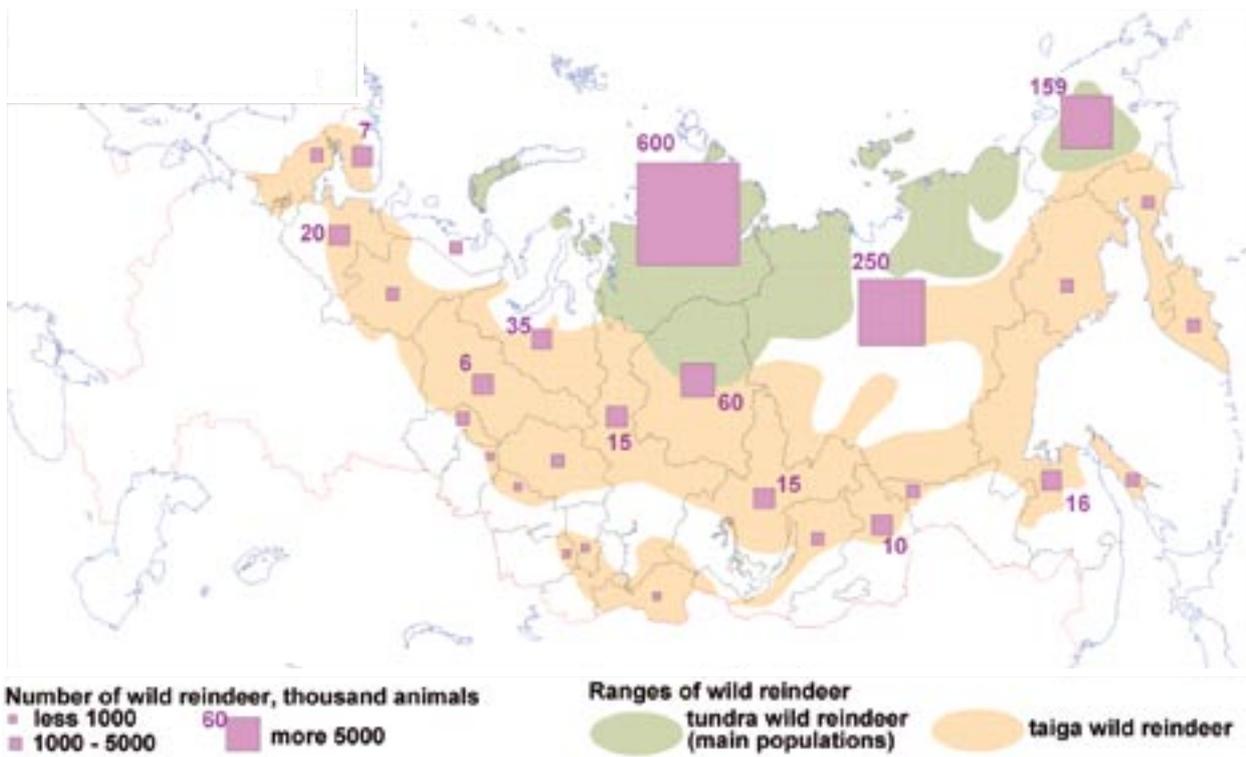
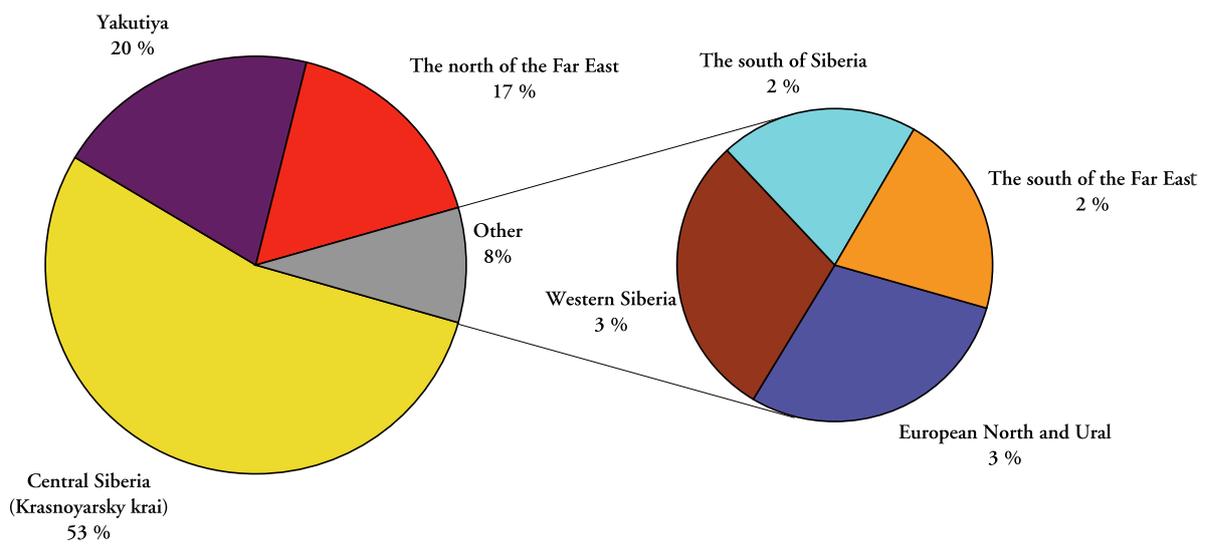


Figure 14: Number of Wild Reindeer in Regions of Russia on 01/01 1998, %



### **T**he Taimyr Wild Reindeer Population

*At present the Taimyr population remains the largest in Russia and, maybe, in the world. During the last 20 years, it has numbered about 500.000-600.000. There are different assessments of the actual size of this population (from 354.000 to 1.082.000 animals). Most probably the number is between 800.000-1.000.000. The wild reindeer in Taimyr are typical migrants. The distance between their calving places on the tundra and their overwintering places in the forest-tundra and northern taiga can be up to 1.000-1.500 km. A favourable factor for the flourishing of the Taimyr wild reindeer population was the absence of tensions between wild and domesticated reindeer. The reindeer husbandry on the Taimyr Peninsula has never been large-scale (up to a maximum of 120.000-130.000 domesticated reindeer in the 1960's). Under growing pressure from the increasing wild reindeer population, and in view of social influences the reindeer herding in Taimyr has been receding. At present, in the Taimyr Autonomous Okrug there are only a few tens of thousands domesticated reindeer left, they are mainly owned by the Nenets near the western boundary of the Okrug, on the left bank of the Yenisey River. Reindeer husbandry in the central part of Taimyr has dissolved almost completely. A small number of domesticated reindeer has remained in the ownership of the Dolgans. Nganassan reindeer herding has disappeared completely. The recession of reindeer husbandry has been brought about not only by social factors, but also by wild reindeer herds regularly leading away domesticated reindeer. In recent years, the ecological and economic control over the unique wild reindeer population on the Taimyr Peninsula has been lost. Nobody but wolves and poachers hunt wild reindeer. These are the only limiting factors for the wild reindeer population. A collapse of this population is possible because of overgrazing and exhaustion of pastures. According to estimates done by L.A.Kolpashchikov (1983, 2000), the utmost possible limit for the Taimyr population is 820.000-850.000 reindeer. It cannot be excluded that epizootics may spread there, in particular anthrax infection because in many places in Taimyr the domesticated reindeer that have died of anthrax are buried. The infection can survive quite well under permafrost conditions and is able to affect animals many years later if the burial places are disturbed.*

with domesticated reindeer of other sovkhos's herds created even greater losses.

In an other case the herders already knew how to protect their herd from wild reindeer. They also called a helicopter, which put them around the mixed herd of wild and domesticated reindeer. Then they began to move closer to the herd very cautiously. Slightly alarmed wild animals moved apart while domesticated reindeer allowed the men to get near them. This method gave the herders a chance to return almost all withdrawn animals. If the men had frightened off the wild reindeer the whole herd would have escaped. Usually the difference in behavior of wild and withdrawn domesticated reindeer remains for about one month. During this period it is possible to bring the animals back.

According to information from reindeer herders, when the wild reindeer move en masse, no frightening measures are effective against them. In some herds domesticated reindeer were protected around the clock. Rockets were burned, rifles fired - all in vain.

Nevertheless, most often the wild reindeer led away separate groups of domesticated animals which before had been "cut off" from their herd and pastured out of the herders' control. When herders keep up their herd closely and do not permit animals to move astray, leading away seldom occurs (Safronov, 1999).

At present, the data are insufficient for drawing conclusions, and measures to protect domesticated reindeer from being led away by wild reindeer require special research. Scientists have yet to suggest even one

sound measure to protect a herd; efforts towards protection have been based on the experience and initiative of the reindeer herders themselves.

The research Center “Chukotka” in Anadyr has been engaged in the problematic relationship between wild and domesticated reindeer since 1998. The purposes of researchers are to define exact limits of the wild reindeer population range, to carry out the monitoring of its seasonal migrations, to collect data on different methods that herders use to preserve their herds from contacts with wild reindeer, and also to study the ethology of wild and domesticated reindeer. From the 1950-1960's the land-use division of pasturelands quite often does not allow herders to maneuver their herds to avoid contact with wild reindeer. Besides, they do not receive in time the information about wild reindeer displacements. Therefore, one important task is to create an observers network of herders, hunters and specialists of reindeer husbandry to collect and transfer all notifications about the migrations of wild reindeer.

Such a network would also allow the integration of scientific approaches with traditional knowledge, to note the most important changes in the wild reindeer population ecology and behavior and to form a base for a resource management.

#### *Pasture competition of domesticated and wild reindeer*

Wild and domesticated reindeer may be considered as two ecological forms of the same species, occupying somewhat different ecological niches in the biocenose. This fact is of practical significance.

Wild reindeer utilise pastures in a different manner than the domesticated reindeer because their grazing habits differ. When domesticated reindeer grazed on the same pasture for a long time, the fodder base is overgrazed. This is especially typical of winter lichen areas. Under these conditions, keeping the herd in one place or rarely changing herd areas is important because the reindeer trample the pastures around the herders camps.

Wild reindeer feed while on the move, covering a distance of 2.500 km during a year in the Taimyr-Evenkia region. “Wilds” do not stay in one place for a long time and change their path every year, resulting in a natural rotation of pastures.

All this indicates that wild reindeer use lichen pastures in a more rational way than domesticated ones.

In the absence of wild reindeer overpopulation, the specificity of their grazing excludes trampling of pastures (Kolpatchikov, 2000).

The main places of wild reindeer grazing are located in the areas where it is difficult to pasture domesticated ones. The diets of both forms of reindeer also differ greatly.

One can assume that with a wise economic development it would be possible to have a combined use of the northern ecosystems by domesticated and wild reindeer. This would permit a use of the available biological resources of reindeer pastures in a more rational manner. But this is not an easy thing to do from the organisational viewpoint, although it would undoubtedly be rational from an ecological position.

As for the last problem – contribution of wild reindeer to preservation of various nidi of infectious diseases – numerous data show that the wild reindeer are inflicted by infectious diseases much less than the domesticated ones. Nevertheless, in the Taimyr area where wild reindeer use pastures with several anthrax nidi the danger of anthrax flares is very likely.

#### *Conclusions*

On the whole, the combination of reindeer herding and wild reindeer hunting is a rather difficult problem to solve. From the biological viewpoint, the wild reindeer have a number of advantages compared with the domesticated ones. Their productivity is higher; they use pastures in a more rational way, suffer less from infections and parasitic diseases, and better resist to gnats.

Assuming a wise economic development it might be possible to have a combined use of the northern ecosystems by domesticated and wild reindeer. A new concept of - the so-called “wild reindeer management” (Syroechkovski 1986, 1995) means not simply the hunting of wild reindeer but a special branch of wild reindeer breeding based on remote methods and devices to control herds of freely grazing wild reindeer.

From the economic viewpoint, the wild reindeer hunting gives reindeer meat of higher quality and with less expenses than reindeer herding. So, the wild reindeer hunting can become a competitor of the reindeer husbandry and suppress it economically.

From the social viewpoint, only aboriginal peoples are occupied with reindeer herding. The wild reindeer hunting is not a prerogative of indigenous peoples, the incomers can repress the native hunters.

What are the social and economic advantages and disadvantages of wild reindeer hunting compared to reindeer husbandry for aboriginal peoples of the North?



Chukchi Woman from the Basin of Belaya River in Central Chukotka, Russia  
Photo © Konstantin Klokov

One would think that the wild reindeer management, or hunting, created optimal possibilities for the development of a traditional way of life for a number of indigenous peoples who historically were more reindeer hunters than reindeer herders (like the Nganasans, Yukaghirs, etc.). But actually this was not the case. The development of wild reindeer management in Taimyr needed a considerable number of good hunters, and besides aborigines, a lot of incomers took part in the wild reindeer hunting (for example, the workers from the Norilsk metallurgical plants during their leaves). The earnings during a short, well organised season of reindeer hunting (during the period of autumn migration) were very high, even higher than at the metallurgic plants. As a result, more "productive" and better organised incomers gradually supplanted most of the aboriginal hunters.

It is clear from a simple analysis of the wild reindeer populations that only inhabitants of Taimyr, northern Yakutia, Evenkia, and central Chukotka have possibility to hunt wild reindeer in number sufficient to survive (Dolgans, Nganasans, some of the Yakuts, Evens, Evenks, and Chukchi).

On the whole, one could say that if the number of wild reindeer in the taiga and tundra becomes higher, practically all indigenous peoples will have the possibility to combine reindeer husbandry with a relatively small wild reindeer hunting for their own personal needs. For this purpose additional measures for the protection and restoration of the wild reindeer in the taiga zone are necessary.

The Dolgans, the Nganassans and partly the Yenisey Nenetz, living within the sphere of seasonal migrations of the large Taimyr population of wild reindeer, as well as part of the Yakuts and Evens from northern Yakutia, could make the wild reindeer hunting a base of their traditional economy having also a small-scale reindeer husbandry for personal utilisation and transportation.

The East European and West Siberian Nenetz, on the contrary, can survive having conserved their productive large-herd reindeer husbandry even though all wild reindeer were exterminated long ago.

The other peoples have to combine reindeer husbandry with wild reindeer hunting in different ways taking into account that the situation in both branches is critical.

A practical solution to this complicated ethno-social problem: what to choose - reindeer herding or wild reindeer hunting, must be evaluated on the basis of the concrete situation in the area of each aboriginal people.

## Relationships between reindeer enterprises and industrial companies exploiting mineral resources in the reindeer husbandry area

The process of formulation of contracts between the indigenous peoples of the North and governmental and non-governmental organizations, that is taking place in the Russian Federation, is a sign of a formation of civilized partner's relations. The following spheres of collective legal relationships are especially important for the reindeer management: the right of possession and disposal of the lands of traditional resource management and rational use of financial means, allocated by industrial companies as compensation for use of nature resources of these territories.

There are a number of regional laws and normative acts on the issues of land use and possibilities for the influence of indigenous peoples on the forms of use of lands on their traditional territories. The process of bilateral regulation of such interrelations is most developed in the Sakha, Komi, and Buryatia Republics and Yamal-Nenets, Khanty-Mansii and Taimyr AO. It is no wonder, that in particular in these regions a practice of conclusion treaties and agreements between different economical subjects is most developed (Peliasov, 1998).

It was repeatedly spoken about financial means, allotted by mining companies. Unfortunately, under the present system of transfer the concrete reindeer herder is the last one, to whom is reached by these means. There is a number of barriers in the way of their transfer and, consequently, the use for the reindeer herders' needs, such as important daily tasks – the provision of the social sphere of the settlements, where reindeer herders' families live, schools and infant schools, doctors, etc. The reindeer herder and the mining company do not have the possibility to conclude a direct treaty, for example, on construction of a slaughter house. Under this situation the companies and the administration can put pressure upon the reindeer herder. At present a great number of complaints are put forward mainly by representatives of clan land users about failure to take their opinion on the land withdrawal into account. However, on paper the decision is approved and signed by the representatives of all sides – the company, the administration and the reindeer herders.

Is there any solution? Yes, on condition of a direct participation of the reindeer herders from the enterprises of all forms of ownership in the distribution of financial allotments when the territory is withdrawn

for oil and gas exploitation. In this situation the collective enterprises could secure their interests as they have lawyers and financiers in their staff. A specially created juridical service of the RHUR could undertake the protection of the interests of the clan communes.

## Legal Basis for the Regulation of Reindeer Husbandry

### General characteristic of the legal base

At present the legal status of the reindeer husbandry in Russia is not determined by any special governmental laws. The legal regulation of the reindeer husbandry in Russia is executed in accordance with juridical acts on regulation of agro-industrial complex in Russia and with norms of the Constitution of the RF, Land, Civil and Forest Codes of the RF, the federal law on the rights of indigenous peoples of the North, Siberia and Far East, the legislation on ecology and use of mineral resources. Laws and by-law acts on enterprises and business activities are also important in reindeer husbandry.

The situation in the regional legislation, regulating different aspects of the reindeer husbandry (first of all, land, forest, and the use of mineral resources) is

to some extent ambiguous. On the one hand, a new, progressive stage in the development of Russian law is demonstrated by its regionalization and ethnization. On the other hand, regional and local (municipal) legal initiatives, giving voice to expectations and aspirations of the “provinces”, reveal increasing frequency show non-agreement with the federal legislation.

The present regional and local normative-legal acts on reindeer husbandry and related issues should undergo considerable revision in view of the passing of the new Land Code, inserting amendments of the Civil and tax Codes, coming corrections of the Budget Code and other branch system acts. The reform of the Land legislation in the RF is especially affecting their future.

At the end of 2001, when the new Land Code, responding to modern market relationships and clearing up the issues of land rights considerably, was set into operation, only three of the Russian regions had special laws on reindeer husbandry. They were the Yamalo-Nenets AO (Law “On reindeer husbandry”, 1998), the Sakha Republic (Law “On reindeer husbandry”, 1997) and the Chukotka AO (Law “On State Support of Reindeer Husbandry Development in Chukotski Autonomus Okrug”, 2000). The present of the law proposals in the Khanty-Mansi AO and the Magadan Oblast could be regarded as a progress in this sphere. Questions, concerning adoption of special laws on reindeer husbandry, were discussed and sub-

Nganasans Boys from the Piasina River in Central Taimyr, Russia

Photo © Konstantin Klokov



mitted for consideration of the legislative bodies of the subjects of the RF by initiative groups in the Nenets AO, the Murmansk Oblast, the Komi Republic and the Evenki AO as well as on the federal level.

A comparison of the regional laws in force and projects of the present regional normative acts with the project of the federal law on reindeer husbandry shows a common aspiration of all lawmaking groups to achieve common goals. All present normative acts and projects of the laws on the federal and regional levels regard reindeer husbandry as a kind of traditional economic activity of the indigenous peoples of the North and other "ethnic communities". At the same time it is specially remarked, that reindeer husbandry is an indispensable condition for the preservation of the traditional way of life and the original ethnic cultures.

Nevertheless, one can notice several shortcomings in the regional normative-legal acts on reindeer husbandry. They are:

- overloading of the list of basic conceptions with biological and zoological terms, while they are not used in the text of the law;
- careless formulation of the single norms;
- incompetence in the sphere of land relationships;
- lack of logical comprehension of juridical qualification of proprietary right in general (possession, disposal, user), and others.

Under the general tendency to develop regional legislation, the regional normative-legal acts of the subjects of the RF on reindeer husbandry seldom demonstrate competence on ethnic specificity of the territories. In addition, regional normative-legal acts are usually written in language too complicated for the reindeer herders' understanding. Thus, they could hardly be used effectively for protection of their own rights. It can be admitted, that the pseudo-juridical language of some regional and local juridical acts is incomprehensible also for specialists. Besides, the reindeer herders generally do not have the laws texts. This circumstance affects the development of the legal activity of the reindeer herders. They are often unacquainted with law contents even in a general matter.

## The Economic-legal base for the development of the reindeer husbandry

Since 1990 the Russian legislation, devoted to agricultural problems, has undergone considerable changes, which were caused by the reformation of land, production and civil relationships in the country. These changes were due to official recognition of the equal rights of all forms of ownership, including land rights, as well as the diversity of organization-legal forms of enterprises and freedom of its economic activity.

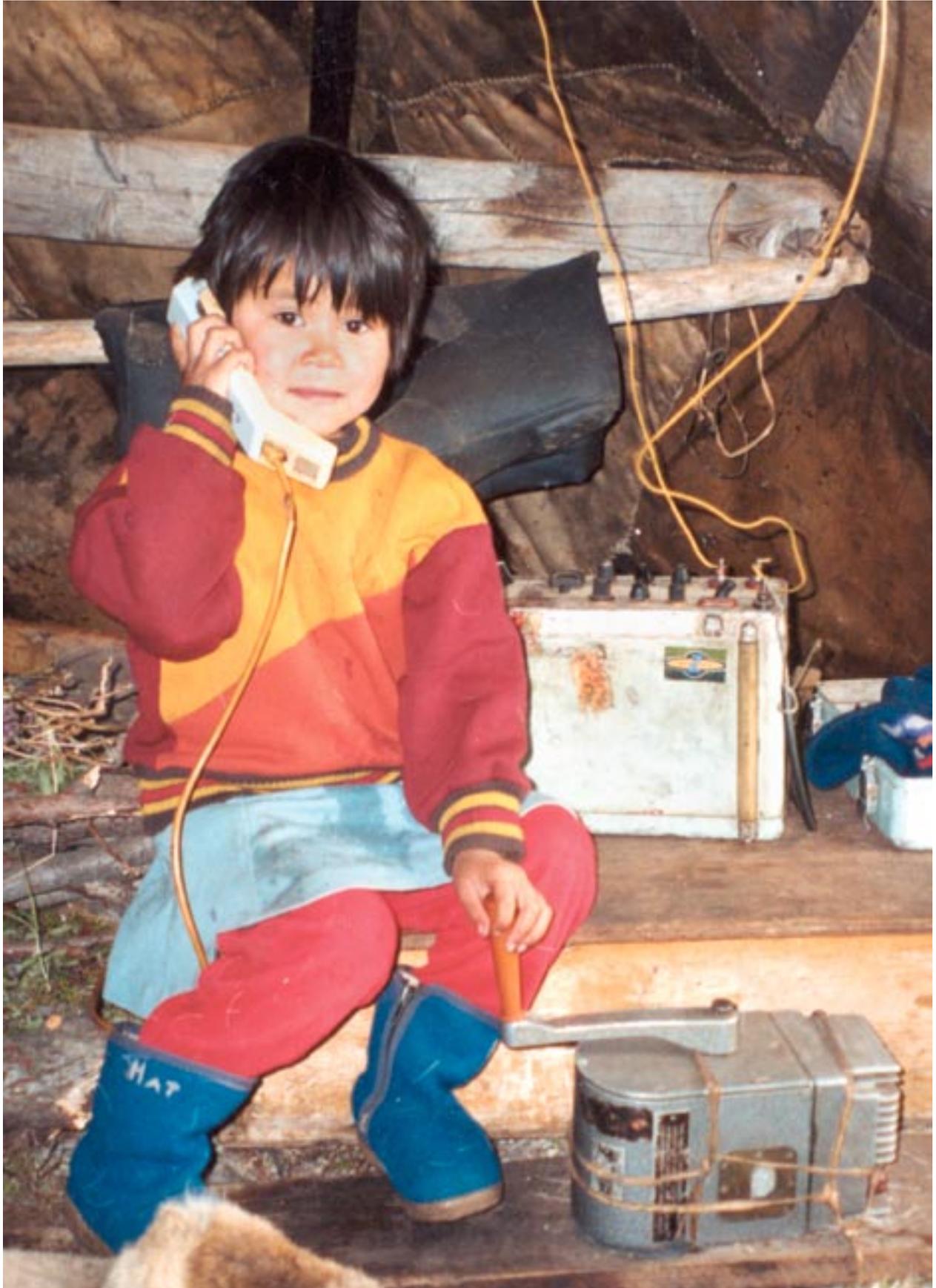
The most important principles of reorganization of collective- and state enterprises for the traditional economy of the indigenous peoples were the following:

- voluntariness of the choice of organization-legal form of the enterprise (within the bounds of current legislation);
- social justice and protectability of the population and employers connected to the enterprises under reorganization;
- and responsiveness to its national and historical specialties.

The last two principles practically were not realized in the northern territories. Progressive decrease in living conditions and trampling on their traditions was the evidence of this fact.

During the first years of the land reform practically all collective- and state enterprises, related to traditional branches, were reorganized. Agricultural co-operatives, close and public corporations, joint-stock companies and farmers' enterprises appeared on their base. In practice reindeer pastures were not transferred to private ownership of the herders, but carried over common joint or common shared property. At the same time, allotment and distribution of the shares from collective- and state enterprises' pastures, as a rule, was not confirmed by an allotment certificate. As for reindeer herders who have left the collective- and state enterprises and started their own business, they usually have received unoccupied pasture lands. "Allotment" of such grounds was mainly based on the norms of common law and other local traditions.

In the process of reorganization the reindeer enterprises were usually regarded as agricultural producers regardless of their specific features. Thus, the new organizational forms, such as farmers enterprises, were introduced in reindeer husbandry in the course of the



Chukchi Girl from the Basin of Belaya River in Central Chukotka, Russia  
Photo © Konstantin Klokov

land reform. According to asset 23 of the Civil Code of the RF and the law “On farmers’ enterprise”, the farmers’ enterprises could be created by single persons, by families or other groups of people for production, processing and sales of agricultural products. The head of the farmers’ enterprise is regarded as a businessman without creation of a legal person. In reality most part of the “farmers enterprises” in reindeer husbandry turned out to be a completely unsuitable organization form and crashed.

“Clan grounds” is a new, specific and in juridical aspect practically baseless local organization form within the traditional economy of the northern indigenous population (this form is not noted in the Civil Code of the RF). As a rule they can include reindeer pastures, hunting grounds, and traditional places for fishing and gathering used by the indigenous population. According to the legislation the clan grounds are transferred to their owners with a right of heritable life tenure, but not as a property or rent. The issue of realization of the right of ownership to clan grounds (including reindeer pastures) remains open.

The activity of the “indigenous peoples’ community” (or “clan community”), is unlike joint-stock companies and producers’ co-operatives characterized by the law as non-profitable. That is why, according to the legislation, the clan community could get tax

allowances and other benefits. The local government can conclude with a clan community contracts for projects execution and rendering services, and grant them special financing.

The law considers the clan community as a form of self-organization of the indigenous peoples. It has determined the right of community for traditional economic activity and its obligatory registration as a legal person. At the same time, the law has not fixed the land rights available for the clan community and has not determined the order of registration of these rights.

Changes concerning the right of heritable lands tenure are important for the development of reindeer husbandry. This right could be successfully spread over the territories of indigenous peoples of the North in the course of formation of farmers’ enterprises, as well as clan grounds and clan communities.

It should be noted, that according to Russian legislation, everything which is under the soil is in state ownership. This is especially actual for the regions rich in mineral resources, like Khanty-Mansi AO and most of the territories of reindeer husbandry.

At present practically all reindeer pastures (as well as agricultural lands) are in the state or municipal ownership. Economic subjects in the reindeer husbandry reserve for themselves such types of land rights

*It is indicative that in the Khanty-Mansi AO the process of realization of the right concerned went on between 1992 and 1998 with variable activity. The appearance of the “clan grounds” (about 300) promoted the development of private reindeer husbandry and the preservation of the reindeer husbandry in the Khanty-Mansi AO in general.*

*A new order of withdrawal and allotment of the clan grounds was determined with passing of new federal legal acts and the Law of Khanty-Mansi AO “On withdrawal and allotment of lands on the territory of the Khanty-Mansi AO” in 2000. The law obliged the owners of earlier received “clan grounds” to revalidate them according to new federal and regional legislation on land, forests, waters and mineral resources. This was practically an official preclusion for reindeer husbandry made by the government bodies. For the main part of the indigenous population of the Khanty-Mansi AO occupation in reindeer husbandry and other traditional branches of economy could be provided only by the preservation and spreading of the right of heritable life tenure for land plots.*

*The new Land Code of the RF (2001) once again reviewed the given right. Asset 21 of the Code establishes inadmissibility of allotment of the land plots as heritable life tenure to the citizens. Although the new Code gives the possibility for citizens, owning the land plots as heritable life tenure, to acquire them as property, this possibility could hardly be realized by the reindeer herders.*

as usufruct (permanent or temporary) and heritable life tenure for the lands of the state and municipal ownership, common joint and, rarely, common shared property, as well as landowning as a lease.

Today, one can notice from the state an ambivalent attitude to the proprietors of lands, land-users, landowners or leasers, including reindeer enterprises of certain forms of ownership, owners of clan grounds and clan communities. This concerns reindeer herders as well as all representatives of the indigenous peoples of the North, organized into small producers' collectives. Thus, in the logic of the legislation, the establishment of the right to receive the land plots for agricultural works (reindeer husbandry in Russia is considered as an agricultural branch, closed to cattle-farming) as a property by any natural person, including farmers, seems incomprehensible. It is also evident, that existing types of land rights, vested to agricultural producers, will be reviewed once again in connection with the passing of a special law on turnover of agricultural lands.

## The State-legal rehabilitation of the reindeer husbandry as a branch of agriculture

Addresses of state authorities to the problems of agriculture, as well as general attempts of their state-legal settlement, took place time and again during the last decade. The federal law "On state regulation of agro-industrial production" (1997) represented as especially important step in this direction. Its basic principles and standards are a legal platform for solutions to numerous serious problems in the branches of agro-industrial complex, including reindeer husbandry.

The law determined, that the state carries out the financing of the agro-industrial complex at the expense of the federal budget means, budgets of the subjects of the RF and off-budget sources. It guaranteed also the possibility for free sales of products, raw materials and foodstuffs for all categories of agricultural producers.

According to the Law, the Government of the Russian Federation could determine guiding prices and



Chukchi Settlement, Bassin of Belaya River, Central Chukotka, Russia

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guaranteed prices for agricultural products (including reindeer meat and other products of reindeer husbandry), raw materials and foodstuffs.

Guiding prices (normative indicators) were fixed for the providing of parity price relations for industrial and agricultural production and covering losses, caused by taxes, other outgoings and credit interest payments. Guiding prices were regarded not only as a base for the fixing of guaranteed prices, but also for the establishing of pawning rates, as well as for the calculation of grants and allowances for agricultural producers.

Guaranteed prices for agricultural products, raw materials and foodstuffs could be applied in the case, when average market prices are lower than the guaranteed ones. Guaranteed prices could be applied, when selling agricultural products directly to the state, as well as for additional payments to producers in the sphere of the agro-industrial production. The Government of the RF determines the list of agricultural products, raw materials and foodstuffs, for which

guaranteed prices are fixed, volumes (quotas) of their sales at those prices, level of guarantee for the prices and their indexation, as well as, essentially, the order of their application.

By the end of the perestroika decade the reindeer husbandry issues were still in the focus of attention of the state authorities. In spite of the failure to pass a federal law on reindeer husbandry Russian leaders rather actively showed their interest towards the “most weak places” of the economy of the country. As a result, a special Governmental Decree devoted to the development of the additional measures of state support of northern reindeer husbandry in 2000-2005 was passed. A more definite distribution of tasks, necessary for its realization was carried out by the Ministry of agriculture of the RF which approved the special Order and the “List of Priority Activities for the Development of the Reindeer Husbandry”. It recommends to pay a special attention towards involvement of “the means of organs of executive power of subjects of the RF in the northern



Chukchi Settlement, Bassin of Belaya River, Central Chukotka, Russia

Photo © Konstantin Klokov

regions as equity participation”, as well as the means of foreign investors and other producers. The creation of joint enterprises together with foreign companies, should be applied for the development of the “base for processing and sales of reindeer husbandry products”. The Order took into consideration the whole spectrum of reindeer husbandry problems; including adjustment of financial (credit, budget, investment),

custom, leasing, land-use, ecology, veterinary, ethnic and other aspects of production relationships, existing in the given branch.

Now, the perspectives of the preservation and development of the reindeer husbandry in many respects depend upon the tendencies, that appear in the Russian legislation and legal practice.

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Scenery from Fish River, Alaska

Photo © Johnny-Leo L. Jernsletten

## Reindeer Husbandry in Alaska

### Introduction

This chapter focuses on the reindeer husbandry in Alaska. The historical situation for this industry differs from the other countries in this report. Reindeer were first introduced to Alaska as late as 1891 because of a crash in the caribou herds. It was the Reverend Sheldon Jackson, General agent of education in Alaska, along with Captain Healy on the ship “Bear” that imported 16 reindeer from Siberia to Amaknak Island on the Aleutian Chain. In 1892 Jackson brought the first reindeer to the Seward Peninsula, dropping them off at Port Clarence near Teller, Alaska. Jackson believed that reindeer would provide a stable food supply for Alaska Natives. Between 1892-1898 Alaska Natives were trained by hired Siberian Native herders and later Saami herders.

The entire Baldwin and Seward Peninsulas serve as reindeer pastures, as well as permitted areas near Shaktoolik, Stebbins, and on St. Lawrence Island. There are also herds further to the South on the islands of Nunavak, Umnak, St. Paul and St. George. In addition,

there are also small herds in Palmer, Delta Junction and the Kenai Peninsula.

Under various owners and managers, the population of reindeer has fluctuated. By 1905 there were 10,000 head and by 1932 there were an estimate 640,000 reindeer. In 1985 the number was reduced to 23,000 reindeer in Alaska. Today there are an estimated 17,650 reindeer in Alaska with about 10,000 on the Seward Peninsula.

### Collection of Data

The information about the reindeer industry was collected during a fieldtrip to Alaska. The project visited St. Paul Island and the indigenous corporation TDX has been very helpful in giving the information needed about the reindeer industry on the islands. We also visited Seward Peninsula with a great help from Kawerak Inc. in Nome. We wish to thank the Director of the Reindeer Herders Association (RHA)

Rose Atuk Fosdick who has provided a summary of the situation concerning on National Management, Caribou, and Legislation. In addition to this the State of Alaska, Department of Community & Economic Development have provided the project with statistical information.

The information available about the reindeer industry differs both from Russia and the Scandinavian countries. This means that the chapter about the Alaska reindeer industry also will differ from the other chapters presented in this report. The configuration of the chapter reflects the information available from Alaska.

## National Management of Reindeer Husbandry

Several governmental organizations are found in Alaska: the federal government, state government, city government and tribal government. Although

each of these organisations are interested in reindeer herding and each play a part in reindeer management, the most formal and prevalent involvement is by the federal government.

Management of federal land is the responsibility of the U.S. Department of Interior, Bureau of Land Management (BLM) and the U.S. Department of Interior National Park Service (NPS). Both BLM and NPS have published federal regulations that define the process for reindeer herders to apply for and use federal land for reindeer grazing.

Additionally the State of Alaska has rules, regulations and procedures affecting the use of state owned land for reindeer grazing. They also require herders to register ownership markings and follow regulations for inspection of meat.

Larger private land owners such as regional corporations and village corporations also have rules, regulations and procedures affecting the use of their privately owned lands for reindeer grazing.

City and village governments are interested in reindeer management and routinely make their concerns known to reindeer herders.



Old karal, St. Paul Island

Photo © Johnny-Leo L.Jernsletten

## Reindeer Herders Association

The Reindeer Herders Association (RHA) was formed to encourage, foster and facilitate the orderly and efficient production, distribution and marketing of reindeer products. RHA provides administrative, logistical, advocacy and field support to its members. Members are owners and managers of reindeer herds. An executive committee of five officers provides direction and recommendations to the staff located in Nome housed under Kawerak, Inc., a regional non-profit corporation. RHA receives support from the Department of Interior Bureau of Indian Affairs.

There are 21 members from the communities of White Mountain, Savoonga, Deering, Buckland, Nome, Teller, Kotzebue, Shishmaref, Stebbins, St. Michael, Wales, Koyuk, Brevig Mission, Mekoryuk. Their by-laws state that reindeer owners can become members of the association.

The staff is composed of a director, specialist and half time administrative assistant.

## Annual Meeting

Each year the association holds an annual meeting in Nome in the month of March. Items on the agenda from recent meetings included caribou/reindeer problems, mapping winter ranges, reports on reindeer and caribou surveillance flights, new membership, earmarks, ear tags, elections, Teller Fish and Meats Plant, radio collars, satellite collars, UAF research, updates from Bureau of Indian Affairs, Bureau of Land Management, Natural Resource Conservation Service, National Park Service, Farm Service Agency, Intertribal Agriculture Council and a report from Alaska Department of Fish and Game on the status of the Western Arctic Caribou Herd.

## Pastures

The entire Seward and Baldwin Peninsulas serve as reindeer pastures, as well as permitted areas near Shak-



Vulcano cratre, St. Paul Island, Alaska

Photo © Johnny-Leo L. Jernsletten

toolik, Stebbins, and on St. Lawrence Island. There are also herds further to the South on the islands of Nunivak, Umnak, St. Paul, St. George. In addition there are also small herds in Palmer, Delta Junction and the Kenai Peninsula.

*Reindeer Owners in Alaska*

Herders apply for and receive land use permits from land owners to allow their reindeer to graze on public and private land. On Seward Peninsula each reindeer owner has a Permit area, within which the reindeer are kept. The annual migrations of the herds are kept within each permit area. The degree of herding differs among reindeer owners.

On the islands the situation is different. On St. Paul the reindeer move freely on the whole island as one big herd, and the island is not divided into Permit areas. The reindeer on the island are owned collectively by the Aleut community.

A management plan is developed for St. Paul, which regulates the use of land on the island. To keep the number of reindeer at a sustainable level is one of the main focuses in the plan. Also the use of motorised vehicles and protected areas for birds and seals are regulated by the plan. This is a good example of co-management between the local community and the

federal government, which has had a positive impact on the reindeer industry.

## Economy in Alaska Reindeer Husbandry

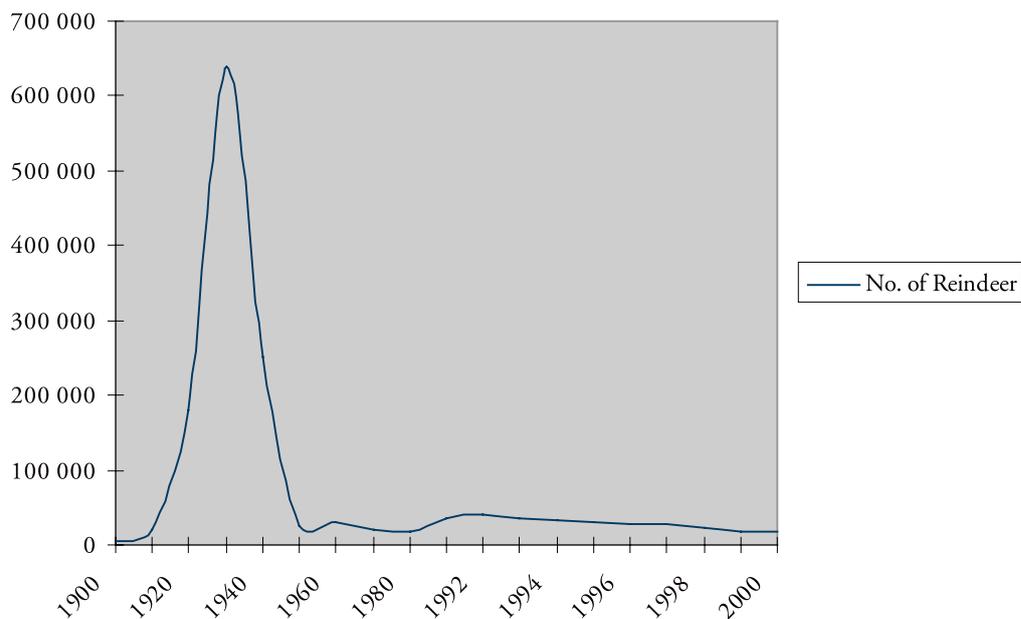
### Introduction

As mentioned in the introduction, reindeer are found on several islands along the west-coast of Alaska and on Seward Peninsula on the mainland. The economy and the economic impact connected to the industry differs between the industry on the islands and the industry on the mainland. The main reindeer husbandry area is on the Seward Peninsula.

### Size of the Herds

Historically the total number of reindeer in Alaska has had tremendous fluctuations during its 100 years of existence. After the introduction of reindeer to Seward Peninsula, Alaska experienced a rapid growth of the herds due to the pristine ranges that provided excellent

Figure 1: The Development of the Total Number of Reindeer in Alaska, 1900 - 2000



grazing as well as competent animal husbandry practices, such as 24-hours herding. The net annual herd increase until in 1934 was estimated to 25-33% yearly. In 1932 the official number of reindeer in Alaska was 641.000, with approximately 130.000 at the Seward Peninsula.

Figure 1 shows the historical development in the number of reindeer in Alaska. The general decline of the reindeer population began in 1933, and by 1950 only 25.000 reindeer remained. In the period from 1950 to 1992 the number of reindeer increased to approximately 41.000 animals, but again decreased down to 19.000 in 1999. On the Seward Peninsula the estimated number for 2001 is 9.000 animals and the industry is facing a major crisis at the moment.

The situation for St.Paul is historically more or less the same as for the mainland. After the introduction of 25 reindeer to St.Paul in 1911 the reindeer population experienced a rapid growth with a peak in 1938 with almost 2.100 animals. This situation resulted in the disappearance of lichen and the reindeer did not have adequate winter food reserves. The population collapsed and by 1950 there were only 8 reindeer left. According to a survey in 1979 there were 450-559 reindeer on St.Paul and from the beginning of 1990 to 2001 the number of animals has been stabilized around 600.

## Income Connected to Reindeer Husbandry

The project has not obtained any official statistics over the different incomes of the reindeer owners, but there are some official statistics concerning the value of meat production and other by-products of the reindeer industry in Alaska today.

According to an article of J.D. Swanson & H.W. Barker in Rangifer from 1992 the important incomes connected with the reindeer industry can be described as follows:

“Reindeer meat became a normal part of the local diet. During 1928-30, 2.500.000 kg of reindeer meat were shipped to markets in the lower 48 states (Palmer, 1934). By-product markets were developed for antlers, blood and vicera. Canned dog food was retailed. Antlers were exported and used for knife handles. Skin were used locally for making boots, parkas, trousers and sleeping bags (Palmer, 1934).”

The situation has of course changed since then, but it is still the meat production which is the cornerstone of the income to the reindeer industry. According to our data from Alaska, there are approximately 150 local

Figure 2: The Development in Total Number of Reindeer, Alaska and Seward Peninsula, 1988 - 2000

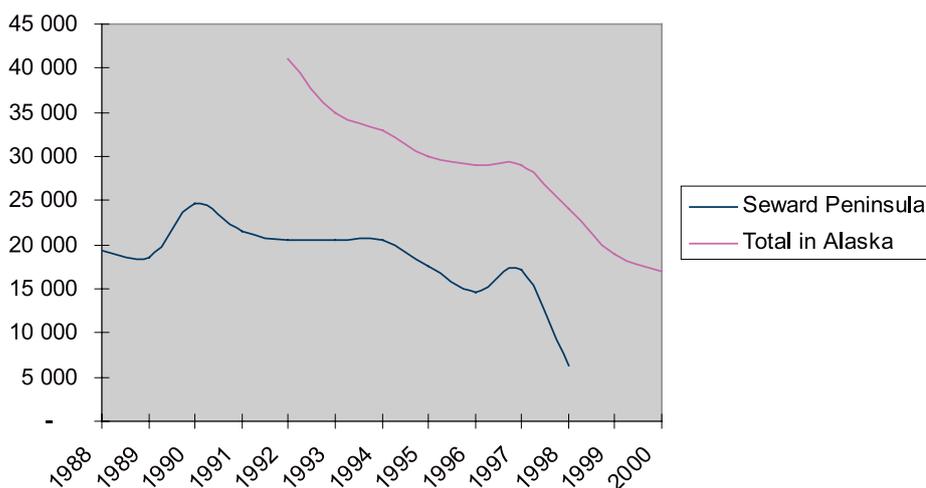
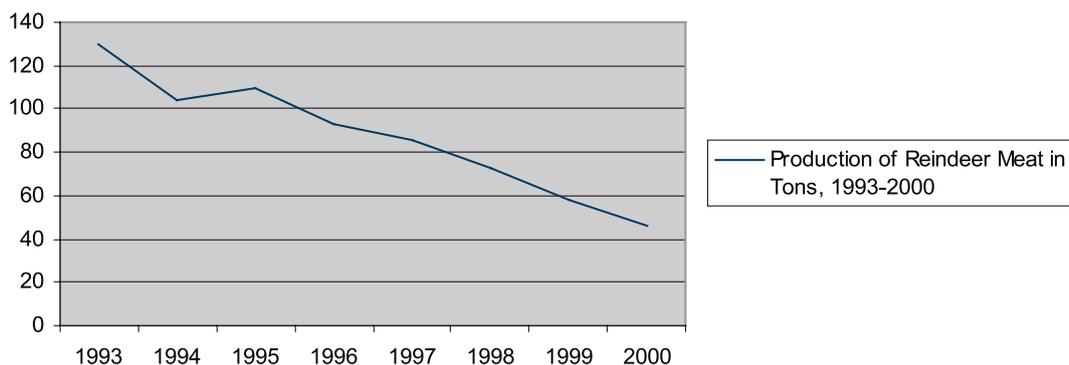


Figure 3: Production of Reindeer Meat, Dry Weight, in Tonns, 1993 - 2000



people on different locations on the peninsula who are directly involved in the industry, in addition the industry gives opportunities for employment in the small communities in Alaska connected to processing of reindeer products.

Figure 3 shows the trend in the production of reindeer meat in Alaska between 1993 and 2000. The figure corresponds closely the development of the size of the reindeer herds shown in figure 2.

The peak income to the industry on Seward Peninsula was in the early 1990's with 1.5 mill. USD when 15 herds were in operation. Today the industry suffers direct losses of 1 mill. USD annually due to the caribou problems and the soft antlers prices. Alaska's total reindeer meat sales in 1992 were 150 tons (330.000

pounds) dry weight with a value of 662.000 USD. The reindeer meat sales in 1999 dropped to 48 tons (105.000 pounds) with a value of 295.000 USD. This development is also shown in figure 4.

Figure 4 indicates that the price of meat is permanent in spite of the decrease in the production of reindeer meat. According to this figure the price of the reindeer meat has been almost unchanged since 1993. During this period the price for one kilogram of meat has been 2,4 USD.

It is difficult to explain this development, but one explanation is a market for reindeer meat not working according to the general economic laws of supply and demand. Expectedly, with a normal working market for reindeer meat within Alaska, or in the lower 48,

Figure 4: The Value of Reindeer Meat in USD, 1993 - 2000

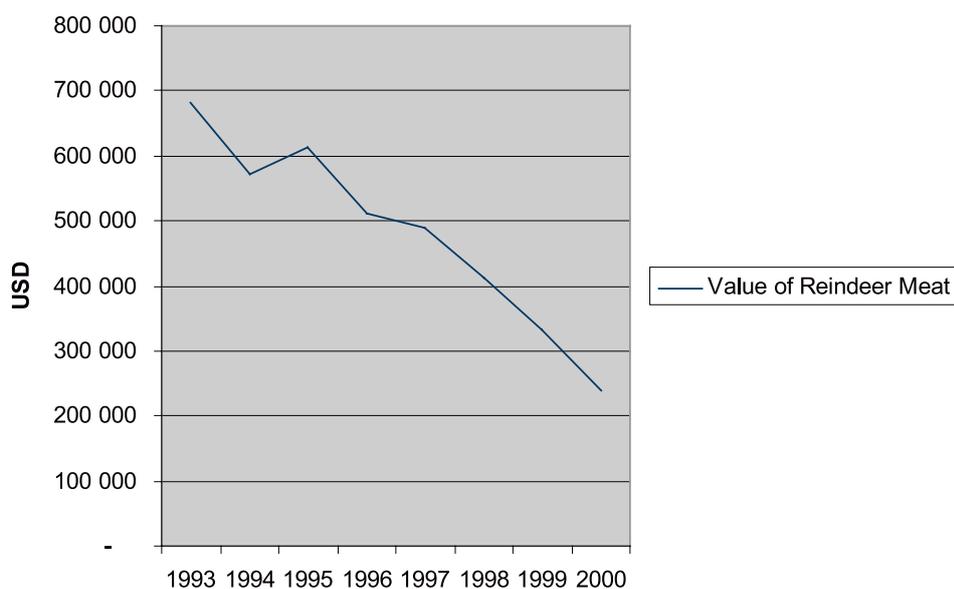
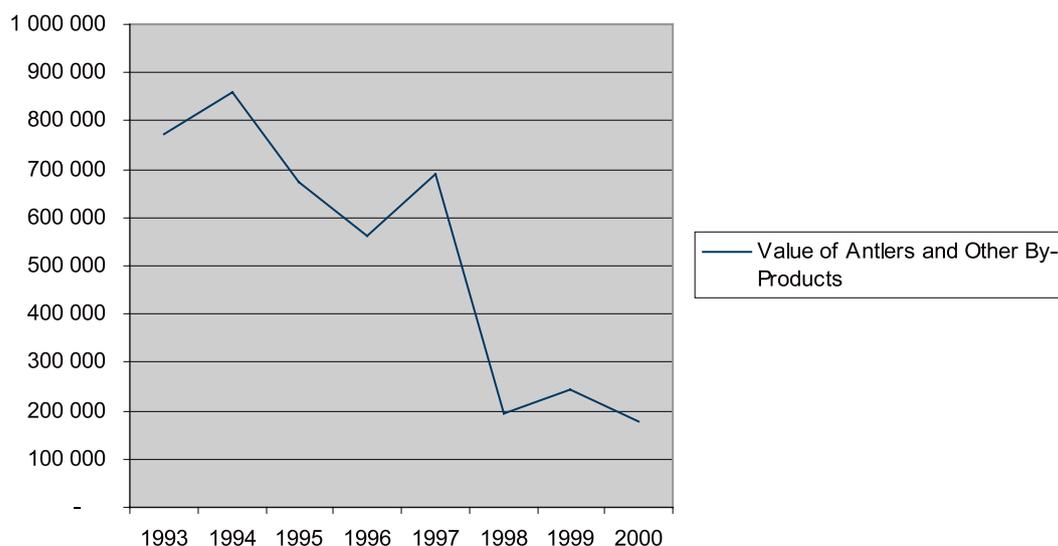


Figure 5: The Value of Antlers and Other By-Products. 1993 - 2000



the price would have increased when the production was decreasing. But as the figure indicates, this is not the case. According to the statistics this means that in practice there is a fixed price on reindeer meat.

Sale of reindeer meat is not the only source of income for the industry. Historically, soft antlers, blood and the fur provided important income for the reindeer owners. Figure 5 shows that the value of antlers and other by-products from 1993 to 2000 is declining. The sale of soft antlers to the Asian market has been an important part of the income, but since Korea banned import of soft antlers, this income has rapidly decreased.

If we look closer at the figures, the value of antlers and other by-products is actually higher than the value of meat production. This gives us an indication of the differences between prices on meat and soft antlers, and it shows that the soft antlers market was very important for the economy of the reindeer owners in Alaska.

## Costs Connected to Reindeer Husbandry

The project has not obtained any statistics showing the costs connected to the industry. This part of the chapter is therefore based on interviews with some of the reindeer owners, organisations and other representatives from the industry.

In many ways the costs connected to the industry do not differ greatly from the other countries in the project. One of the major costs is connected with the use and maintenance of technical equipments like snow mobiles, four wheelers, cars, etc. This equipment is part of the daily work for the reindeer owners in Alaska, and especially for the reindeer owners on Seward Peninsula. The pastures (Permit areas) are huge and according to the owners one needs these technical equipments to be able to follow the herds.

The situation on St. Paul differs since the island is relatively small, and there is strictly regulated off-road traffic. The herd has not been rounded up in the coral in 4 years, and most of the harvesting of the herd is done through hunting. No ordinary herding is done on St. Paul today.

The future profitability of the industry on the islands is connected to the assignment of pasture areas on the islands Umniak and Unalaska. The pasture on these islands has an estimated carrying capacity of 10-11.000 reindeer. For processing the meat slaughtering plants and docking facilities are required. The TDX corporations expects that the meat can be brought from these islands to St. Paul for value-adding production. The corporation has purchased a US marine wessel with a large freezer capacity in order to reduce the costs of transportation.

On Seward Peninsula the use of helicopters are used to collect the herds for a round-up twice a year. According to some of the reindeer owners the use of

helicopters is extremely expensive, but necessary to be able to collect the herds from the huge pasture areas.

## External Conditions

### Caribou

The greatest impact to the viability of the reindeer industry is the Western Arctic Caribou Herd (WACH). It is currently estimated to 440.000 animals, which might be an underestimation of the actual situation. The caribou migrate in the spring and fall between Norht Slope and Unalakleet. Thousands of reindeer have followed the caribou as they migrate though reindeer pastures on the Seward Peninsula. The herd is penetrating further and further into the peninsula, and the conflict with the permit areas is rapidly increasing.

Since 1991 six herds in the Eastern part of the Sewart Peninsula are wiped out with a loss estimated

at 9.000. Since 1999 five other herds near the interior of the Seward Peninsula are devastated with a loss estimated at over 4.000.

The main problem connected to the caribou herd is the problem with “run-off” from the domesticated reindeer herd. In a situation with a mix-up between domesticated reindeer and caribou, the reindeer will follow the caribou herd on its migration.

Several efforts to stop the mix-up between reindeer and caribou have been tested without results. The reindeer owners have tried to drive with snow mobiles forth and back ahead of the caribou herd in an effort to scare it away. They have succeeded to delay the movement of the herd into the permit areas, but after some hours away for refuling the snow mobile, the caribou herd has moved into the permit areas. They have also tried to use helicopters with the same results. The use of fencing is not an alternative because of the huge area under impact. It will be impossible to maintain such a fence in order to keep the caribou away.

In a effort to try to save the remaining reindeer at the peninsula, the reindeer are moved from the differ-



Road between Nome and Teller, Seward Peninsula

Photo © Johnny-Leo L.Jernsletten

ent permit areas into so-called “safe areas”. This means areas further to the west on the peninsula where the natural boundaries have so far kept the caribou from migrating. The move of the reindeer herds has to some extent been successful, but this operation raises important legal aspects because private owned reindeer are moved into the permit areas of other reindeer owners. The results are more grazing, trampling, and mix-up with the other reindeer in this permit area.

Loss of pasture is also a problem connected to the caribou herd. The economic value of the pasture resources throughout the peninsula is being devastated, and once depleted it will take many years to recover.

The reindeer herders and the RHA staff have learned, from the devastation to the reindeer industry, that it is imperative to know the movements of caribou during the time caribou are on the reindeer pastures. The RHA grants funds to purchase radio collars and monitor locations of both reindeer and caribou through tracking flights.

## Predators

On the islands predators are a non-existent problem for the reindeer industry. The project has not been able to collect information on the numbers of predators on Seward Peninsula. According to interviews with the owners, the predators tend to follow the migrating caribou herd into the reindeer pastures. When the caribou migrate out again, the predators often remain within the permit areas.

Thus, the impact of the predators represent an extra pressure on the industry on the Seward Peninsula.

## Access to market

The reindeer industry had its peak around 1928-30 when 2.500 tons of reindeer meat were shipped to markets in the lower 48 states. During this period slaughtering plants, underground storage tunnels and shipping facilities were constructed throughout the



Slaughtered Reindeer in Cold Storage.

Photo © Johnny-Leo L. Jernsletten

reindeer areas. This era ended in 1937. The reason given for this is:

“By 1929, the non-native, profit-driven Lomen Corporation asserted much influence over the industry. The Corporation's prominence, combined with a change from subsistence to profit-driven motives, prompted congressional investigations from 1927-1938. On September 1, 1937, Congress passed the Alaska Reindeer Act, which excluded non-native ownership of reindeer. All reindeer, range grazing rights, equipment and handling facilities were transferred to a government trust.”

The situation today is characterized by a decrease in number of reindeer and consequently a decrease in the production of reindeer meat shown in figure 4.

There is huge potential local market for reindeer meat within Alaska. The meat is perceived as clean, ecological, arctic food, and is demanded in the Alaskan restaurant market. There is also a great potential in the high-end restaurant market in the lower 48. In an interview the owner of an Alaska meat company emphasized that there is not enough reindeer meat on the Alaska market today, and in order to cover the demand for reindeer products, his company had to import meat from Canada. As long as the meat has undergone a veterinary control, the slaughtering facilities are authorized and the meat is of excellent quality, the market is willing to pay a high price for this product.

Alaska covers a huge area, and there are great distances from the production sites to different markets. Transport costs were mentioned in the interviews as one of the main reasons why the industry has had problems with profitability. It is just too expensive to bring the meat out to the market.

In addition to transport costs, access to different kinds of infrastructure like abattoirs and docking facilities on the islands are factors that prevent the industry from developing further. The potential for an increased market for reindeer meat and other products is great both within Alaska and in the lower 48 states. There is also a favorable response when it comes to price. This means that if these obstacles are overcome the reindeer industry could be of major importance for the future economic development in the local communities in the reindeer areas.

## National Legislation

The Reindeer Act of 1937 is the one-important act for Alaska, restricting ownership of reindeer to the native peoples of Alaska. The special provisions of the Reindeer Act gave Alaska Natives an opportunity to make a living and contribute to the well-being of rural Alaska.

In addition to the Reindeer Act of 1937 other regulations like the Alaska Native Claims Settlement Act of 1971 and the Alaska National Interest Lands Conservation Act of 1980 govern the relationship between the U.S. Department of the Interior and the reindeer industry.

The federal regulations stemming from the Reindeer Act, authorize or require:

- Establishment of a reindeer industry
- Secretary of Interior to acquire reindeer
- Non-Alaska Natives to file claims of title
- Establishment of a revolving loan fund
- Secretary of Interior to distribute reindeer, property, profits to Natives
- Administrative powers to be granted to Natives organizations
- Secretary to promulgate rules and regulations
- Natives to be appointed to administer the industry
- Defined “Natives of Alaska”
- Appropriation of funds to carry out the Act.

The rights restricting ownership of reindeer to the native peoples of Alaska is now under pressure. A person has imported living reindeer from Canada to use the meat for sale to the high-end restaurant market in the lower 48. According to the last verdict in the court system of Alaska, this is a legal act because the Reindeer Act of 1937 only grants the Alaska Natives exclusive right to reindeer husbandry of within the State of Alaska, and does not apply to imported reindeer.

To secure the future of the reindeer industry as a foundation for economic activity in the local communities in the reindeer areas, it is important that an agreement is made between the indigenous reindeer

owners organisations and the government concerning the continuation of the exclusivity to conduct reindeer husbandry for the Native peoples of Alaska.

## Summary

The reindeer industry in Alaska, and especially the industry at Seward Peninsula, is facing major problems.

The growing caribou herd represents a major threat to the reindeer industry in Alaska. The caribou has a devastating impact on the pasture areas; they attract predators when they migrate into the pasture areas; and the caribou bring the domesticated reindeer along when they migrate through the permit areas.

There is a huge potential in the market for reindeer meat and other products both within Alaska and in

the lower 48. To be able to develop this market the industry depends on access to abattoirs and other essential infrastructure. But the main disadvantage for the development of the industry is the high transport costs. Concerning the size of the potential market for reindeer products, the profitability of the industry could be increased if the above mentioned problems are solved.

The reindeer industry on the islands of Alaska have several advantages that can be utilized. There is no problem with caribou or predators, but to be able to realise the potential the industry needs proper infrastructure like abattoirs, transport and docking facilities.

The Reindeer Act from 1937 is under threat, and the securing of these rights will give the native peoples of Alaska an opportunity to make a living out of reindeer husbandry within their areas.

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Scenery from Southern Saami Area, Røros, Norway  
Photo © Johnny-Leo L. Jernsletten

# Reindeer Husbandry in Norway

## Introduction

This chapter will focus on the reindeer husbandry in Norway. Reindeer are herded over an area of approximately 140.000 square kilometres, or about 40% of Norway. All reindeer herding activity in Norway is regulated by the “Norwegian Reindeer Herding Act”. The paragraph securing reindeer herding as an exclusive right for the Saami people in Norway is of profound importance. This means that only Saami - and Saami of reindeer herding families - are entitled to practise reindeer husbandry. There is one exception from this rule, and that is a limited reindeer herding activity outside the main saami pasture area, which consists of about 10.000 animals where both Saami and Norwegians are engaged in reindeer herding. This is named “Concession Areas”.

The part “External Conditions” in this chapter differs in structure from the same parts in the other chapters. This is because the parts “Loss of Pastures”, “Small Game Hunting” and “Market and Value Added

Production” contains a general discussion about the conditions in Norway, Sweden and Finland. The basic challenges with loss of pasture, small game hunting, market and requirements for abattoir are almost identical between these countries, and to avoid a repetition of the argument, the general presentation is done in this chapter. Special challenges or conditions in the different countries will be discussed during the presentation of each country.

## Collected Data

The background information for the “Economy in reindeer husbandry” is based on the yearly reports produced by the Norwegian Reindeer Husbandry Administration. Data are collected once a year through the official reindeer owners report, from the reindeer owners’ tax form and reports given by the slaughtering houses etc.

There is extensive variation between the different reindeer pasture areas, and even between different husbandry units inside one district. These differences are not reflected in the figures which focus on a national level. When the differences between pasture areas are important for the presentation they will be annotated.

## National Management of Reindeer Husbandry

### Organisation

The management system is divided into several administrative levels. The following text is a short presentation of the reindeer herding areas in Norway and the management system of the Norwegian authorities. The system is similar to the other Nordic countries, but there are some distinctive characteristics.

#### Reindeer Pasture Areas

Norway consist of 6 “Reindeer Pasture Areas” - East Finnmark, West Finnmark, Troms, Nordland, North Trøndelag and South Trøndelag/Hedmark.

The main reindeer pasture areas are divided into 90 “Reindeer Pasture Districts” with 78 summer- and year around districts and 12 autumn-, winter- and “convention” districts. In addition there are several “Con-

cession Areas” outside the main pasture areas, where both Saami and Norwegians are reindeer owners.

#### State Management System

The official presentation of the reindeer husbandry management system in Norway could be described schematically according to Figure 20.

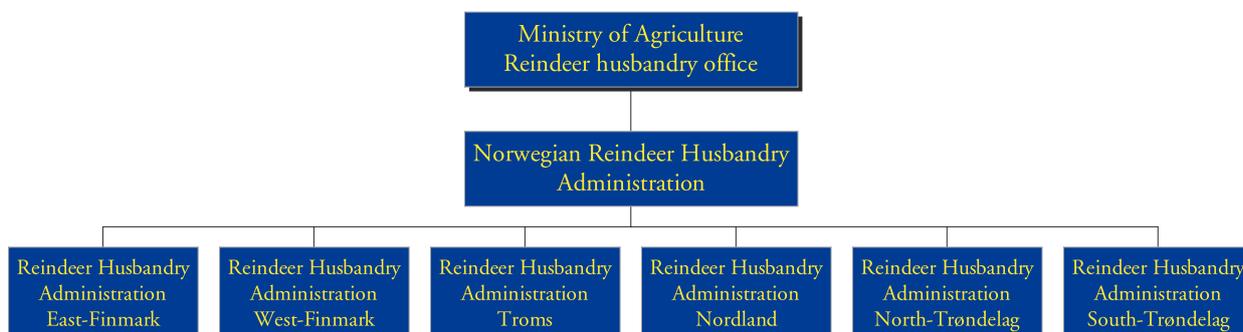
The highest level is The Royal Ministry of Agriculture. Inside the Ministry the Reindeer husbandry office is responsible for the day-to-day activity and is executive officer for the government. Most of the decisions concerning the reindeer husbandry is delegated to “The Norwegian Reindeer Husbandry Board”, but the Ministry of Agriculture is responsible for the following:

- The division of pasture areas
- The question concerning the entitlement to reindeer husbandry
- The permission to practise reindeer husbandry outside the main reindeer pasture area
- The approval of fences and installation

#### The Norwegian Reindeer Husbandry Board

The Norwegian Reindeer Husbandry Board consist of 7 members. 4 members are appointed by the Ministry of Agriculture and 3 members are appointed by the Saami Parliament. The board has the national responsibility for the management of reindeer husbandry, and it is both an advisory- and a management board.

Figure 1: National Management of the Norwegian Reindeer Husbandry



Some of the main responsibilities of the board are:

- The division of pasture areas into districts
- The number of reindeer in each district
- Grazing time and grazing areas
- Forced measures when agreements are broken
- The permission to build huts for reindeer herders
- Sale of unmarked animals
- Yearly report about Norwegian reindeer husbandry
- Approval of concession for reindeer husbandry outside the reindeer pasture area

#### *Area Board*

As mentioned above, Norway consists of 6 pasture areas. Each of the pasture areas is managed by an area board of 5 or 7 members elected by the Saami Parliament and the County Council (Fylkestinget). The appointed period is 4 years.

Every reindeer area has one office subject to the Norwegian Reindeer Husbandry Administration (see below) and the reindeer agronomist functions as secretary for the area board.

The board is a body entitled to comment on all major plans developed by the different municipalities or local governments, i.e. area development plans. This could be plans concerning building of new roads, infrastructure or industry that could be in conflict with reindeer husbandry.

Some of the responsibilities of the area board are:

- contribute to fulfilling the national goals of reindeer husbandry
- decide on grazing time and divide the different grazing areas into grazing zones connected to all the Siidas in the area
- consider new applications for establishment of reindeer husbandry
- consider applications from the reindeer owners to move the herd from one district to another inside the reindeer area

#### *District Committee*

Each of the districts inside one area is managed by a district committee of 3 members elected from the

members of the district for a 2 years period. The committee represents the district and is heading the day-to-day activity.

Some of the responsibilities of the district committee are:

- To organise and secure that every animal is marked with the earmark of its owner
- To organise separation of different herds
- To organise a reindeer counting
- To control the different earmarks
- Removal of animals from illegal grazing area
- Development of a district management plan

#### *The Norwegian Reindeer Husbandry Administration*

The Norwegian reindeer husbandry Administration is part of the Ministry of Agriculture. It is the Ministry expert body and the main office is located to Alta in Finnmark County with offices in all 6 reindeer pasture areas - East Finnmark (Karasjok), West-Finnmark (Kautokeino), Troms (Rundhaug), Nordland (Fauske), North-Trøndelag (Levanger) and South-Trøndelag (Røros).

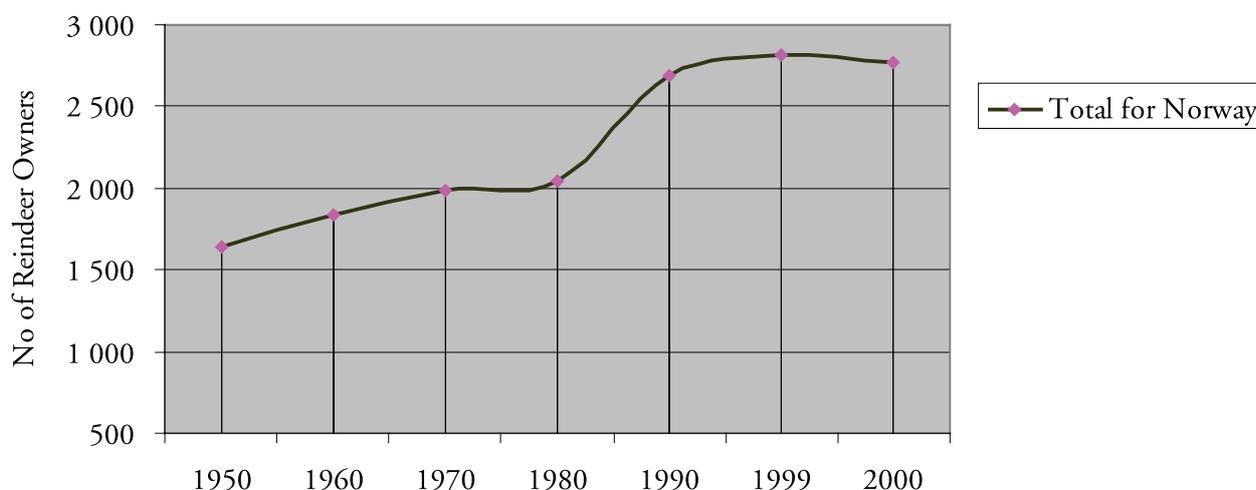
The main tasks for the Norwegian Reindeer Husbandry Administration is:

- Secretariat for:
  - The Norwegian Reindeer Husbandry Board
  - The Reindeer Development Fund
  - The Economic Committee
  - Area boards
  - Area earmark committee
- Implementation of central management policy determined by the Reindeer Husbandry Agreement and the Reindeer Husbandry Act
- Resource management and control
- Reindeer pasture management - protection of reindeer pasture
- Advisory and information service for reindeer herders and others
- Maintenance of reindeer fences on the border between Norway and Sweden, Finland and Russia.

## Husbandry Units (Reindeer Owners) and Earmarks

According to the Norwegian management system the “husbandry unit” (driftsenhet) is the basis of the reindeer husbandry organisation. This is a form of “licence” given to an individual from the area board where the new unit wants to establish itself. The licence entitles

Figure 2: The Development in Number of Reindeer Owners in Norway, 1950 - 2000



a person to start with reindeer husbandry inside one designated area, and the area board decides which district the new unit will belong to.

In legal terms a unit consist of one herd managed by one person, or the spouses together, if both persons have their own earmarks in the herd. If both persons have a husbandry unit before they are married, they can keep their units also after the marriage. This means that legally it is one unit, but in the official statistics it is recorded as two separated units. The change in the registration system is part of the explanation to the dramatic increase in reindeer owners at the beginning of the 1980's. Figure 2 shows the development of reindeer owners in Norway in the period 1950-2000.

### Siida

The concept of “husbandry unit” reflects the Norwegian management system of the reindeer husbandry,

but the Saami themselves have traditionally organised the reindeer husbandry through the “Siida-system”. The “Siida” is an ancient Saami community system within a designated area. It could also be defined as a working partnership where the members had individual rights to resources but helped each other with the management of the herds, the hunting and fishing. The community could consist of several families and their reindeer herds. The siida was not just a working partnership, but also a central basis for the traditional use of the grazing areas.

As we will see later on in this chapter, a commission working with a review of the Law on Reindeer Husbandry of 9th June 1978, wanted to remove the term “husbandry unit” and re-establish the concept of the “Siida” with the following argument:

“The committee recommends that the current arrangement that uses husbandry units should cease, and be replaced with a siida share, see also

article 9.3 below and draft law §§4-2 – 4-4. In the opinion of the committee there are several weak points in the current system of husbandry units. Among other things the husbandry units system is isolated from the working co-operation that makes up the siida.”

## Economy in Norwegian Reindeer Husbandry

### Introduction

Several of the reindeer owners interviewed mentioned the use of “husbandry unit” as a way of creating distance to the old Saami siida system. It is not the practical problems connected to the use, but it is more seen as a symbolic violence towards the industry. The use of this concept from the Norwegian authorities indicates how far away they are from the reindeer reality, and it underlines the distance between the authorities and the reindeer owners.

This part of the chapter will give a short introduction to the economy connected to reindeer husbandry. The goal for the economic part of the chapter is to try to give a general picture of the economic situation in the industry today. The general questions asked in the beginning of the project were these: How important is the income from the industry for the family? What kind of incomes are important to the industry? What are the costs connected to the industry?

Figure 3: Total Number of Reindeer in Norway 1992 - 2001

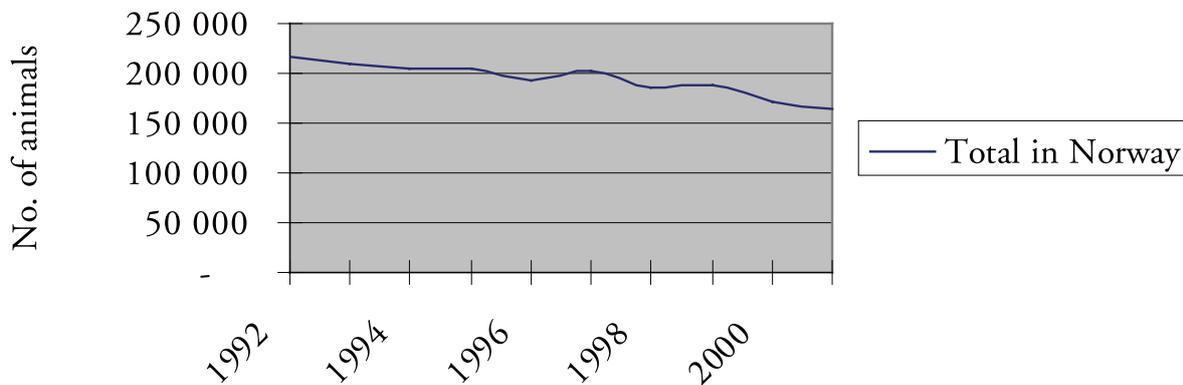
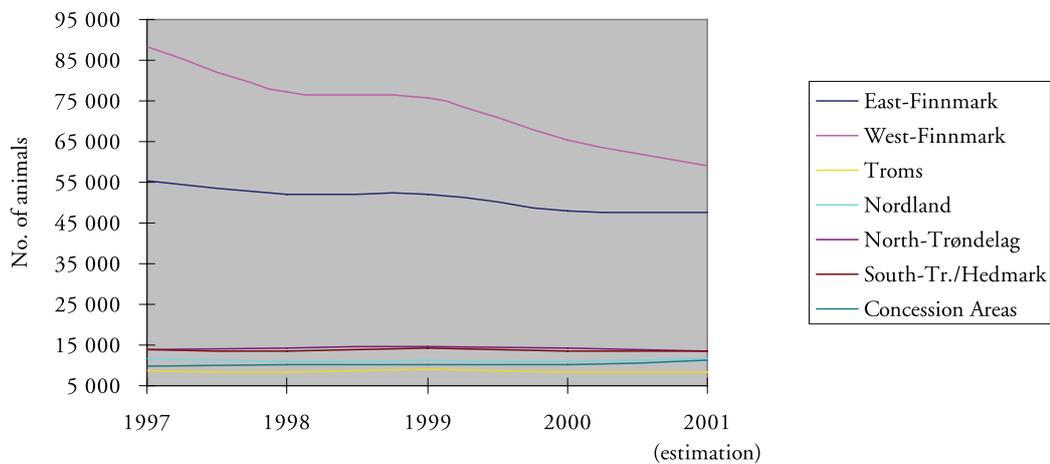


Figure 4: Number of Reindeer in Norway Divided in all Reindeer Areas, 1997 - 2001



## Size of the herds

To be able to answer the questions mention in the introduction it is important first to look at the development of the total number of reindeer in Norway during the last 10 years. The number of animals reflects some of the basis for the economic situation in each country. Figure 12 and figure 13 give an overview of the development in number of reindeer in Norway 1992-2001.

As the figure indicates, the number of reindeer in Norway has decreased from around 218.000 reindeer in 1992 and down to 165.000 in 2001. But the reduction is not equally shared between all the pasture areas. A closer look into the statistics where the number of reindeer is divided between the six pasture areas, is shown in Figure 4.

According to this figure the main reduction is related to two pasture areas - East and West-Finnmark. The largest reduction is in West-Finnmark, where the reduction over the last three years is 33%.

What is the reasons for this trend? The explanation to this is complex, but some important factors could be mentioned. The reduction of reindeer, especially in Finnmark, is closely connected to the national

management working plan for a reduction of reindeer in Finnmark county. It has been a public debate about the number of reindeer in Finnmark since the late 1980's, and the government's view has been that there are too many reindeer, and in order to save the pastures, the number of animals must down. It has been a long process and the Norwegian Reindeer Husbandry Board has in January 2002 put a new plan for the reductions into action with the highest allowable number of reindeer in each district in west-Finnmark. According to the plan, the decrease in number of animals will be fulfilled in April 2005. A second explanation for such a decrease in the number of animals is a growing number of predators, and we will return to this point later in the chapter. A third explanation to this could be several severe winters in Finnmark that have made the grazing conditions very difficult for the animals.

## Distribution of Income in the Family

Reindeer husbandry has been an important part of the Saami history. Although only a small percentage of the Saami population today is involved in reindeer

Figure 5: Distribution of Income to an Average Husbandry Unit in Different Reindeer Areas, 2000

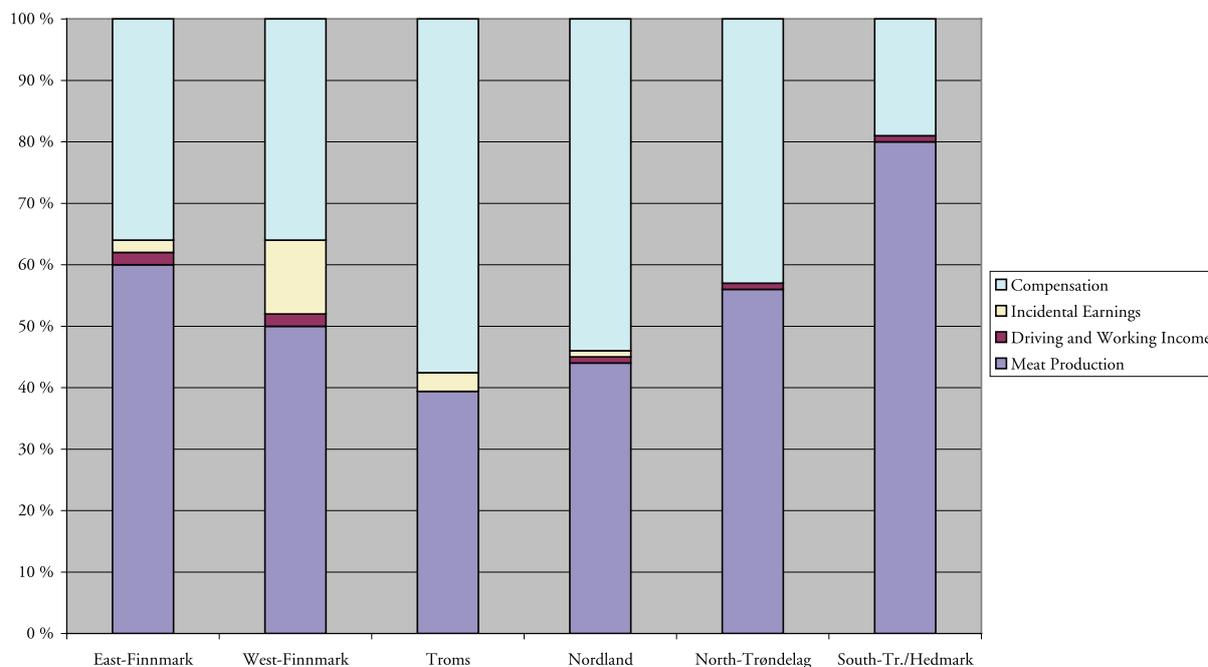
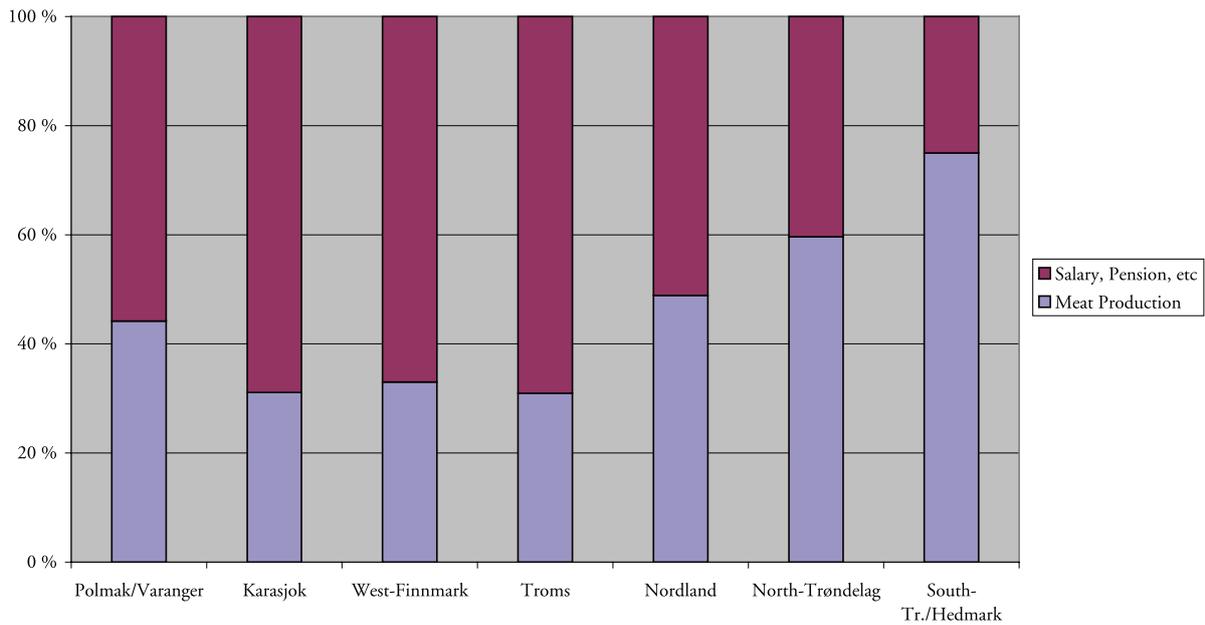


Figure 6: Distribution of Income, Meat Production and Salary, 2000



husbandry, it is still important for the Saami society as one of the common symbols of the culture. The importance of reindeer is reflected in their central role in many stories and fairy-tales, activities connected to reindeer herding is part of the childrens play, hides, furs and horns are used in handicrafts and clothing etc.

But how important is the reindeer as an economic income for the reindeer families today? If we focus on a national level, the answer would be that income from meat production is important for each husbandry unit. Figure 24 shows the average distribution of income for a Saami reindeer husbandry unit in different reindeer areas.



Reindeer in Cold Storage at Stensaas, Røros, Norway  
 Photo © Johnny-Leo L. Jernsletten

The figure 5 gives a good indication on the distribution of income inside one average husbandry unit in different areas of Norway. We can see that meat production brings more than 50% of the income to the owners in East- and West-Finmark, North-Trøndelag and South-Trøndelag and Hedmark. It is only in Troms and Nordland that the meat production makes up less than 50% of the income for the owner.

Most reindeer families have several incomes. If we look upon the distribution of income between reindeer meat and other incomes - like salary, pen-

sion etc., the picture will change. Figure 6 shows the distribution of an average income in a reindeer family in Norway.

The figure shows that only in Nordland, North-Trøndelag and South-Trøndelag/Hedmark income from meat production make up more than 50% of the families' total income. In all other areas the income from meat production counts for less than 50%, and even down to 30% of the families' income. If we add subsidies and compensation for loss of animals the picture will change. In this case the income from the

Figure 7: Value of Meat Production in Norway, 1996 - 2000

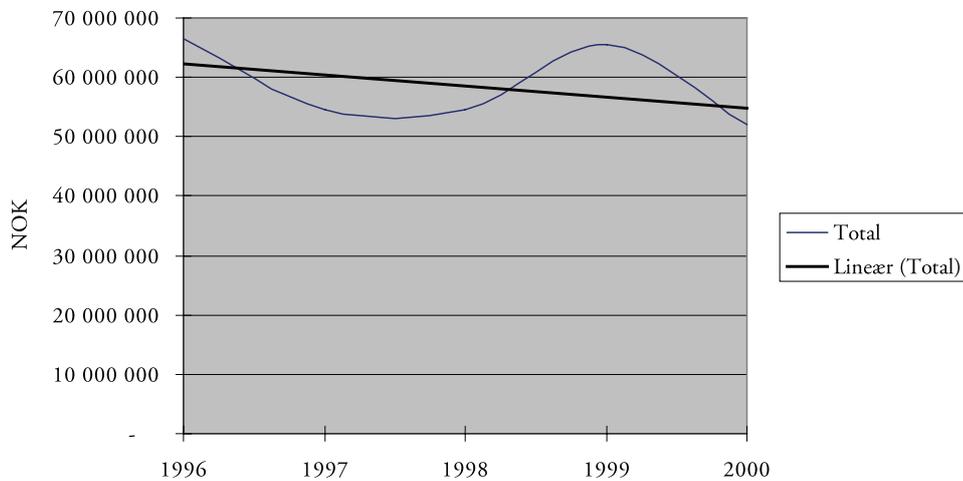


Figure 8: Value of the Meat Production, All Reindeer Areas, 1996 - 2000

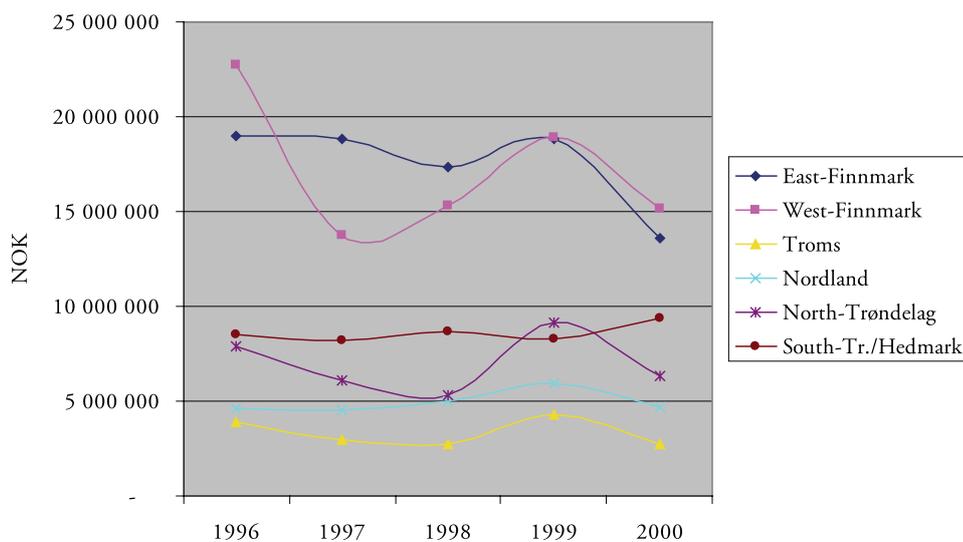
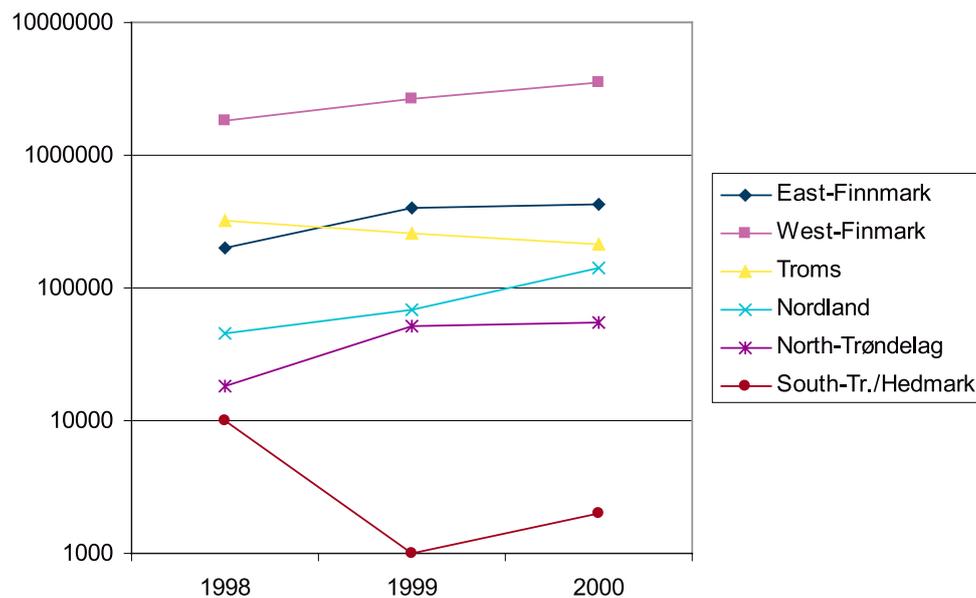


Figure 9: Income from Handycraft/Duodji 1998 - 2000



industry is in average more than the income from outside the industry. It is worth noticing that the figures will be affected by the level of wages or other income of the spouses as well as the general profitability in the reindeer industry.

## Income connected to Reindeer Husbandry Units

With a closer look at the distribution of income in an average husbandry unit and in a reindeer family in Norway, the general impression is that income from outside the industry is important. In the following we will take a closer look on what kinds of incomes the husbandry unit has during a year.

### Meat Production

Meat production is the most important income for the owner of a herd. The quantity and quality of the meat is an important indication on how the business is going and how the economy will be. But at the same time, it could be an indicator on your "reindeer luck".

The number of reindeer and the production of meat are related. When we experience a decrease in the total number of reindeer, it is not surprising that the total value of meat production also shows a falling trend. Figure 7 shows the development in meat production in Norway between 1996 and 2000. The

figure clearly indicates a downward trend from 68 millions in 1996 down to 52 millions in 2000.

This is the general picture in Norway if we collect information from all reindeer areas and put them together. If we look into the different areas, the picture will be as shown in Figure 8.

All pasture areas in Norway, except Finnmark show a stable situation in this period. Finnmark has a decrease in the meat production and the change is from 22 millions in 1996 and down to 14 millions in 2000. It is difficult to give an exact explanation to this reduction, but several severe winters (especially in 1997), a high grazing pressure over several years, and an increase in the number of predators, are all important factors.

### Handycraft/Duodji and fishing/berrypicking

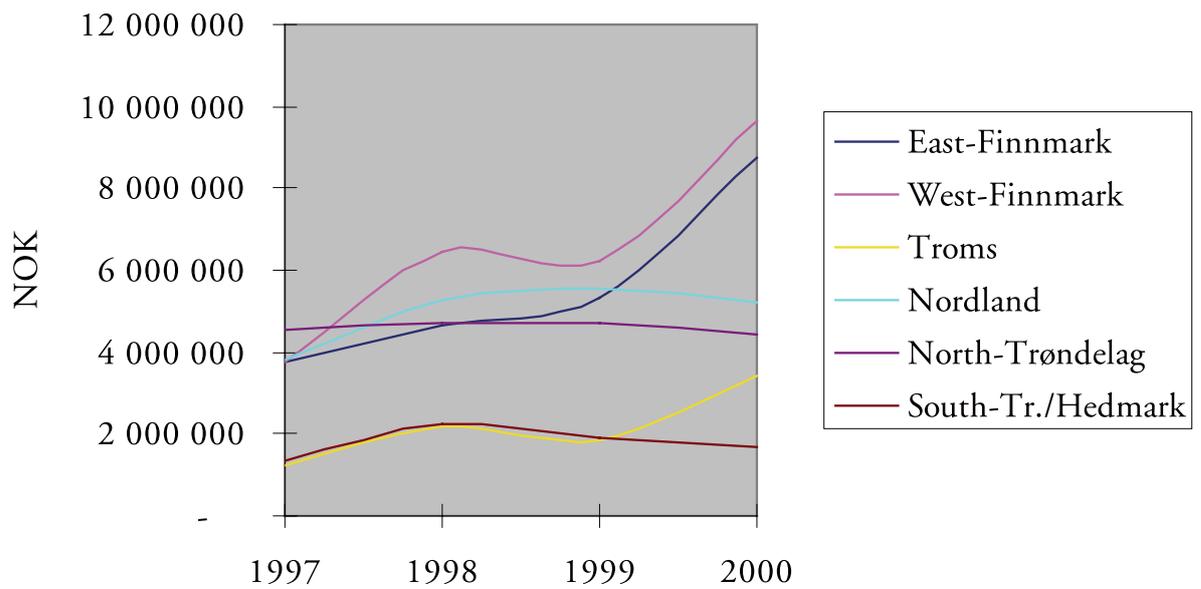
Additional earning through handicraft and fishing/hunting is not a very important income to the average husbandry unit in Norway. The situation in West-Finmark, however, is different. Here the average income from additional earning is 12% of the total income to an average unit. This is also the area where the economic impacts from tourist is largest in Finnmark County. In all other areas additional earnings are almost absent.

It is important to note that the scale of the figure 9 is logarithmic with the biggest increase at the top of the scale. This gives West-Finmark a considerable increase in income compared to i.e. Karasjok despite



Photo © Johnny-Leo L. Jernsletten

Figure 10: Compensation for Loss of Reindeer - All Pasture Areas 1997 - 2000



that the visual appearance could give another impression. If we break the figure down to husbandry units the difference in income is even more noticeable: an average income from additional earnings for a husbandry unit in West-Finnmark is according to this figure NOK 15.000,-, but the income for a husbandry unit in North-Trøndelag is NOK 1.500,- ten times less.

**Compensations**

In the Norwegian system the compensations are granted for: a) loss of reindeer to predators, severe grazing conditions and reindeer killed by train and b) loss of pastures.

Figure 10 gives an impression of the dimension of the compensation paid out to the reindeer husbandry due to the impact of predators, loss connected to severe grazing conditions (hard winters etc) and reindeer killed by train. Three pasture areas - Nordland, North-Trøndelag and South-Trøndelag/Hedmark - show no growth in the compensations, while East and West-Finnmark and Troms have a clear growth in the compensations for loss of reindeer.

According to the Norwegian Reindeer Husbandry Administration, 96% of the losses of reindeer is connected to predators, and 4% to severe grazing conditions and trains.

Almost all compensation is paid from the “Directorate for Nature Management” which is in charge of compensation due to loss of reindeer to predators. Only a small part of the compensations comes from the “Norwegian State Railway”e.i reindeer killed by train.

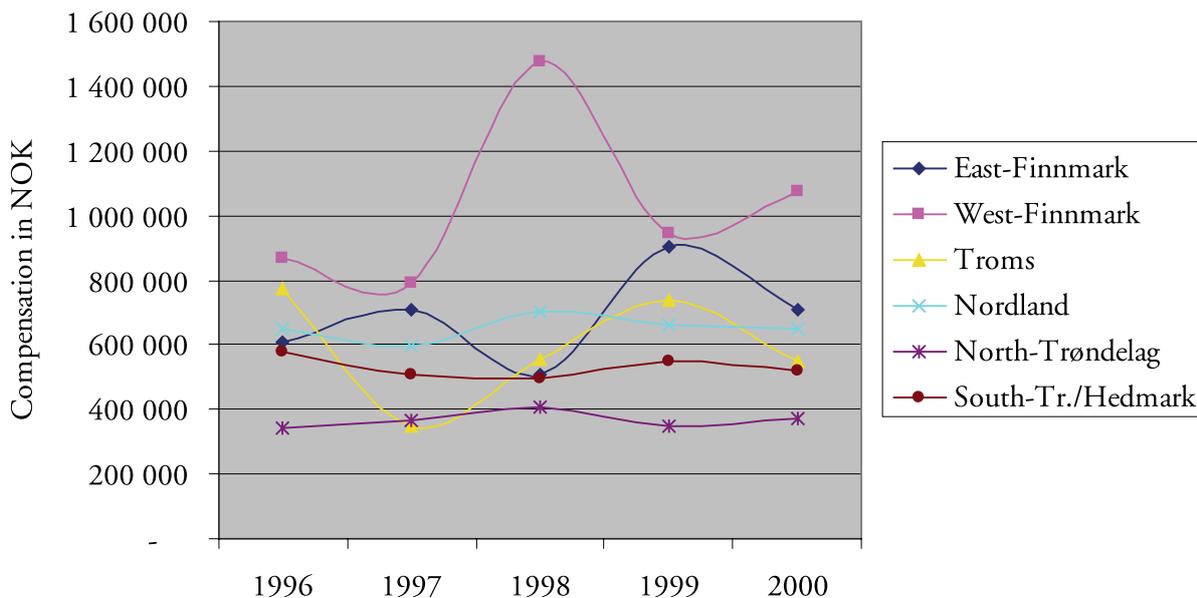
The increase in compensation between 1999 and 2000 is on 25%, but it is important to note that the reasons for this is a) increase in number of reindeer compensated for and b) increase in the level of compensation for each reindeer.

**Loss of pastures**

The different reindeer districts are entited to compensation for loss of pastures. This compensation can be for development of new infrastructure, like a new road, construction of hydro-power dams, different kinds of constructions, power lines etc. The compensations can be a one time compensation, or it can be a yearly compensation to the district. Figure 11 shows the development in the compensation for loss of pastures between 1996 and 2000.

The level of the compensation for loss of pastures is stable and there is no negative development according to the official statistic. This figure gives a different picture of the situation compared with all the

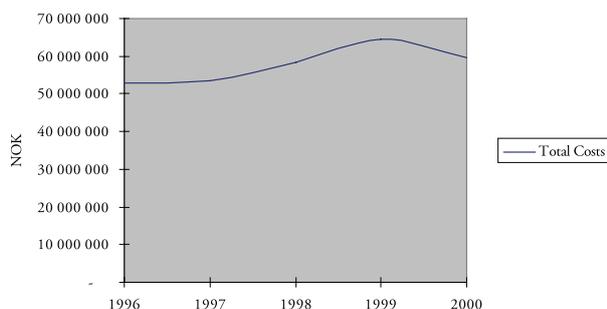
Figure 11: Compensation for Loss of Pasture 1996 - 2000



interviews made in the project. As we will see later in the chapter, loss of pastures is one of the most serious treaths towards the industry.

One explanation to this figure can be the way the compensations are designed, and what kind of loss

**Figure 12: Total Cost in Norwegian Reindeer Husbandry, 1996 - 2000**



the compensation will cover. An illustration to this point is the case of compensation for the building of a power line through one reindeer district. The district got compensation for loss of pasture, but the loss was calculated as the space under each pillar. This space calculated together did not give much compensation, but the power line made a huge impact on how the animals are using the grazing area.

## Cost connected to Reindeer Husbandry

We have looked upon different sources of income in the reindeer husbandry in Norway, and we will now change the focus towards the costs connected to the industry. First of all it is important to underline that the statistics which all the figures are based upon, give an average impression where the internal variation is not shown. But they will give us indications and trends in the development of the industry.

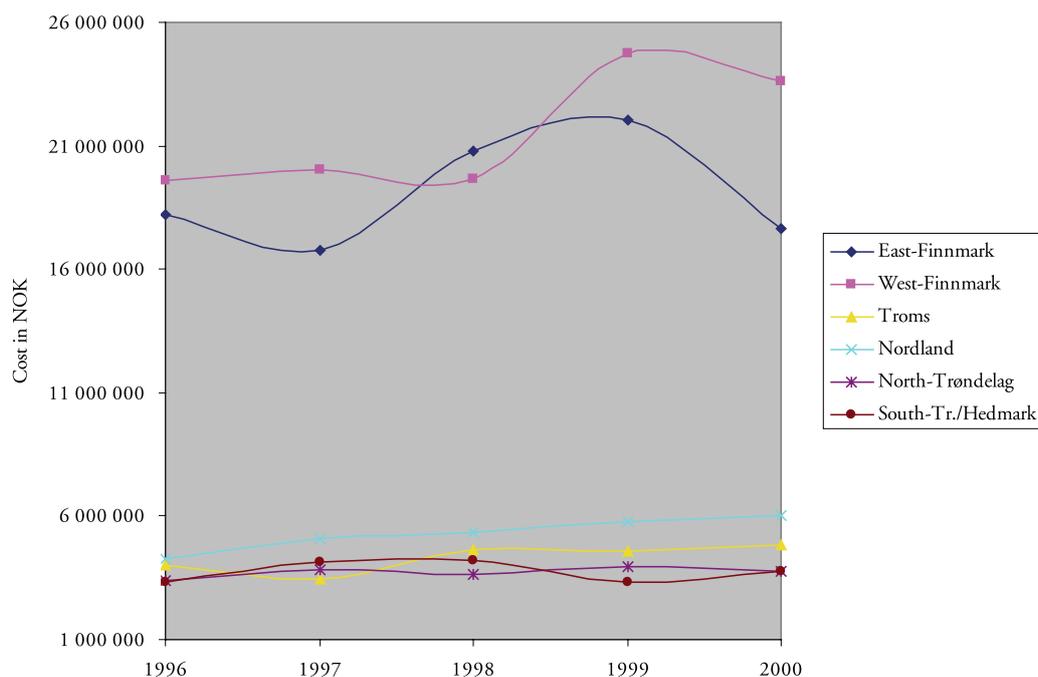
Figure 12 shows the development in the total costs in reindeer husbandry in Norway in the period 1996-2000. As the figure indicates, there was a top in the costs around 1999, and in 2000 the trend is a decrease in the total costs. From 1999 to 2000 the decrease was 7.54%.

What is the situation for the different reindeer areas in Norway. Are there significant differences between the areas? Figure 13 uses the same statistic information as figure 12, but broken down into the different pasture areas.

This figure shows that East-Finnmark has the largest decrease in costs between 1999 and 2000, on 19,2%. North-Trøndelag has a decrease on 5% followed by West-Finnmark on 4,7%. The other areas have a slight increase in the cost at the same period.

The costs included in the figure is the total cost for the reindeer husbandry units. This means costs con-

**Figure 13: Cost Divided in All Pasture Areas, 1996 - 2000**



nected with the management of the husbandry unit - transport, artificial feeding, traveling, equipment, mechanical equipment, power and heating, telephone, insurance, dogs etc. In an effort to try to establish an understanding of the economic situation in the industry, it is important to know the distribution of the costs. To make the presentation a little easier to read, we have put together some examples in Figure 14.

The figure gives an interesting and important impression of the situation - over 50% of the costs are related to mechanical equipments - and it applies to all reindeer areas. If we include the entries "Equipment", "Transport", and "Construction" the costs reach up to 80-90% of the total costs.

The figure shows the total income and the total costs in all areas for an average reindeer husbandry unit in 2000. The income includes driving and labour income, additional earnings, compensations, and the national subsidies for the unit. The difference between income and cost makes the living for the reindeer owner. The figure clearly demonstrate that almost all the reindeer units in Norway have an income far below the average income in Norway. This is of course not a pleasant situation for the industry.

## External Conditions

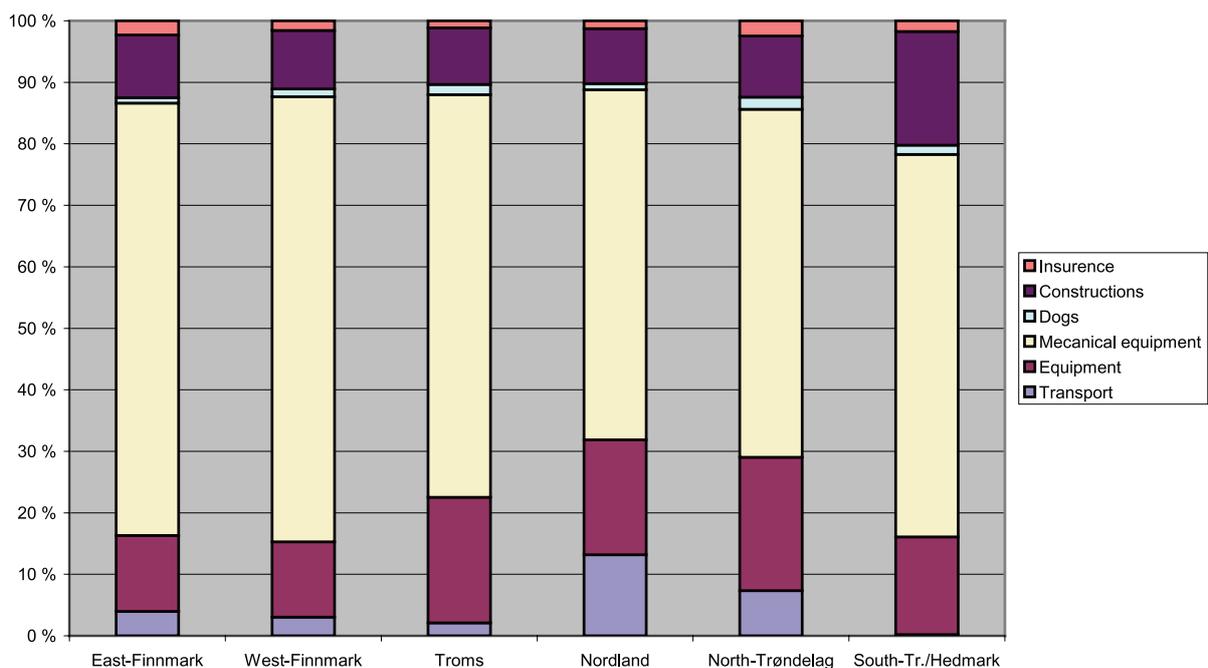
### Introduction

This part of the chapter will focus on the external conditions that affect reindeer husbandry. We know that the quality of the pastures and the number of reindeer is important, and we also know that a healthy economy with a low input from the government is important for a sustainable reindeer husbandry. But how do the activities in the society affect on the reindeer industry?

For practising reindeer husbandry there is a need for quite extensive and diverse pastures. As mentioned in "Introduction" around 40% of the land area in Norway is used as reindeer pasture. An industry with such an extension must necessarily come into conflicts with other industries, the question is how such conflicts are handled by the parties involved.

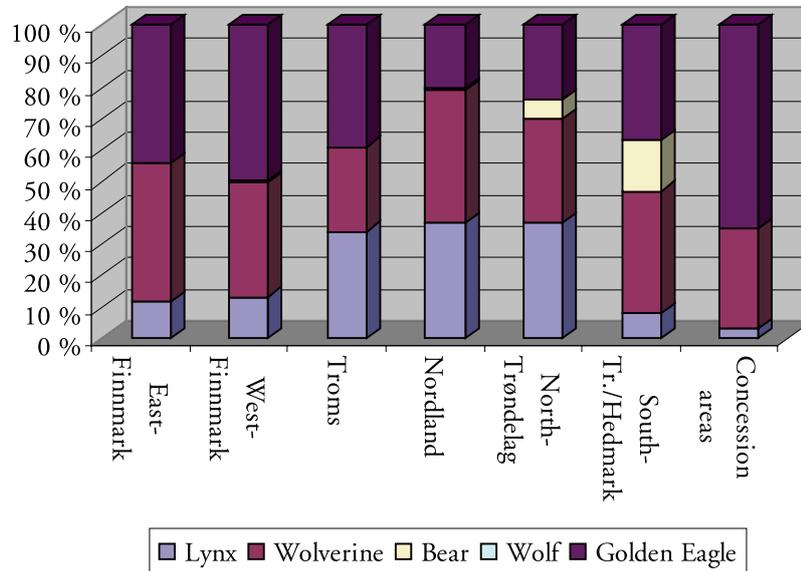
There is not much statistical data available on conflicts with other industries, and to be able to get information about this, our project has conducted a serie of interviews with reindeer owners, bureaucrats

Figure 14: Different Costs in Reindeer Husbandry, 2000



and researchers on this theme. Our primary goal has been to try to understand the situation of the reindeer owners and the kind of problems they emphasize. The

Figure 15: Claimed Losses to Different Predators, 2000 - 2001



following text is based on the results from the interviews. It is also a reflection of the ongoing debates both in the herding communities and inside the universities.

### Predators

In all the interviews people were asked to name three main problems for his/her area that they would like to

Figure 16: Claimed Losses of Reindeer, Divided Between Different Causes, 2000 - 2001

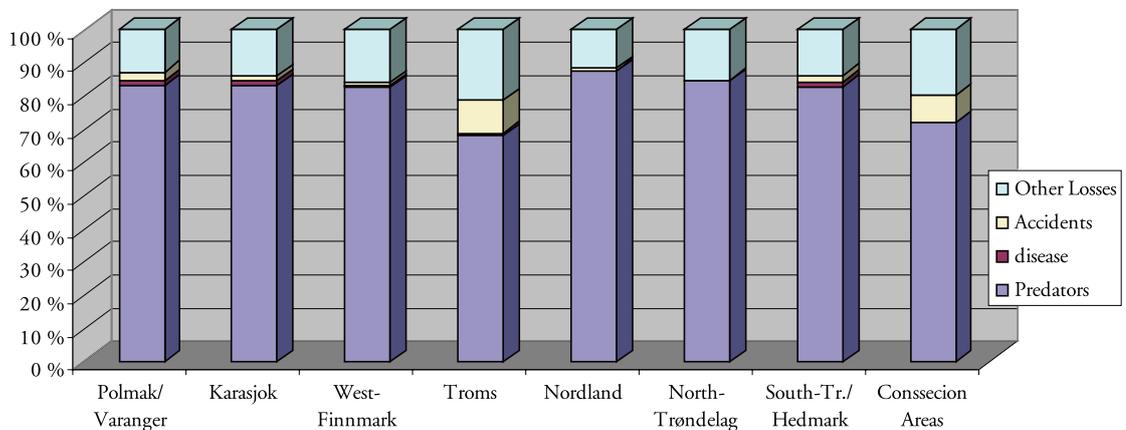


Figure 17: Total Claimed Losses to Predators, 1997 - 2001

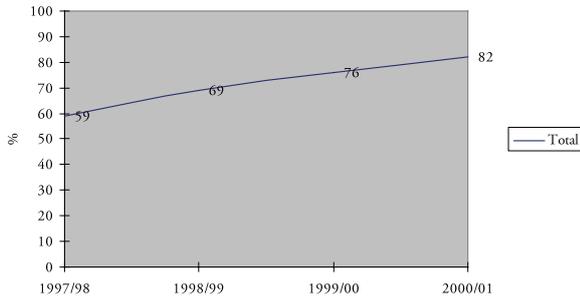


Figure 19: Difference Between Paid Compensations and Total Claimed Losses, 1996 - 2000

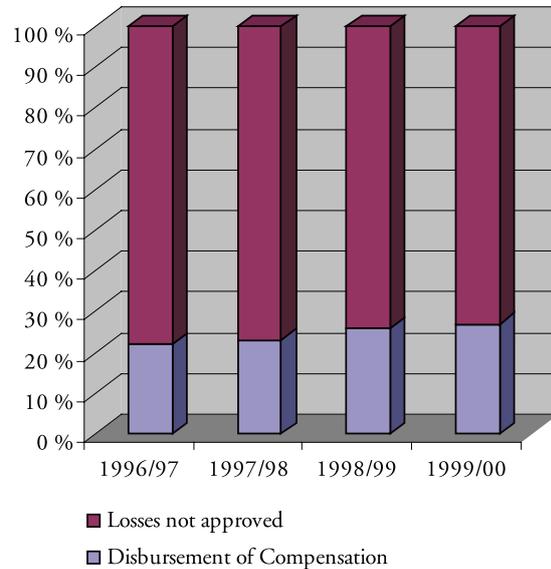
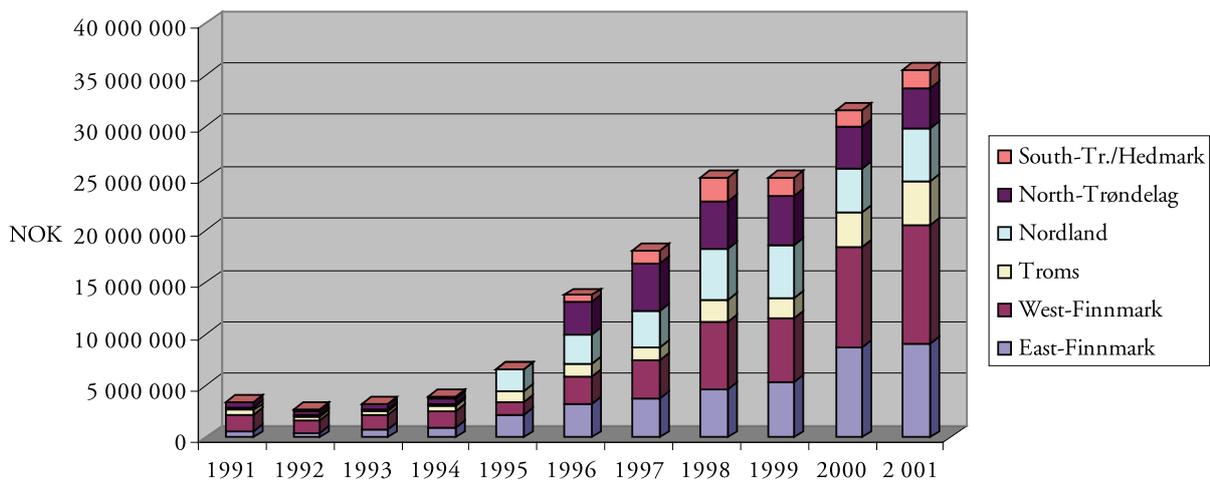


Figure 18: Compensation for Losses of Reindeer to Predators, 1991 - 2001



get solved. Almost every reindeer owner named predators as one of these three problems. This goes for all interviews in all the countries within this project.

The responses from the Saami reindeer owners in Norway were the same. The general impression is that predators are a major concern in reindeer husbandry in Norway, and according to the reindeer owners opinion the problem is increasing. Is this view supported by the official statistics in Norway?

Before we look into the official statistics concerning predators, one important point about the background material of the figures should be mentioned. The fig-

ures are based on the reports from each reindeer owner where they state how many reindeer they have lost to predators. This figure is named "claimed losses to predators", but the number of animals confirmed by the authorities is much lower, and this is also reflected in the statistics. An average of 80% of the claimed losses each year is not approved by the government. Thus, according to the reindeer owners, they do not receive compensation for the actual losses. With the data available, it is difficult to know the exact number of reindeer killed by predators, but the point we want to make is that the discrepancy between the claimed



Mountain Road Between Røros and Trondheim, Norway

Photo © Johnny-Leo L. Jernsletten

losses and the number compensated for, is compellingly large. The differences can be seen as an indication that there is a mistrust between the government and the reindeer owners, concerning the number of reindeer killed by predators. It also indicates that the system of approval of claimed losses is not well suited for handling the conflicts between predators and reindeer herds.

Figure 15 gives an overview of the impacts of different predators on reindeer herds in Norway according to the claimed losses.

The figure shows that wolverine and golden eagle are the predators with most extensive impact on the herds in all areas. Lynx is ranked as third with the largest impact in Troms, Nordland and North-Trøndelag.

Predators are not the only reasons for loss of reindeer. Losses can be divided into four different categories:

- Predators
- Illness/diseases
- Accidents

- Other losses (severe grazing condition, unborn calves etc)

Figure 16 gives an indication of the ratio between different categories of claimed losses. The figure clearly shows that the main reason given for loss of reindeer is due to predators. This is also confirmed by the results from a research programme carried out by NINA in 1994/95 on predators in the county of North-Trøndelag, which shows that in a normal year predators were responsible for 64-75% of the total losses, which corresponds to a 12-13% loss of the total number of reindeer in this pasture area.

The figures in the sub-chapter on economy indicated a growth in the amount of the compensation granted for loss of reindeer to predators. Figure 17 shows the development of the claimed losses to predators in the period 1997-2001 compared with the total loss of reindeer. There is variation between the areas, but the general impression is a steady increase in losses to predators for all areas from 59% in 1997 to 82% in 2001. This trend is reflected in figure 18 which shows the actual paid compensations for losses to predators between 1992 and 2000.



Winter Landscape at -42 Degree Celcius, Northern Sápmi.  
Photo © Johhny-Leo L. Jernsletten

## Loss of Pasture in Norway, Sweden and Finland

Reindeer are the only animal which can utilize the lichen resources on the outlying field. In addition, it is the only animal that could utilize lichen as a food resource. To secure sufficient food supply for the reindeer the industry is dependent on access to huge and undisturbed land/grazing areas. A pasture area is not a homogeneous landscape, but consist of many important features and characteristics changing in accordance to season and activity performed. Each husbandry unit needs a summer pasture with access to green grass and different herb plants. The summer pasture is a key factor for the growth of the animals. Good summer pasture gives a head start to survive a severe winter. The herd also needs good winter pasture, characterised with little snow cover and good access to lichen. During spring time - normally in May - the animals need a good calving area where the female reindeer could get cover from the wind and predators. To minimize the risk for human disturbance is also of great importance. All these different pasture areas must have easy access with minimal obstruction for the herd.

Access to pasture areas which comply with all these conditions is an increasing problem/challenge. Loss of pasture was one of the conditions that almost every reindeer owner emphasised as an important problem. It is in fact one of the conditions almost all the reindeer owners/herders in Norway, Sweden, Finland, Russia and Alaska mentioned during the interviews. There will be no reindeer husbandry without sufficient pastures.

The only impression of the situation in Norway due to loss of pastures is given through Figure 11. The figure describes the compensation to the different districts for loss of pastures, but only for losses the district is entitled to according to Norwegian law.

The Norwegian Reindeer Husbandry Administration expresses concern over the development in Norway. In the latest report "Ressursregnskap for reindriftsnæringen" for the period of April 1 2000 to Mars 31 2001 it is stated:

Development and disturbance often results in loss of pasture or at least reduced use of the pastures close to this disturbance.[...] The reindeer is weakened regarding the condition when the

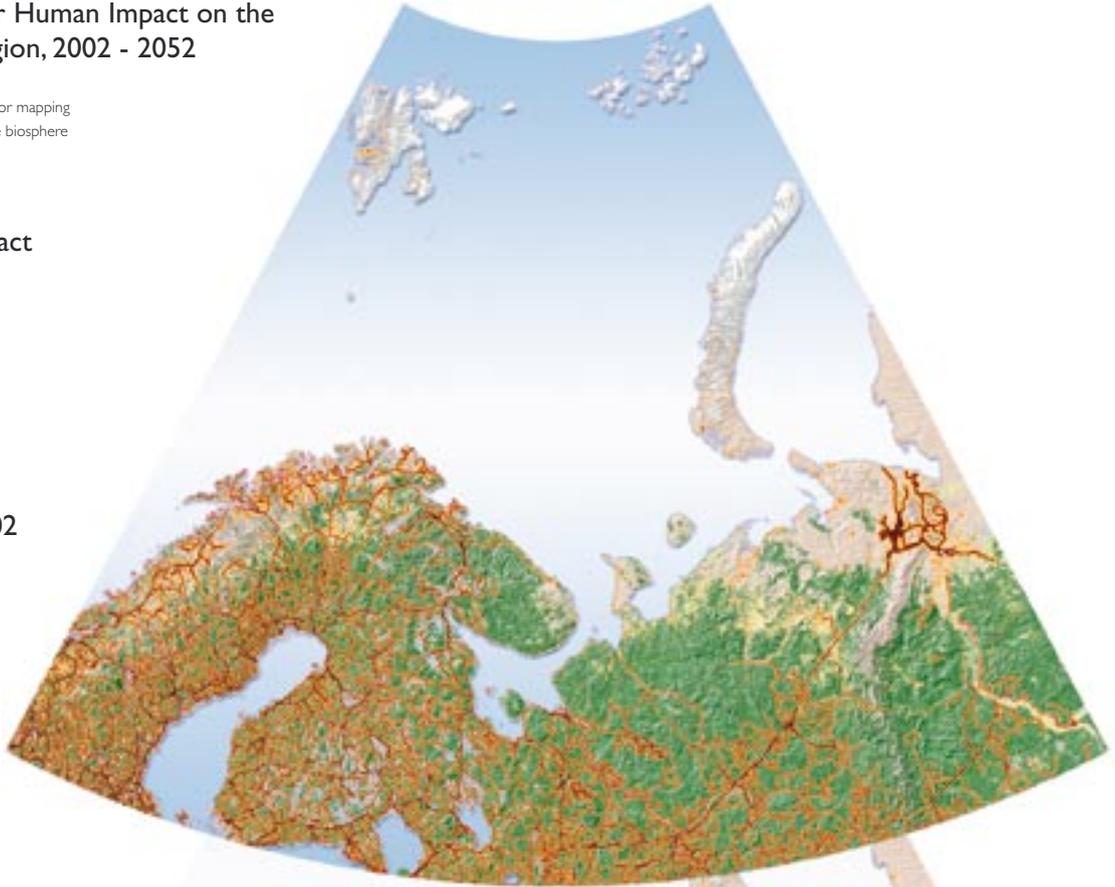
## Scenario for Human Impact on the Barents Region, 2002 - 2052

Map © GLOBIO  
Global methodology for mapping  
human impacts on the biosphere

### Human Impact



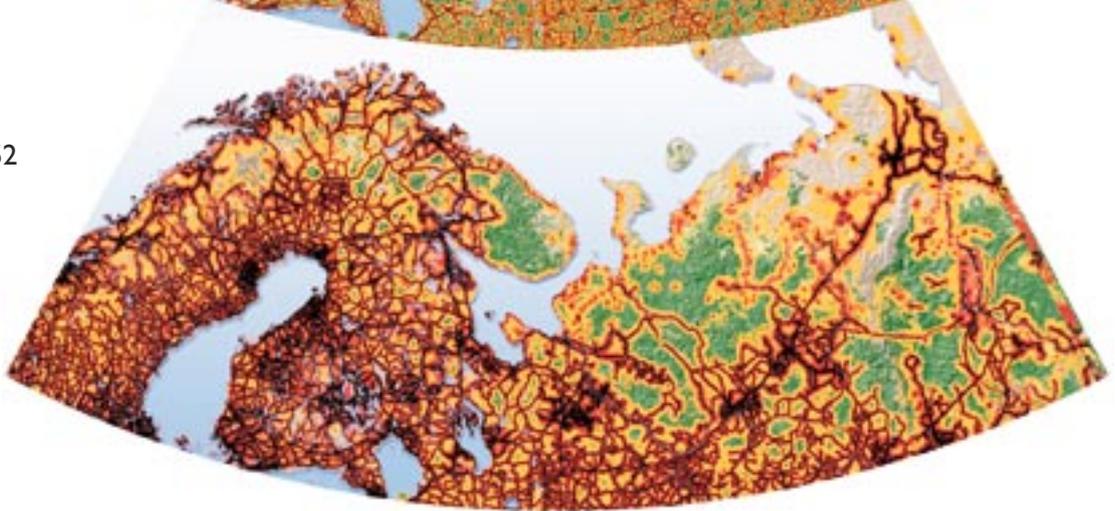
Barents 2002



Barents 2022



Barents 2052



energy consumption increases (increased activity) and/or reduction in the grazing activity due to high density of reindeer in the undisturbed area, reduction in grazing time, or absence of effective grazing time.

It is also pointed out various effects related to different kinds of disturbances:

- Local consequences: Increased energy consumption from the reindeer, or loss of grazing time connected to disturbances; permanent loss of pastures. These effects will infrequently or seldom give longterm negative impact on the reindeer husbandry.
- Regional consequences: Reduced use of good pasture areas close to development areas and roads; obstruction in the access to pasture area, and a decrease of the average slaughtering weight for the reindeer. The regional effects could give longterm negative impact of the industry.

Research on the human impact on grazing ground also shows that establishment of leisure time resorts could have considerable impact on the use of pasture, because of the reindeer tendency to avoid human obstructions. Such an establishment could lead to a 50% decrease of the use of the pasture in a 4 km circle around the resorts. This is a dramatic impact on the reindeer husbandry.

The human impacts on “wilderness” is documented in the published report “GLOBIO. Global methodology for mapping human impacts on the biosphere”. The report addresses the human impact on the biosphere, and also a focus towards the indigenous peoples. Under paragraph 5.4 “impacts on indigenous cultures” they describe the situation in Northern Scandinavia and parts of Russia.

Northern Scandinavia and parts of Russia are examples of areas where the current growth of infrastructure related to transportation, oil and gas, and mineral extraction is increasingly incompatible with land requirements for reindeer husbandry. In these areas infrastructure growth is associated with the loss of traditional lands, and conditions forcing indigenous people to abandon nomadic herding patterns for more sedentary life styles.

The report also states that

The coastal areas of Finnmark are crucial to the Saami indigenous people for calving grounds and summer ranges of their livestock of semi-domesticated reindeer. The same coastal zones, however, have been those subjected to most of the development. [...] Currently, a series of proposed development projects for mineral exploration, power stations, roads and resorts threaten the remaining grazing land and biodiversity in the region.

The report estimates that about 26% of the grazing ground in northern part of Norway is lost, and 50% of all the grazing areas in Norway is seriously impacted by human activity.

All these effects and impacts towards the industry added together are one of the biggest threats that the industry faces today.

## Small Game Hunting in Norway, Sweden and Finland

The situation connected with small game hunting is more or less identical for Norway, Sweden and Finland. The development in Sweden in the beginning of 1990 differs from the situation in Norway and Finland, but the general impression of the situation today is that the situation in these three Nordic countries are almost the same.

Small game hunting is a popular activity in Norway, Sweden and Finland. The hunting season for grouse is August/September until March. It is estimated that several hundred thousands of persons in each country is involved in small game hunting, and in some of the most popular areas the density of hunters per square kilometre is very high - especially in late September.

The disturbance on the herds from small game hunters, especially with dogs, was mentioned in many of the interviews with the reindeer owners. The reindeer owners underlined that they are not against small game hunting and the fact that people use the pasture areas for recreation. The problem is more related to the fact that ordinary people do not know anything about reindeer husbandry or where reindeer husbandry is practised. Lack of information to the public about reindeer husbandry in combination with

an almost “invisible” industry creates conflicts. One of the reindeer owners expressed his experiences that both hunters and hikers have a lack of knowledge about the reindeer industry in general or the reindeer behavior in particular. Some possible reasons can be: a) They are not aware that there are reindeer in the area, and b) their experience with animals in the field is sheep, which can be approached without problems. The consequences of disturbance for the reindeer and sheep is very different. All the hunters will during a day cover a large territory. The kind of “hunting” movement in the terrain – moving fourth and back to cover most of the surface in search for small game – causes considerably disturbances to the animals. Such hunting activities in combination with the use of dogs make the situation for the animals even worse.

The problem connected with disturbances from small game hunting is in principle the same in all countries. And again, as described for Norway and Sweden, the disturbances will causes the herd to move around on the grazing ground resulting in a bad utilization of the pastures an a unnecessary increase of energy consumption of each animal.

A high hunting pressure, in combination with the fenced pastures (Paliskunat), could be an unfortunate combination. The pastures available for each reindeer areas Finland is relatively small, and the movement of the herd is restricted by the fences. In this case, a relatively minor disturbance could have a significant impact in the herd. It is important to underline that the project do not have any data that could support this hypothesis, but still it is important to bear this in mind.

The conflict between reindeer husbandry and small game hunting is significant but not a direct treath to the industry. The reasons behind this conflict is also quite clear, and the solution is not necesarily expencive. It all comes down to public information about the reindeer husbandry, its use of pastures, and some general recommendations where to go and what to do if you come across a herd. This is a task for the local reindeer husbandry administration in cooperation with the local hunting and fishing organisation.

## Market and Value added production in Norway, Sweden and Finland

The reindeer industry in Scandinavia could be described as a primary producer of meat with no, or

just a small degree of, value-adding activities. The reindeer owner sells the live reindeer to the nearest slaughtering house. The owner must pay for the slaughtering and for the waste produced by the slaughtering process. It is a deficiency of reindeer meat on the Scandinavia market and there is in practice no export of reindeer meat. Within Scandinavia there is some export of Finnish and Swedish reindeer meat into the Norwegian market.

There is a growing attention towards product development in the reindeer industry. The consumers in Scandinavia want easy access to the traditional products of reindeer meat, and there is also a market for new products. Reindeer meat is well received in the national markets in Scandinavia, and is perceived as healthy and clean arctic food. The market has reacted in a positive manner when it comes to price. The price of reindeer meat is much higher than for other comparable meat products.

The slaughtering houses have strict regulations connected to the activity. They have to conform to the EU-directives. The regulations are the same for big slaughtering houses as for private small-scale production activity. This is creating troubles for reindeer owners trying to establish a small scale production. The general feedback from the industry is that information about the rules and regulations is not easy available. It is difficult to estimate the total cost of a project, and the regulations are changing every year. The persons interviewed about the value-adding production agreed on that the requirement and regulations regulating the small scale production should be strict in order to secure high quality meat. But many of the regulations are unnecessary and only create extra costs. An initiative from the national authorities to easen up some of the regulations, in order to avoid unnassacary costs, would be of great importance. There is a strong interest inside the industry to focus on the value-adding production, but the regulations today are limiting the initiatives from many reindeer owners.

In addition to the regulations, the knowledge about the production and a generally difficult recruitment situation was also mentioned as an explanation for not starting up with value-adding production. After the investments is done, you need to spend all your time with the production, you need to secure a stable input of meat, and you need people to help you year around. This means that the owners do not have time to spend in the herd, which is their main inspiration in the daily work. Besides, the income from the production should cover the extra expence of having



Reindeer Fillet, Example of High Quality Product.

Photo © Johny-Leo L. Jemsletten

someone else look after your herd.

In accordance with the different national statistics for Norway, Sweden and Finland, the main part of the reindeer meat is consumed through the national market in these countries. Finland is exporting meat both to Sweden and Norway, Sweden is exporting both to Finland and Norway, but Norway is only importing reindeer meat from Finland and Sweden (22%) in 2000.

According to a market survey done in Sweden 1999, the reindeer owners are only focused on price for the meat in their relations to the market (restaurant owners, whole sale purchasers). This means that they will sell to the highest bidder, and change contacts from time to time. From the buyers point of view this is a shortsighted strategy because it causes an uncertain situation for the market. For example, the restaurants are sceptical to put reindeer dishes on their permanent menu when it is uncertain whether they get deliveries or not. By establishing more stable contacts with buyers, the market for reindeer meat could be enhanced also in areas without direct contact with the industry. This might in a long term perspective be more profitable for the reindeer owners, as well as the whole sale dealers who would get more involved and be willing to spend more of their means to develop the market for reindeer meat, as well as other reindeer products like tongues, marrowbones, steaks etc.

As the survey in Sweden shows, there is a potential demand for new products. This requires an increase in the value-adding production within the industry. The problem is that the individual reindeer owners do not have the necessary competence or knowledge to manoeuvre through the complicated regulations. In Norway a special value-adding programme has been recently introduced, to overcome the obstacles that the reindeer owners experience and stimulate and accommodate the small-scale production throughout the districts.

## Legislation in Reindeer Husbandry

### Introduction

The situation regarding national legislation towards the reindeer industry in Norway, Sweden and Finland diverge when it comes to the formulation of the laws

and the specific contents of the law. At the same time the general picture is that the intention and the directions of the laws are almost the same. During the field trips in Norway, Sweden and Finland, the experience from the interviews in one country could be used to formulate questions in another country. Several experiences from the reindeer owners in different countries were similar even if the legislation differs between the countries.

During 2001, two important reports were published in Norway and Sweden: the Norwegian report "Proposal for an amendment to the Norwegian Reindeer Herding Act" (NOU 2001:35), and the Swedish "A New Reindeer Management Policy" (SOU 2001:101). In addition to these reports, a third report "Recommendations from the Norwegian-Swedish reindeer pasture commission" was also published. All three reports are now on public inquiry and they are expected to have impact on the management systems in both countries. We will return to the Swedish report in the next chapter.

### *The Norwegian Reindeer Herding Act*

The report "Proposal for an amendment to the Norwegian Reindeer Herding Act" (NOU 2001:35) was published in 2001. This report is the result of the work of an expert committee with a mandate to review the law from 1978 with a special focus on the control and administration of reindeer husbandry and the internal situation within reindeer husbandry, including the individual reindeer owner's legal status. One of the problems today is that the current law does not sufficiently reflect the rights of the reindeer owners in relation to each other. The committee states that

"The understanding that everyone within the industry has the same rights to grazing areas, and it is up to the administering authorities free discretion to undertake distribution and impose limitations in order to create a satisfactory husbandry system, is not in accordance with the way the reindeer owners themselves regard their own internal affairs. The statutes must therefore take into consideration the traditions and the social structure on which the whole industry is founded, and relate rights and duties to these".

And they continue

"The committee places importance on the creation of laws and rules based on culture and tradi-

tion within the reindeer husbandry, at the same time preserving the rights of individual reindeer owners. The current law uses husbandry unit and districts as basic unit within the reindeer husbandry industry. However, this form of classification does not coincide with the traditional economic and social systems within the industry. The single reindeer owner seldom operates alone, rather in a form of partnership, the *siida*. The committee stresses the importance of giving the *siida* a more prominent place in the future legislation”.

The focus on the *siida* is important when it comes to the regulation of the number of reindeer. The system today is connected to the district and the husbandry units. If the *siida* system is not taken into consideration when the total number of reindeer is decided, inter-relationships between reindeer owners are neglected, which could give a misleading impression of the actual use of the pastures.

The report also focuses on what they call a “Co-ordinated recruitment”. This is to secure a satisfactory schemes for the transition a *siida* share to the next generation. According to the report the owner of a *siida* share can establish a co-ordinated share for one of his or her children. This can not be done before the owner has reached the age of 50. The new owner of such a co-ordinated *siida* share has the same rights, responsibilities and duties as the owner of the main *siida* share. This proposal is important to secure the recruitment to the industry, which is essential for the industry.

#### *Local Government*

Most of the legislation that impinges upon the reindeer industry is managed by the local governments. These are directives on traffic, building and construction on the grazing ground, etc. Such legislation is always open for interpretation from the local government, something which opens for unequal practice of the same legislation. Reindeer owners who are in contact with several local governments during their migration, are confused as to how these directives will impinge upon them. Besides, the legislation is designed to be a tool for the local communities to reduce the possible damages caused by the reindeer industry on other interests, and is not oriented towards protecting the reindeer industry from disturbances etc.

Due to the nomadic form of life, the reindeer owners experience a certain resentment from the areas

where they are not registered as residents. The fight to protect their own interests can be especially difficult in these areas.

In order to make use of the existing legislation, a minimal knowledge about reindeer husbandry is required. Interviews with bureaucrats in local governments supported the view of the industry that there is a general lack of knowledge within the management system.

Some of the explanations given in the interviews is that this is not an industry which brings large tax incomes to the community, the industry is not very visible in the landscape, and is often in conflict with other types of industry developments which create more jobs and more tax income.

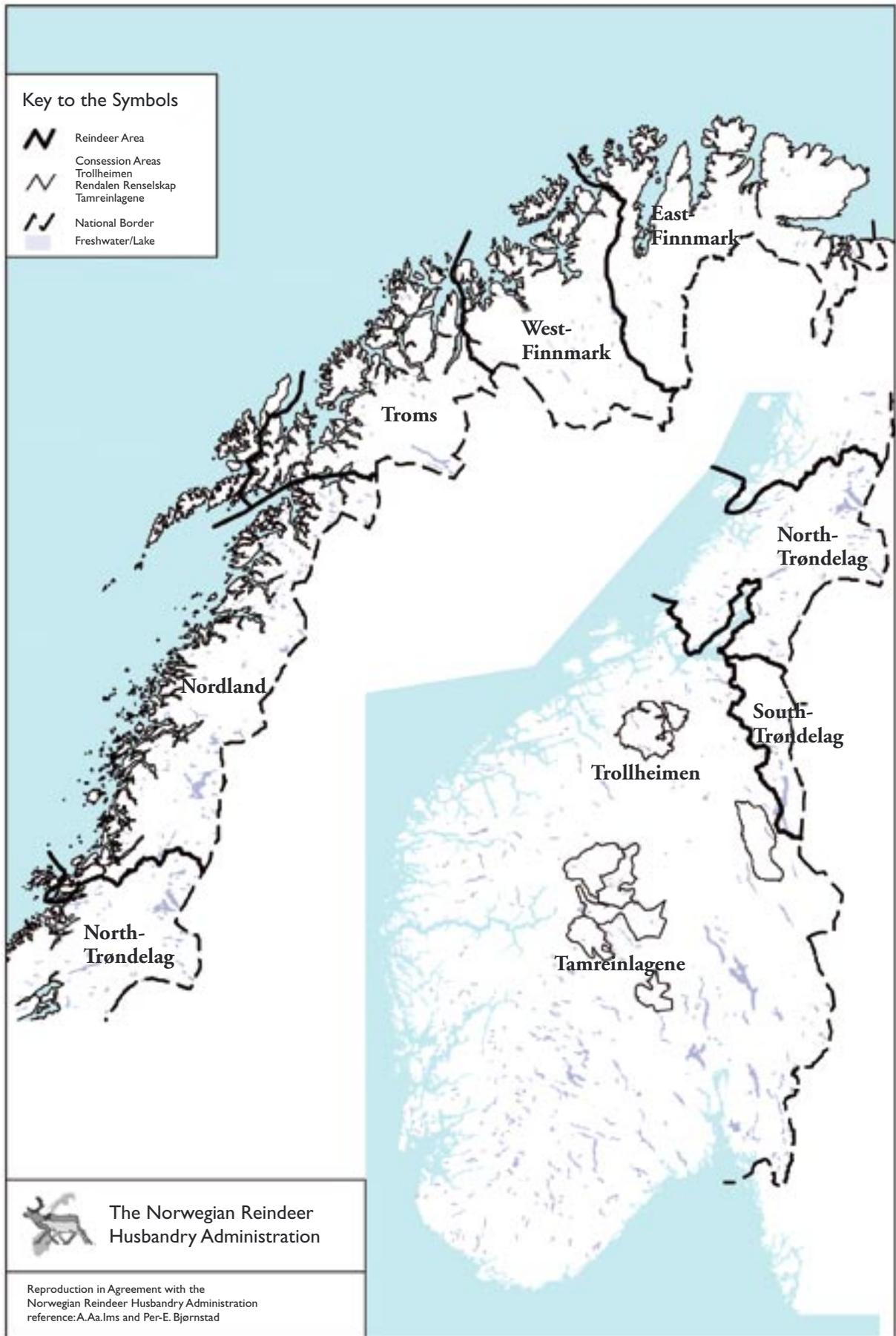
## Summary

The reindeer husbandry in Norway is under pressure. The pressure comes from the national authorities to reduce the total number of animals due to heavy grazing over several years; it comes from an increase in number of predators and it comes from an increased development of infrastructure on the pasture area.

The number of predators must be kept under control. The requirements of the compensation system concerning the grounds for repayment is not in accordance with the claimed losses. Between 1996-2000 80% of the claimed losses due to predators were not approved. Provided that the government is prepared to pay the actual expenses, the reindeer owners do not oppose the existence of predators within their pastures as long as their number does not exceed a sustainable level.

The main challenge for national authorities and the reindeer industry concerning the loss of pastures is to start a constructive dialogue on how to develop a system of co-existence. This should focus on a municipal level, and integrate the total planning process; from construction of cabins and roads, to disturbances and small-game hunting.

The average income of reindeer owners is lower than for the general population. This is partly due to the heavy investments in necessary technical tools, like snowmobiles, four-wheeled-motorbikes etc. The reindeer owners have only partly the privileges of reduced taxes on commodities, compared to other primary industries.



App. 80% of the expences are connected to technological tools, and the potential to rise the profitability of the industry is therefore mainly connected to creating better income opportunities.

The prospects concerning the market for reindeer products are favorable. The market is willing to pay a relatively high price compared to other types of meat. The main concern from the buyers point of view is the unstable delivery situation of meat, which makes marketing difficult because the demands can not be met year round. The demand from the market does not coincide well with the traditions within reindeer husbandry for times of slaughter. A question is

whether the industry is willing to, or able to, change the slaughtering schedules to provide a year round supply of fresh meat.

There is also a potential demand for new products. This requires an increase in the value-adding production within the industry. The problem is that the individual reindeer owners do not have the necessary competence or knowledge to manoeuvre through the complicated regulations. In Norway a special value-adding programme has been recently introduced, to overcome the obstacles that the reindeer owners experience and stimulate and accommodate the small-scale production throughout the districts.

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*Forslag til endringer i reindriftsloven*, NOU 2001:35, Oslo





Photo © Johnny-Leo L. Jernsletten

## Reindeer Husbandry in Sweden

### Introduction

This chapter will focus on reindeer husbandry in Sweden. Reindeer are herded over an area of approximately 160.000 square kilometres, or about 34% of Sweden. All reindeer herding activity in Sweden is regulated by the “Swedish Reindeer Herding Act”. Like the Norwegian case, the Act secures reindeer herding as a exclusive right for the Saami people of Sweden, and is of profound importance. Reindeer herding is closely connected to membership of a Saami Village. The designated areas for praxis of reindeer husbandry are within the borders of the Saami Village. Sweden, like Norway, has one exception from this rule, and that is a limited reindeer herding below the Saami territory in the Kalix and Torne river valleys in Norrbotten– following the borderline between Sweden and Finland. This is named “Concession Areas”.

### Collected Data

The background information for this chapter is based on several publications about Swedish reindeer husbandry, but one publication should be mentioned especially; in Swedish it is called “Svensk rennäring” (Swedish Reindeer Husbandry) from 1999. This publication is the first overview of the socio-economic landscape of the industry, and it is a co-operation between Samiid Riikkasearvi/SSR (Association for Swedish Saami People), Jordbruksverket (the Swedish Agricultural Board), Sveriges Lantbruksuniversitet (Swedish Agriculture University) and Statistiska Centralbyrån (Swedish Statistical Bureau).

In addition to all the official statistics collected for the project, a series of interviews have been conducted in 5 Saami villages with leaders, herders and reindeer owners. We have focused on the problems and obsta-

cles that the members of the villages are facing in their every day work.

A presentation like this will never give justice to the variation inside the industry. But hopefully this chapter will give a general impression about the situation for the people within the reindeer husbandry.

## National Management of Reindeer Husbandry

### Organisation

#### *Reindeer Pasture Areas*

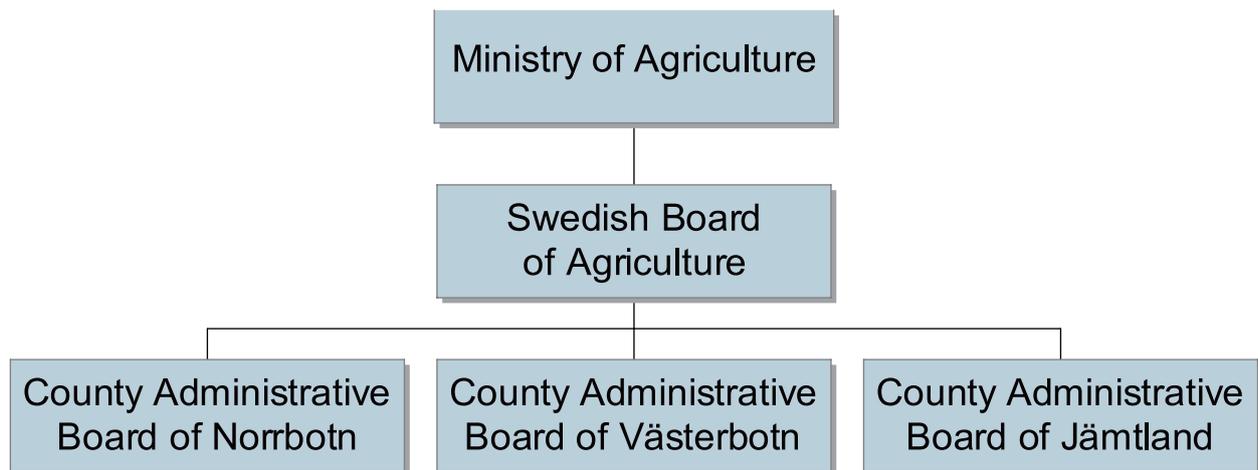
Reindeer husbandry is practised in the Counties of Norrbotten, Västerbotten and Jämtland, covering about 160.000 square kilometres, or 34% of Sweden. Sweden classifies the different pastures in a way which is unique. Sweden operates with several important administrative concepts - Saami territory, cultivation line, year around pastures, winter pastures and concession pastures - which function as border lines between the different pastures.

In the SOU 2001:101 “En ny rennäringspolitik” (Towards a new reindeer husbandry politics) the system of division of the Swedish pastures is explained. It states:

“Reindeer management may be conducted throughout the year in the Sami territories of Norrbotten and Västerbotten counties, partly above the limit of cultivation, partly below this limit on land where forest reindeer management is traditionally conducted in the spring, summer or autumn on land belonging to the state or that belonged to the state on the last day of June 1992 (Crown Lands) or constitutes reindeer pastures on reindeer mountains in Jämtland and Dalarna counties that belonged to the state on the last day of June 1992 and that were specifically made available for reindeer pasture.

Reindeer management may be carried out from October to April in other parts of the Saami territories below the cultivation limit, within such areas outside the Saami territories and reindeer mountain pastures where reindeer management has traditionally been conducted during certain times of the year.”

Figure 1: National Management of Reindeer Husbandry



## State Management system

The following text will give a short presentation of the Swedish management system. The management system in Sweden and Norway is based upon the same principles, and system in Sweden could be described schematically according to figure 1.

As shown in figure 1 the highest level is the Ministry of Agriculture. It is responsible for all the co-ordination regarding Saami issues in the different Ministries and also has the responsibility towards the Saami Parliament. In addition to this the Ministry of Agriculture is responsible for all questions of principal character regarding reindeer husbandry. Most of the decisions concerning the reindeer husbandry is delegated to The Swedish Board of Agriculture.

### Swedish Board of Agriculture

The Swedish Board of Agriculture is the Government's expert authority in the field of agricultural and food policy, and the authority responsible for the sectors agriculture, horticulture and reindeer husbandry. Its responsibility therefore includes monitoring, analysing and reporting to the Government on developments in these areas, and implementing policy decisions within its designated field of activities.

The general responsibility for the reindeer husbandry is within their responsibility, but the day-to-day activities includes executive work, different kind of reviews and investigations and the administrative work regarding different compensations etc.

### County Administrative Board

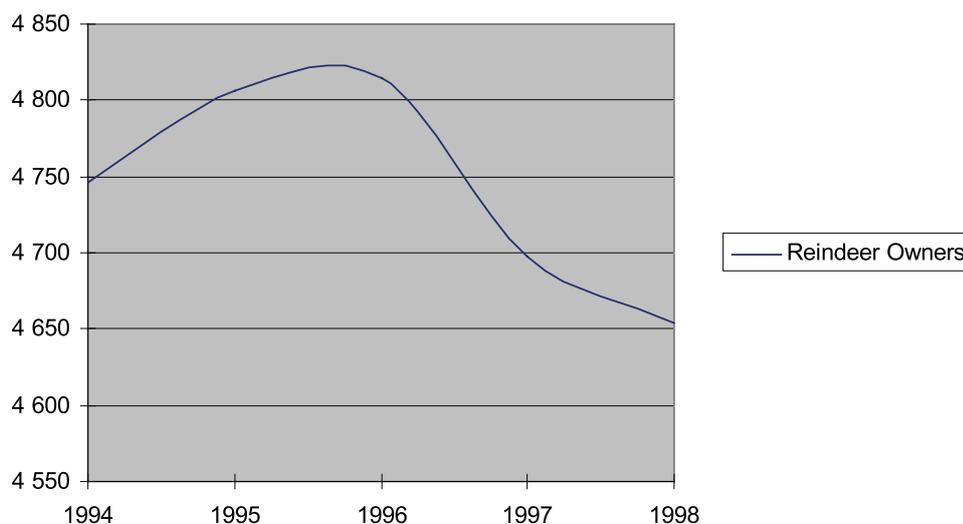
The County Administrative Board of Norrbotten, Västerbotten and Jämtland is the executive authority on reindeer husbandry within the Swedish management system. They are responsible for the daily contact with the Saami Villages. Some of their responsibilities is control of the maximum number of reindeer on different pastures, based on surveys in co-operation with the saami villages beside the number of predators within the pastures, and consequently the number of reindeer lost to predators that is paid compensation for.

All three county administrative boards have one expert on reindeer industry. In addition to this, the county administrative boards is the secretariat for the "reindeer industry delegation/board". This board consist of seven members, where three of the members are reindeer owners.

### Saami Villages

The saami villages are the units which organises the reindeer owners within the designated pasture area of each saami village. The area of reindeer husbandry in Sweden is divided into 56 saami villages. The concept of a saami village is not a settlement, but an organisation of the use of a designated area, although in practice a settlement is often the centre in the area. The saami village is not allowed to be involved in any economic activities other than reindeer husbandry. As will be shown in the subchapter on legislation, there

Figure 2: Development of Reindeer Owners in Sweden, 1994 - 1998



is currently a proposal for a new legislation that will give the saami villages opportunities to expand its economic activities also in other areas of interest.

Every reindeer owner is considered as a self-employed person, and the saami villages function as co-operations of individual reindeer owners. For example, the compensations for loss of reindeer are paid to the saami villages, which distributes the amount according to the size of the herd of each reindeer owner.

The saami village is equivalent to the reindeer districts in Norway, and the individual reindeer owners are equivalent to a husbandry unit in Norway.

### Reindeer Owners in Sweden

Figure 2 shows the development in the number of reindeer owners between 1994 and 1998. The trend

in Sweden is a slight reduction of 2,1% in this period. A reduction on 2,1% is around 100 persons and probably reflects normal variation in the data material and in the society as a whole. Compared to Finland with a decrease of 16%, or 1000 persons, the situation in Sweden is stable. The same is the situation in Norway with a slight increase of 4%.

The number of owners in Sweden is stable, but how is the division of reindeer between the owners? We will present some of the material available in Sweden concerning numbers of animals, herd size, sex, age etc.

Figure 3 shows the number of owners divided into different herd size groups. The general impression from Sweden is that the majority of the reindeer owners - 3727 persons, or 80% - owned between 1 and 49 reindeer in 1998. The second largest group of owners - 313 persons, or 6,7% - owned between 50-99 reindeer, and the third group with 291 persons, or

Figure 3: Number of Reindeer Owners and Size Group of the Herd, 1998

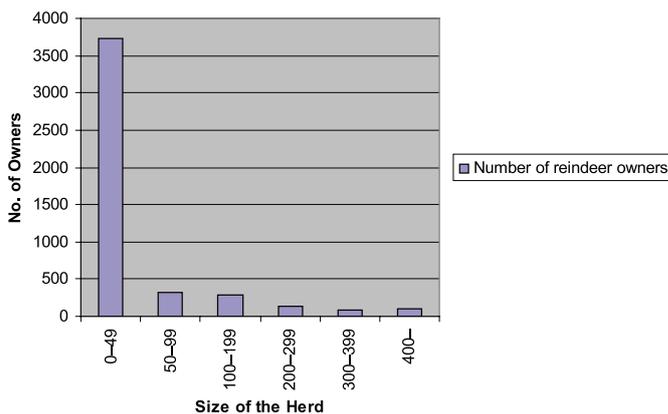
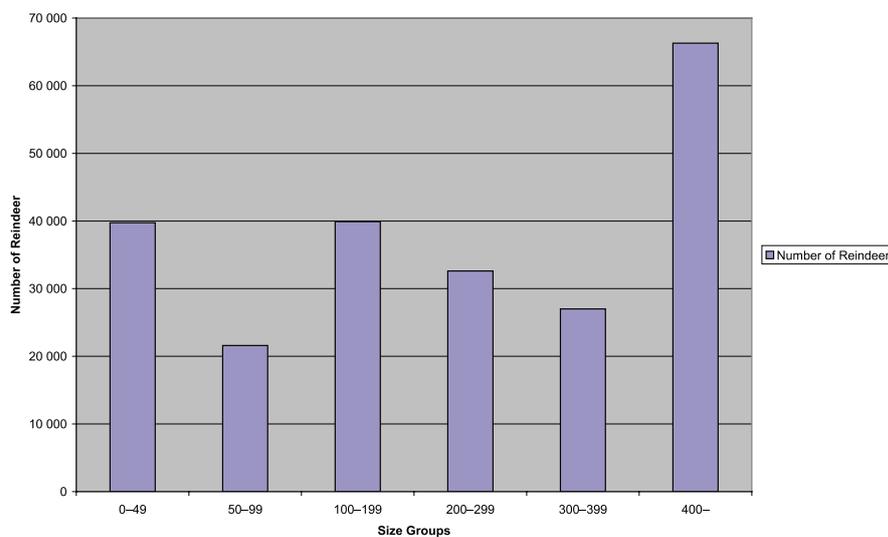


Figure 4: Number of Reindeer in Different Size Groups, 1998



6,2% owned between 100-199 reindeer. 108 persons, or 2,3% of the owners have a herd of more than 400 reindeer.

A consequence of figure 3 is shown in figure 4. The figure gives an indication of the total number of reindeer in the different herd sizes. The average number of reindeer in group 1-49 is 11. In size group 50-99 the average number of reindeer is 69, and in size group 400- the average number of reindeer is 630.

This indicates that there are many small reindeer owners with an average herd size on 11 animals, and on the other hand, the reindeer owners with large herds, means in average 630 animals.

Figure 5 focuses on reindeer owners divided in different age groups and the figure speaks for itself. It is a clear trend in Sweden to a predominance of reindeer owners over 50 year. There are 2269 reindeer owners over 50 year, or 49%. An even more interesting observation in this figure is a equal number of reindeer owners between 30-34 year and over 80. This figure show the problem with recruitment in Sweden,

The distribution of male and female reindeer owners. in Sweden follows the same pattern as in

Norway. The number of male owners outnumber the female owners and according to the data from Sweden there are 2867 male reindeer owners, or 62%, and 1633 female owners, or 35%. 3% of the owners is decedent estates.

Figure 6 gives a overview of the distribution between male and female when it comes to herd size. In herd size from 300 reindeer and upwards, male reindeer owners constitute 90% or more of the owners, but in the other end - between 1 and 99 reindeer, male reindeer owners constitute about 62%.

Two important pictures can be drawn from the figures presented. It is a predominance of male reindeer owners, and the male reindeer owners own most of the animals, and the largest herds. This picture is more or less similar with the situation in the other scandinavian countires.

The second thing we want to draw attention to is the difficult recruitment situation. As the figure shows, it is slaghtly more reindeer owner at age 80 than there is reindeer owners age 25-29. This is an indication on the difficult situation for recruitment into the reindeer industry in Sweden.

Figure 5: The Number of Reindeer Owners Divided in Age Groups, 1998

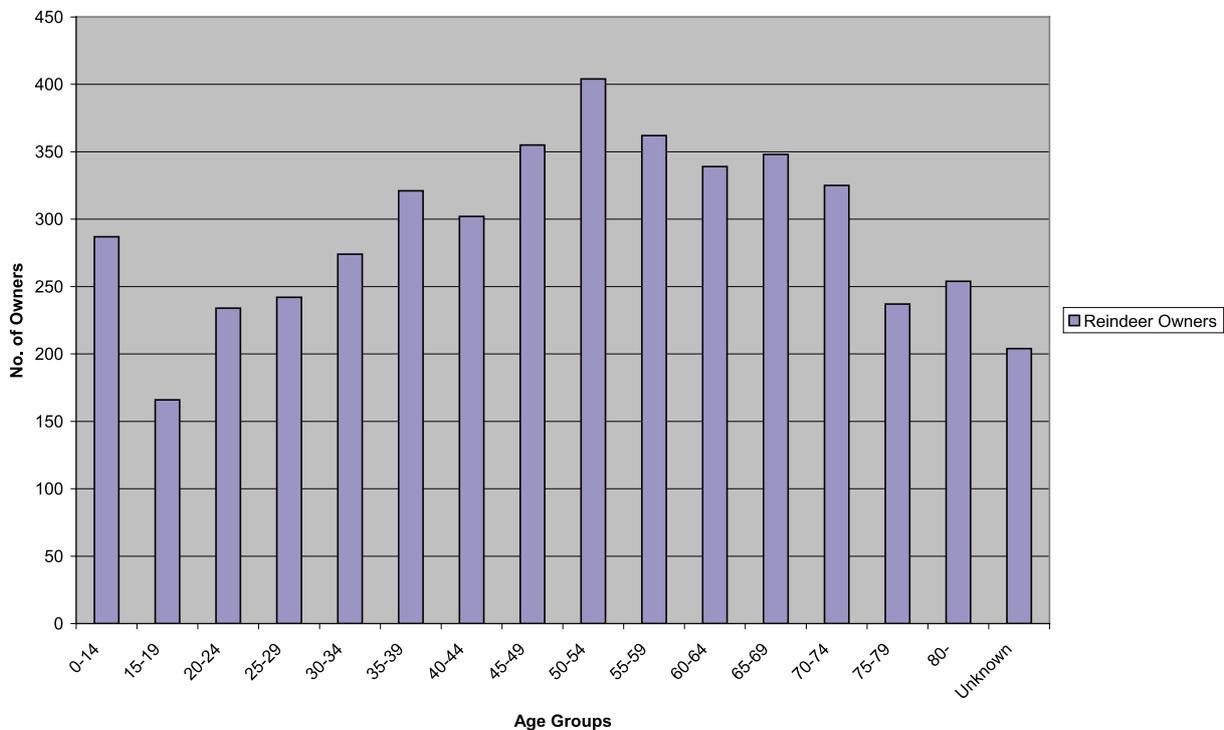
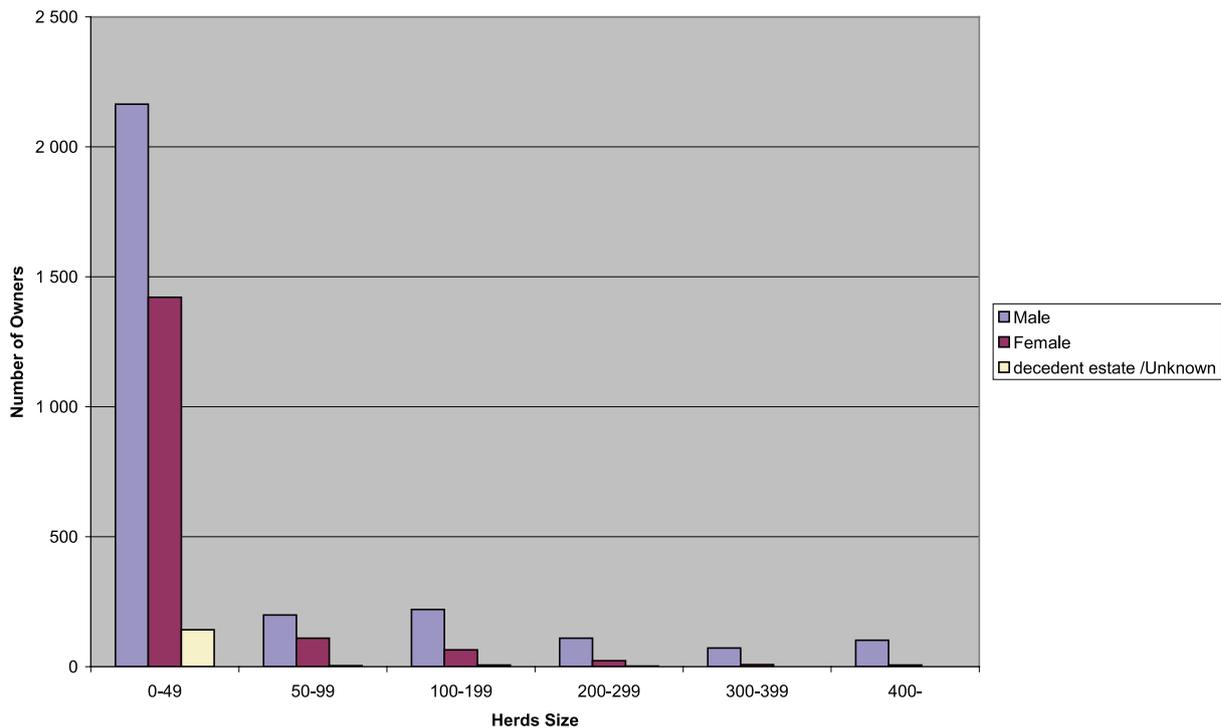


Figure 6: Distribution of Male and Female Reindeer Owners in Different Herd Size, 1998



## Economy in Swedish Reindeer Husbandry

### Introduction

This part of the chapter will give a short introduction to the economy connected to the reindeer husbandry. The general questions asked in the beginning of the chapter were: How important is the income from the industry to the family? What kind of income is important to the industry? What are the costs connected to the industry? It should be noted that the figures are based on averages, and do not give an exact picture of the variations within the industry.

### Size of the herds

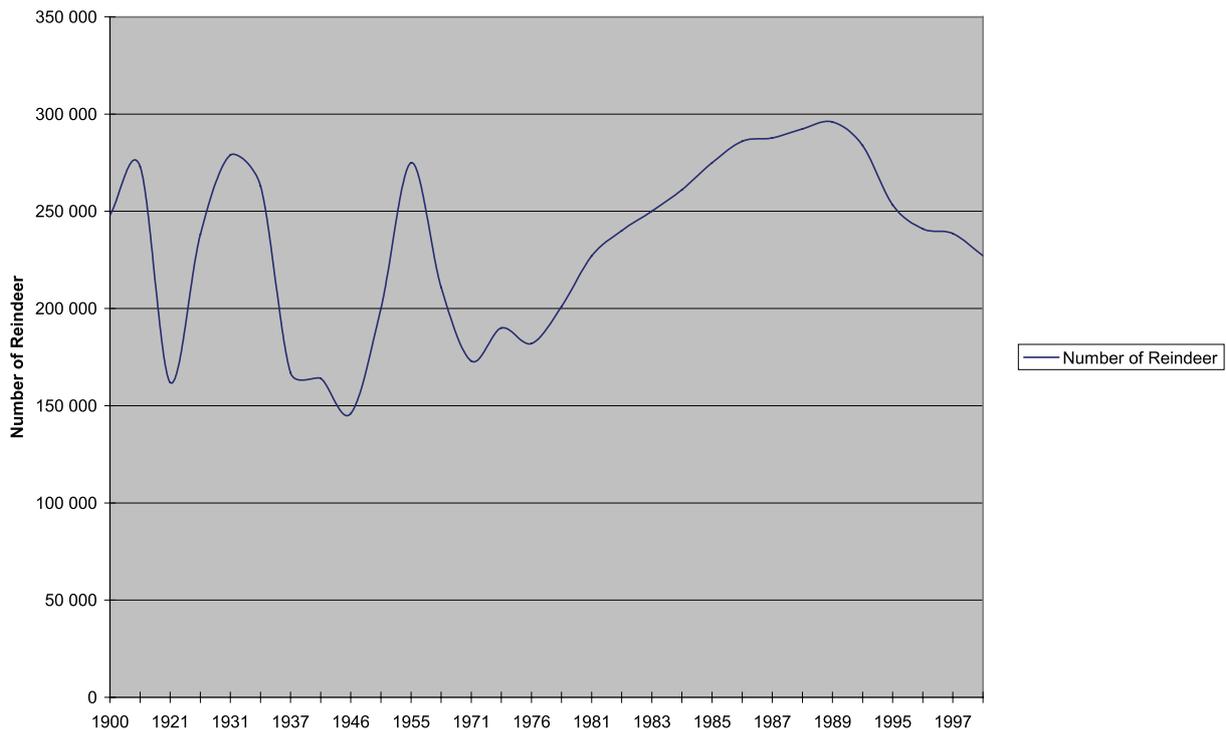
Figure 7 shows the development in number of reindeer in Sweden between 1900 and 1998. The development in the total number of reindeer is similar to the development in Norway from the 1970's to the end of the 1990's as shown in chapter 5. The trend has been a steady increase in the number of reindeer from the

beginning of 1980 until 1989/90. From 1990 to 1998 the number of animals has decreased every year.

The background for this development is a complex connection between extra favorable natural conditions and a general social and technological change in the society. One of the explanations offered by scientists is the development in the mechanisation and rationalisation of the reindeer husbandry. More mechanical equipment was introduced as part of the herding activity. This gave the opportunity to manage larger herds, while at the same time it also required more income to pay for the new equipment. The rationalisation of the industry, which was partly encouraged by the official authorities, focused on a maximal production of reindeer meat to increase the profitability for the reindeer industry. A maximal use of pastures over a long period gives little tolerance against too heavy grazing.

The Swedish reindeer owners pointed to the Chernobyl accident in April 1986 as another important explanation. Huge land areas in Scandinavia, and especially in Sweden, was contaminated with radioactive fall-down. This situation caused a collapse in the Swedish reindeer meat market. The government offered economic support to the reindeer owners for the meat that could not be used because of too high content of radioactivity. In a situation where most of

Figure 7: The Development of the Total Number of Reindeer in Sweden, 1900 - 1998



the reindeer meat was destructed the reaction from many reindeer owners was to keep the herd on the grazing ground. This strategy increased the number of reindeer rapidly and according to several reindeer owners the result was too many reindeer on the pastures. There was a need for a reduction in the number of animals, and this is partly reflected in decrease shown in the statistics.

The reduction has not been the same for all the counties. Figure 8 shows the development in number of reindeer divided in counties between 1994 and 1998.

## Distribution of Income in the Family

To get a understanding of the economy in reindeer husbandry, we will look closer at the division of income within the reindeer owners' families. The statistical material from Sweden is divided in a way that makes it possible to compare the income of both single persons and families.

Figure 9 shows that a single persons with a herd size between 300-499 reindeer the vages covers 48%

of the total income, while income from the reindeer husbandry amounts to 30%. The average for single persons not taking into account the herd size, the importance of vages raises to 69%, while the income from reindeer husbandry decreases to 18%.

When it comes to the average family the situation differs. Families with a herd size between 300-499 the vages covers 78% of the total income, while reindeer husbandry amounts to 15%. Not taking into account the herd size, the average income for a family is divided between 84% vages and 10% from the reindeer husbandry.

Income from vages can be both from work outside the reindeer husbandry, but some saami villages pay their members vages for the work they put down in maintenance of infrastructure within the villages' pasture area etc. This is registered as regular salary, even though it is directly related to work in the reindeer husbandry.

For the families the high percentage of income from vages, may also be caused by one of the couple working outside the reindeer industry. Since the general level of vages in the Swedish society is higher than in reindeer husbandry, the income from reindeer husbandry will cover a lesser part of the families' total income than the vages from regular employment.

Figure 8: Total Number of Reindeer by County, 1994 - 1998

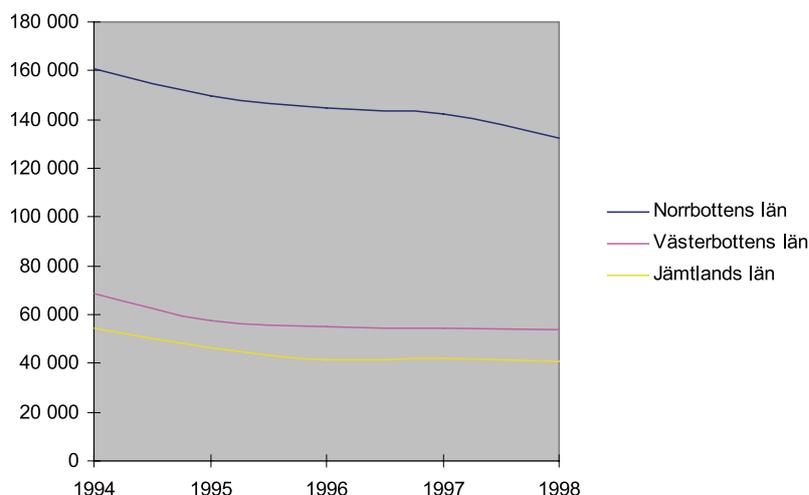
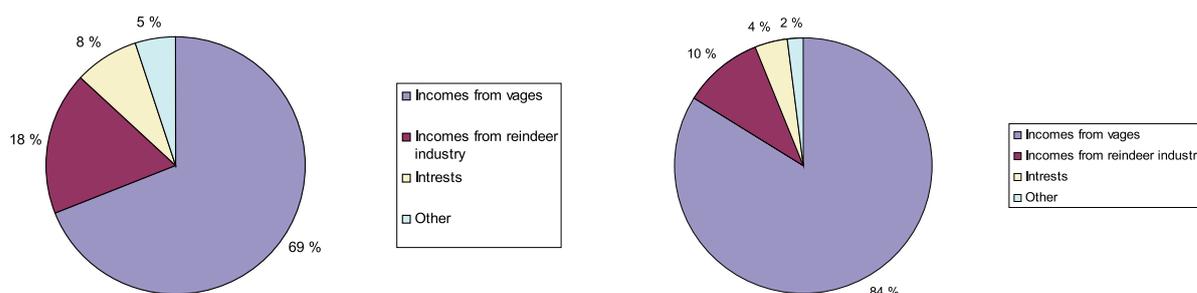


Figure 9: The Division of the Total Income, Single Person And Family, 1998



### Income Connected to Reindeer Husbandry

The description of the income in the Swedish reindeer husbandry is based on the statistics of an average of the self-employed reindeer owners. The publication “Swedish Reindeer Husbandry” gives an example on one average reindeer owner in Sweden in 1998. This example shows the different incomes to this reindeer owner during one year in addition to all the incomes to the saami village which he belongs.

The following text give a short overview of the distribution of these incomes.

#### Reindeer meat

Figure 10 indicates the situation in the beginning of the 1980's with a steady increase in meat production. This trend changes dramatically in 1986/87 after the Chernobyl accident. The production was reduced

with almost 2.000 tons over night. From 1989 the meat production began to increase again, but from 1991- 1998 the meat production fell steadily.

For the average reindeer owner the income from meat covers 43% of the total income from reindeer husbandry.

#### Compensation for loss of reindeer

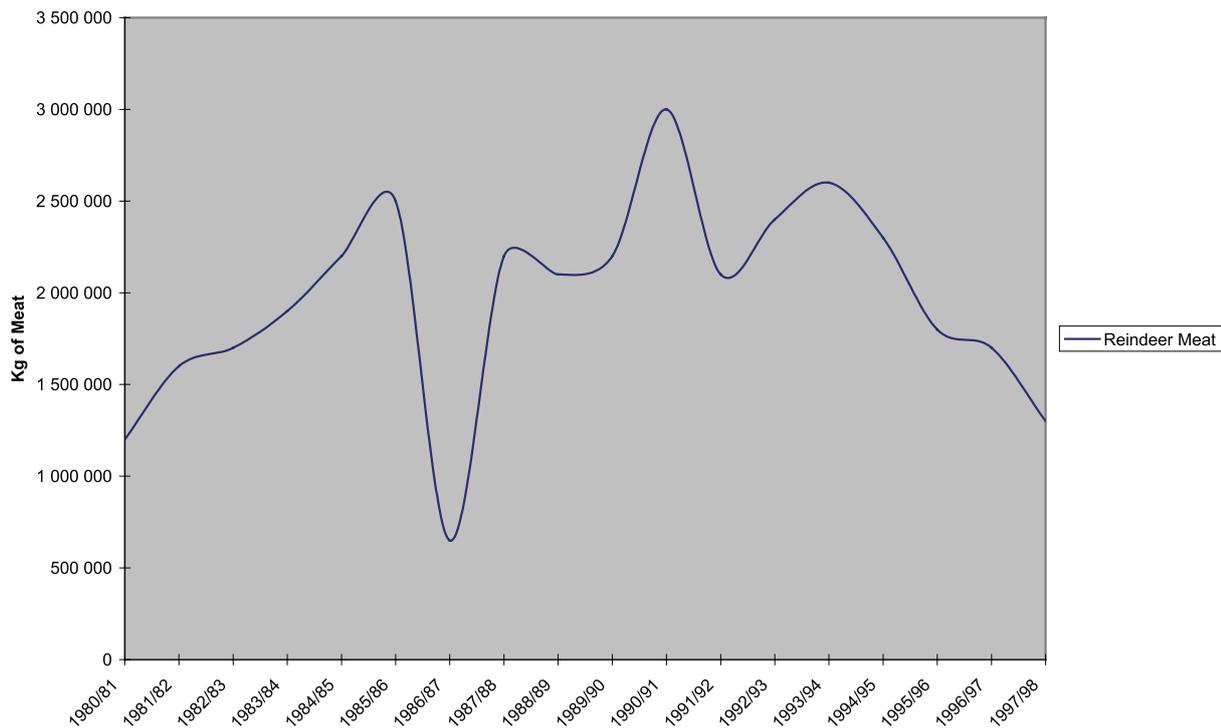
The compensation for loss of reindeer to predators, car accidents etc. amounts to 20% of the average reindeer owners income from reindeer husbandry.

#### Additional Earnings

Earnings from sale of deerskins, antlers, hunting and fishing amount to 26% of the average reindeer owners income which is related to reindeer husbandry.

The average income from wages received from the saami village amounts to 11% for the average reindeer owner.

Figure 10: Production of Reindeer Meat in Sweden, 1980 - 1998



## Costs Connected to Reindeer Husbandry

The statistical material for Sweden is difficult to compare with the other scandinavian countries because of the division of expences. The costs in reindeer husbandry for the average reindeer owner are connected to transport, mechanical equipment, artificial feeding, dogs, constructions, office and insurance. A calculation of the expences to transport and mechanical equipment reveals that they cover approximately half of the total costs for each reindeer owner. The use of helicopters as an aid in herding is a considerable expence, which is paid by the saami village. The close co-operation between the saami village and the reindeer owners makes it difficult to calculate the actual costs connected to the reindeer husbandry for each owner.

## External Conditions

### Introduction

The economy part of this chapter is based upon the national official statistics in Sweden. The presentation indicated a trend in the economic situation for the swedish reindeer husbandry at the end of the last century. But reindeer husbandry is much more than economy. Someone would even claim that reindeer husbandry is not about economy at all, but about other values.

This part of the chapter will focus on external conditions that affect the industry in different ways. This part is based on interviews made during the projects field trips in Sweden in March 2002. And again, the topics for discussion during this interviews were the

same as for the other countries; predators, loss of pastures, small game hunting, tourist industry and access to market.

## Predators

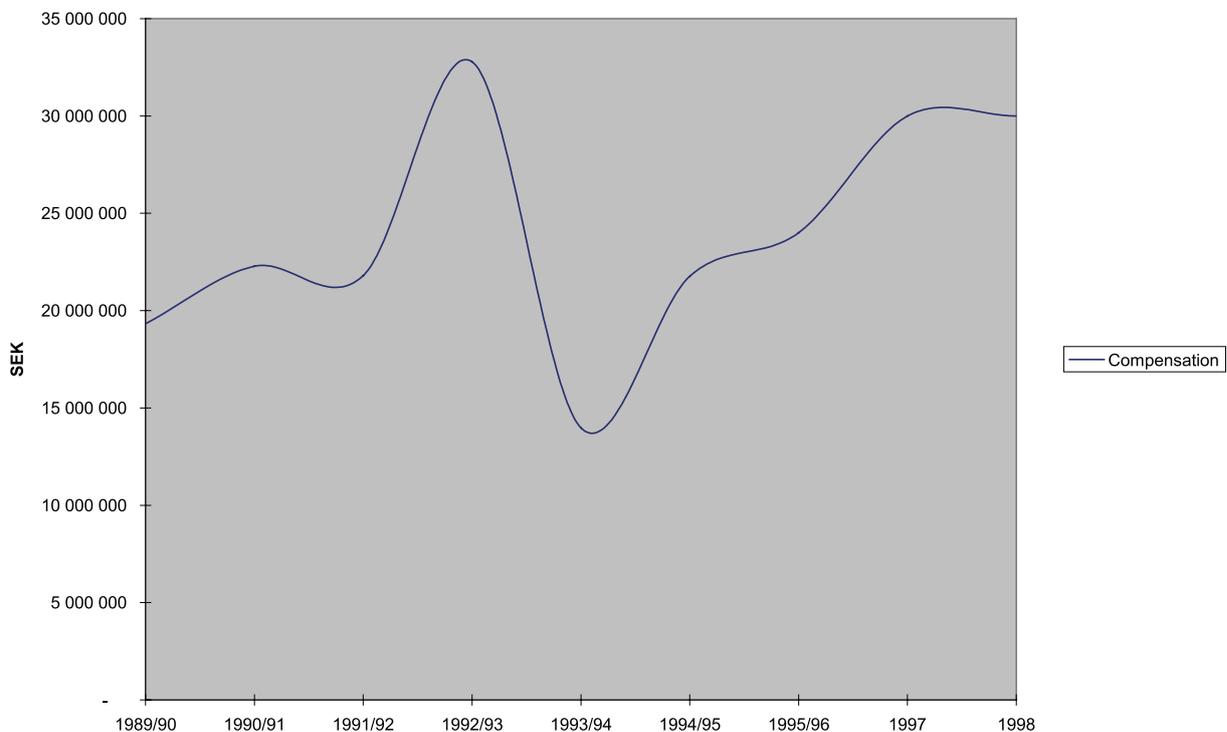
There is an ongoing debate both on a national, and an international level, about predators. The opinions are strong, and the disagreements are many. The debates are concerned with how many predators exist, is this number of predators in accordance with the national policy, how much damage are the predators responsible for etc. All these questions are important, but it is difficult to give good answers to them. It seems that “everybody” agrees on the fact that the predators belong to the natural environment, and that predators are an important factor of this environment. The disagreements concern how the predators should be managed and controlled, and how much harm they should be allowed to do before they are removed.

This debate is strong in Sweden, and predators are one of the “top-three” topics among reindeer owners. All the owners interviewed during the fieldtrip brought up this issue, and expressed a clear attitude

towards predators. The stories told, and the experiences with predators differ between the areas, but one message was universal: the number of predators is growing, and they are causing more and more damage in the herds. The damage to the herds have at least two sides; one economic side and one emotional side, but so far most of the attention has been paid to the economic impact.

The Swedish compensation system connected to predators differs from the systems in the other countries in this report. Sweden has a system based on the occurrence of different predators inside the pasture area of the Saami village. The compensation is estimated through the number of reproduction of each predator every year. One reproduction of wolverine or lynx is compensated equivalent to 200 reindeer. Reproduction of one wolf is compensated equivalent to 500 reindeer. If there is no reproduction inside one Saami village area, but only occasional occurrence of wolverine or/and lynx, the Saami village will get compensation equivalent to 50 reindeer for each species. If this is the case for wolf, the compensation will be equivalent to 50 reindeer for every wolf/individual. When it comes to bear and golden eagle, the compensation system is based on the size of the pasture area multiplied with 0.02.

Figure 11: Compensation for Loss of Reindeer to Predators, 1989 - 1998





Artificial Feeding of Reindeer in Sweden

Photo © Johnny-Leo L. Jernsletten

The important point is that compensation for loss of reindeer is paid to the Saami village independent of whether the reindeer is found dead or not. This is a compensation for the number of reindeer assumed killed by predators that year. The compensation in 1998 for damage by predators was estimated to be 58.000 reindeer totally for Sweden. The Swedish government has allocated 30 million SEK to the compensation system, and 30 million divided on 58.000 reindeer gives a price for each reindeer of SEK 517 in 1998.

Figure 11 shows the development of compensation for loss of reindeer to predators in the period 1989-1998.

The figure shows a variation in the compensation from 1989 to 1997. The compensation is stable on SEK 30 million because this is the amount of money allocated from the government. This means that it is actually the value of each reindeer that varies from 1997 since the amount of money for compensation is constant.

All reindeer owners expressed a deep concern when it comes to the fluctuating values of the reindeer. In praxis it means that it is the owner of the herd who

must take the economic loss when the value of the reindeer decreases. The reindeer owners underlined that they do not know about other self-employed persons who sell products which vary in value from year to year. The reindeer owners are generally satisfied with the compensation system today, on the conditions that there is set a fixed value for each reindeer. This system means that the Swedish government must allocate the money needed to cover the actual expenses connected to loss of reindeer. This amount of money would change in accordance with the numbers of predators within the reindeer areas in Sweden.

As mentioned at the beginning of this section, economic compensation is important to a self-employed person, but many of the owners also pointed out the emotional side of having predators within ones pastures. It is a personal strain to find your own reindeer teared to pieces of predators. Sometimes you can see from the track in the snow how much the reindeer has suffered before death occurred. It can be difficult to understand for people outside the industry the emotional tie to the individual reindeer - a competent owner recognises each individual reindeer in the herd, and have different terms for the composition of

colours, shape of the antlers, etc as well as behavioral characteristics.

## Loss of Pastures/Forestry

For the discussion about “Loss of Pastures”, please refer to chapter 5. For the discussion about “Forestry”, please refer to chapter 7.

## Small Game Hunting

For the discussion about “Small Game Hunting”, please refer to chapter 5.

## Market and Value Added Production

For the discussion about “Market and Value Added Production”, please refer to chapter 5.

## Legislation in Reindeer Husbandry

The most important issue concerning legislation in Sweden at present is the report “A New Reindeer Management Policy” (SOU 2001:101). This contains substantive recommendations and proposals for changes in the Swedish management system, and opportunities for extended economic activities within the saami villages. When it comes to changes in the national management system, it is proposed that the main responsibility for the management of the reindeer industry should be transferred to the Saami Parliament. The exception is the management of pastures, which will continue to be governed by the County Administrative Boards of Nordbotten, Västerbotten and Jämtland.

The saami villages are to day restricted from other economic activities than reindeer husbandry. The new proposal involves extensive economic freedom, which will offer the saami villages a more differentiated economic basis. Especially for the women this will give opportunities for income connected to work with handicrafts, tourism etc. within the framework of the saami villages.

Another important proposal in the report is the equality of ownership to land and pasturing rights.

In praxis this means that in conflict situations both parties - landowners and reindeer owners - have the same strong case in the legal system. Hopefully these changes in the legal status will forward a joint planning of the use of land areas, for example between the forest industry and the reindeer owners, which will lessen the level of conflicts.

The proposals of the rapport on equality of land use rights is in sharp contrast with the actual situation in southern Sweden, where there are ongoing conflicts in court between landowners and reindeer owners. So far the reindeer owners have had the sole responsibility of proving that they have a traditional right to use privately owned land as winter pastures. According to the reindeer owners the loss of their rights to winter pastures in southern Sweden will mean the end to reindeer husbandry in a large area, because there are no alternative pastures available.

In addition the agreement between Norwegian and Swedish governments on the concession pastures is being reviewed, and proposals for amendments are put forward in the report “Recommendations from the Norwegian-Swedish reindeer pasture commission” (2001). The reports are expected to have impact on the management systems in both Sweden and Norway. In addition to these reports, there is an ongoing debate on the necessary conditions for a future ratification of the ILO Convention no. 169 in Sweden, which will have an impact on the issue of rights to pasture areas.

Most of the legislation that impinges upon the reindeer industry is managed by the local governments. These are directives on traffic on the outlying fields or grazing grounds, building and construction on the grazing ground, etc. Such legislation is always open for interpretation and consideration from the local government, something which opens for different practice of the same legislation. Reindeer owners who are in contact with several local governments during their migration, are confused as to how these directives will impinge on them. This type of legislation is designed to be a tool for the local communities, and not for the reindeer industry. The legislation is not oriented towards protecting the reindeer industry from disturbances etc.

In order to make use of the existing legislation, a minimal knowledge about reindeer husbandry is required. Interviews with bureaucrats in local governments supported the view of the industry that there is a general lack of knowledge in the management system. Some of the explanation could be that this is not an industry which brings big tax incomes to

the community, the industry is slightly visible in the landscape, and is often in conflict with other types of industry developments which create more jobs and more tax income.

## Summary

The situation with loss of pasture connected to infrastructure development is a major threat to the reindeer industry also in Sweden, as shown in chapter 5. A joint effort between national authorities and the reindeer industry is needed to secure the remaining grazing areas.

Predators are a growing concern to the industry. The compensation system of Sweden, which is based on the occurrence of different predators inside one pasture area, is well functioning but to make is reliable

for the reindeer owners the compensation should be based on a fixed price on each reindeer.

The Saami reindeer husbandry has always been based on the family as a social and economic unit. The development in legislation on reindeer management has reduced the family members' rights and, as a consequence, their involvement in the industry. According to the report "A New Reindeer Management Policy" (SOU 2001:101), the proposal for more economic freedom will rise the opportunities for the involvement of other family members along with the reindeer owners within the economic framework of the saami villages.

The market for reindeer meat in Sweden is favorable and the positive development of value-adding production should continue. The reindeer meat is a highly valued product, and the opportunities within the domestic market is good.

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Photo © Johnny-Leo L. Jernsletten

# Reindeer Husbandry in Finland

## Introduction

This chapter will focus on the reindeer husbandry in Finland. The reindeer areas in the north- and northeast cover 114.000 km<sup>2</sup> or 33% of Finland. It is important to bear in mind our understanding of reindeer husbandry, as discussed under 1.3 “Organisational Structure” on page 3. The fact that reindeer husbandry is conducted both by the Finnish and Saami population, and that the ways of practising reindeer husbandry vary greatly have been an extra challenge to the project.

The Finnish government has, in the same manner as Norway and Sweden, their own way of organising the reindeer husbandry and their special focus concerning official statistics. Much of the statistics differs from Norway and Sweden, but we find some overlap where it is possible to make a comparison.

The working process in Finland has been interesting and informative because the operating conditions in the industry is different from Norway and Sweden. In addition to this, the access to official statistics is more challenging because it does not exist official yearly published documents about the situation in reindeer husbandry in Finland. The statistics and information focus on the district level, and the information about family level is absent. This fact will also reflect the content of this chapter.

## Collection of Data

Due to a lack of competence in finnish language the collection of information in Finland has been challenging for the project. Most of the data available for this project is published in finnish, in the same way as

data about reindeer husbandry in Norway and Sweden is published in norwegian and swedish respectively. The Association of reindeer herding co-operatives has been a great support in the project and has helped prepare information in english.

## National Management of Reindeer Husbandry

### Organisation

#### *Reindeer Pasture Areas*

Reindeer husbandry is practised in the Province of Lapland and parts of the Province of Oulu. The Provinces of Lapland and Oulu are divided into three reindeer husbandry areas (from north to south); “Saami reindeer herding area”, “Special reindeer herding area” and “Reindeer herding area”. This is a governmental initiated classification from the 1960’s, but the reasons for this type of classification is not clear.

The explanations given differ, but they could be compressed down to the following version: In the northern part of Finland, in the area named “Saami reindeer herding area”, reindeer husbandry has priority. This means that special attention should be paid to secure this industry against other use or conflicting interests. The “Special reindeer herding area” has also a level of protection to secure the reindeer industry, and one example is that the Finnish government must consult the different districts in cases of i.e.. sale of land etc.

#### *Reindeer Co-operatives*

Reindeer husbandry is governed by the herding co-operative system. Each reindeer owner is member of a herding co-operative, and the members respective rights and responsibilities are determined on the basis of the number of reindeer owned. The 56 reindeer herding co-operatives have defined borders as well as different pastures and numbers of reindeer. All co-operatives are profit-seeking reindeer husbandry units. Each reindeer herding co-operative has its own administration, headed by the leader who is a reindeer owner appointed by the General Meeting of the herding co-operative.

The administrative board of the herding co-operative consists of the chief of district, the vice-chief and four members. The members of the board are elected

for a three year terming. At the settled meetings the co-operatives general meetings are prepared: fall meeting in September-October and spring meeting in April-May.

Besides the board, the co-operatives have foremen, counters, valuers, slaughter-house foremen and a necessary number of slaughterers.

#### *Association of Reindeer Herding Co-operatives*

All herding co-operatives are members of the Association of Reindeer Herding Co-operative - Paliskuntain Yhdisty - which is the central body. The membership is free of charge and the activity of the Association is founded from the State budget.

The General meeting, also named Reindeer Parliament, is the highest decision-making body of the Association. It consist of the chief of districts, and is assembled once a year. The main affair at the meeting is the Association’s annual reports, accounts, operating plan and financial plan for the next year. The board of the General meeting consists of the chair, vice-chair and 12 members, who are elected every third year. Two members of the board are named outside; The state representative is appointed by the Ministry of Agriculture and Forestry and a Saami representative is appointed by the Saami Delegation. In the meeting in the Association, each co-operative chief can vote in accordance with the number of reindeer in his co-operative.

The board of the Association assembles five times a year. In case of urgent matters the board can convene a meeting outside the yearly rhythm. Members of the board have one vote each.

The organisation and administration of the Finnish reindeer husbandry is presented in figure 1 and figure 2.

The total number of reindeer is regulated by the Ministry of Agriculture and Forestry, which sets a maximum number of reindeer that each herding co-operative can own in a decade. As regards the current decade, the maximum number of reindeer set by the Ministry is 203.700. The permitted number of reindeer owned by a herding co-operative member, i.e. a reindeer owner, is likewise restricted; in the southern part of the reindeer husbandry region, the maximum number is 300 reindeer while the corresponding number is 500 reindeer per each co-operative member in the northern reindeer husbandry area.

The reindeer husbandry area is limited to Russia in the east with a 750 km borderline, to Norway in the north also with a 750 km borderline, and to Sweden in

Figure 1: National Management of Reindeer Husbandry in Finland

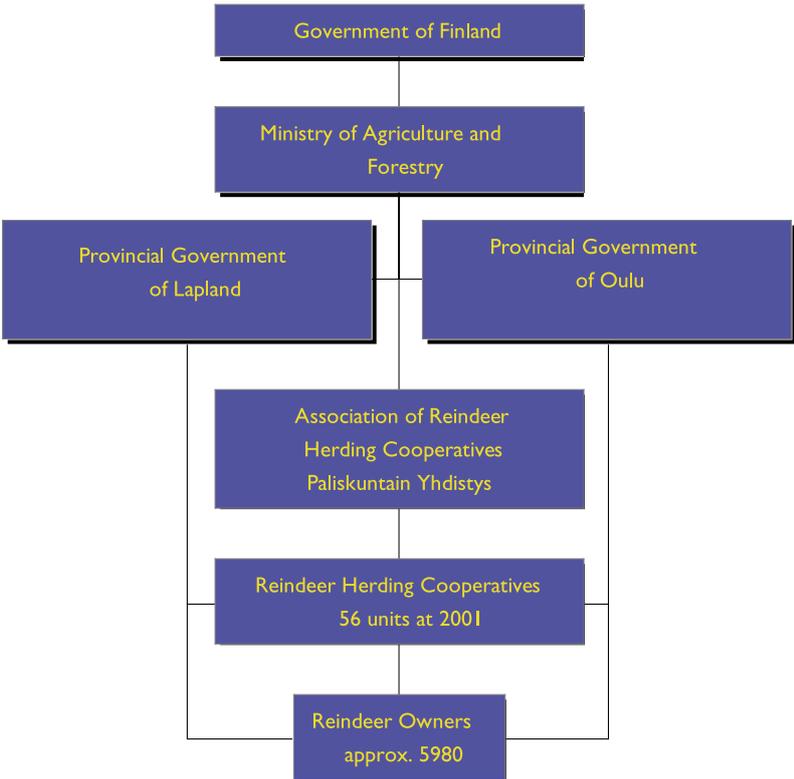
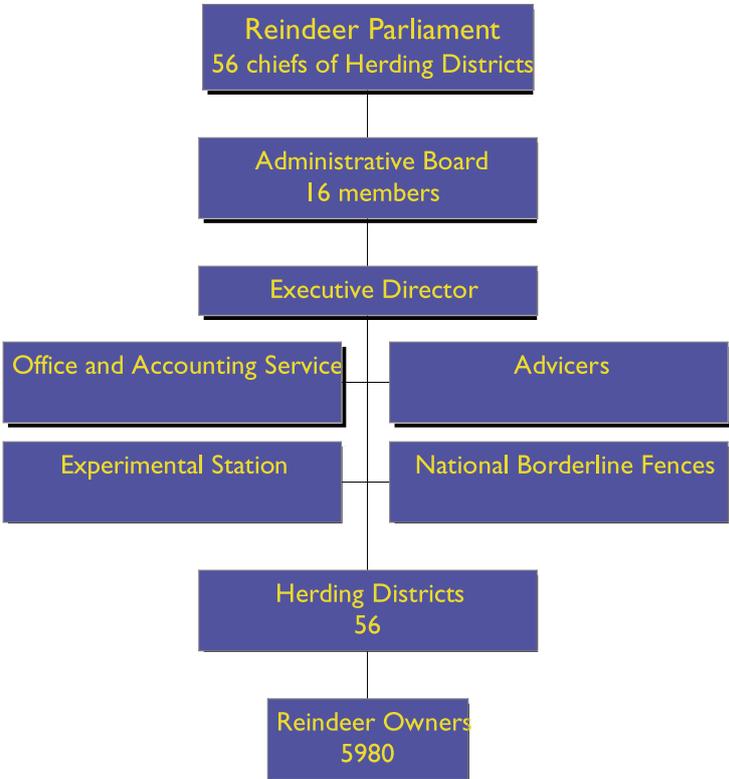


Figure 2: Administration of the Assosiation of Reindeer Hurding Co-operatives



the west with a 470 km borderline. Borderlines with Norway and Russia are equipped with fences prohibiting reindeer to wander off to the other countries. About 1200 km of these fences are maintained by Finland and are funded from the State budget.

### Reindeer Owners in Finland

As mentioned in the introduction to this chapter, both Finnish and Saami people are entitled to own reindeer and practise reindeer husbandry. This is in contrast to Norway and Sweden, where only Saami are allowed to practice reindeer husbandry. As a consequence of this everyone who wants to start with reindeer could do so, within some limitations. Firstly, the reindeer owner is required to live permanently in the community where the co-operative fully or partly is located, and secondly the reindeer owner must be accepted as a new member of the co-operative.

Another consequence of this policy is that the number of reindeer owners in Finland is much higher than in Norway and Sweden. Figure 3 shows the development of the total number of reindeer owners in Finland.

As the figure indicates it is a slightly decrease of 16% in the number of reindeer owners in Finland in the period 1995-2001. There are several reasons for this, but two conditions offers an explanation. The total number of animals and reindeer owners indicates that there are many owners with a limited number of reindeer. The figures also indicates that reindeer husbandry is practised as a supplementary income to the owners, and not as the main income. This presumption is not weakened when Nieminen and Kempainen (1998) in a paper states:

“Reindeer management differs markedly fro one area to another. In the southern reindeer herding area animal numbers are relatively low and reindeer management tends to be an auxiliary occupation.”

This situation in connection with the financial subsidy system which require a minimum of 70 reindeer to be entitled to subsidy. This may have the effect that people terminate the reindeer husbandry. According to the interviews, this is a likely development in the southern part of the reindeer area. Figure 4 give a over-

Figure 3: Development of Total Number of Reindeer Owners in Finland, 1995 - 2001

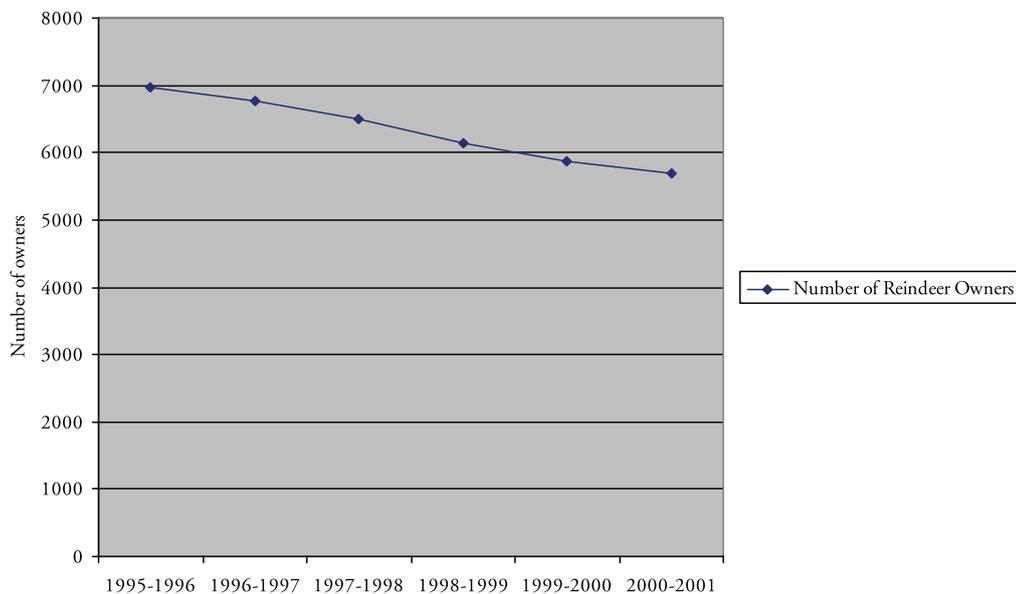


Figure 4: Number of Reindeer Owners Divided in Herd Size, 2000

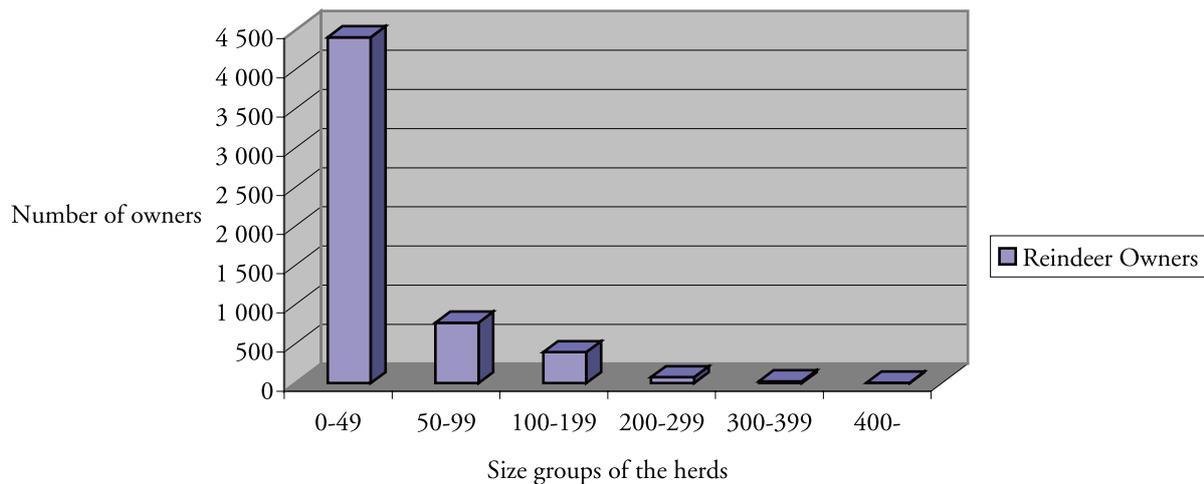
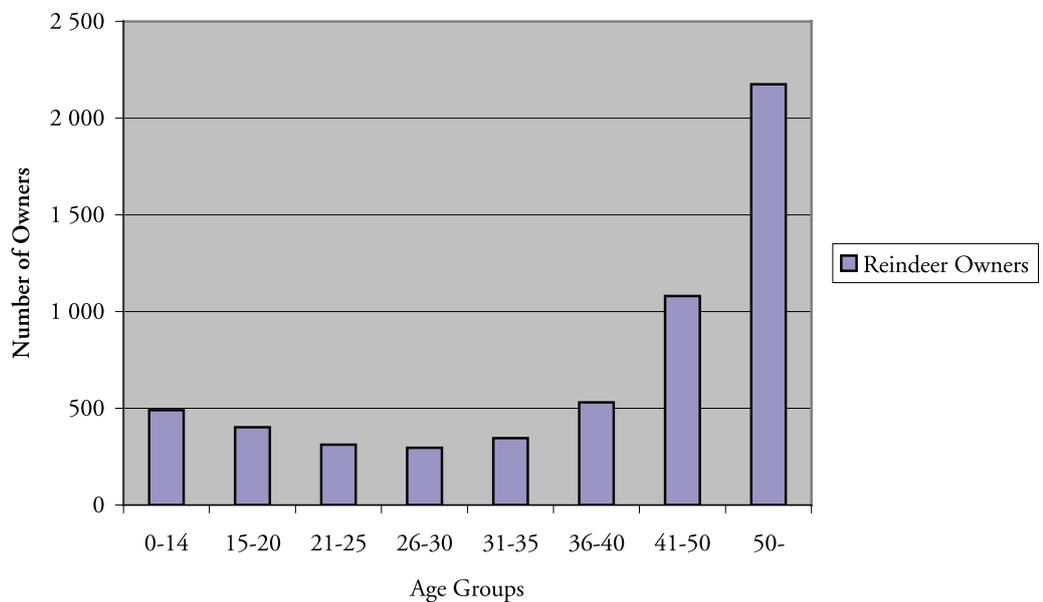


Figure 5: Number of Reindeer Owners Divided in Age Groups, 2000



view of the number of reindeer owners divided into herd size. The figures indicate the general situation in Finland, and not within the different districts. The figure actually shows that the largest group - 4.411 persons, or 77,6% of all reindeer owners - have a herd size between 1 and 49 reindeer. The next group of 772 persons, or 13,6% of all the reindeer owners, have a herd size between 50 and 99 reindeer. Only 6 persons, or 0,1% of all reindeer owners, have more than 400 reindeer in their herd.

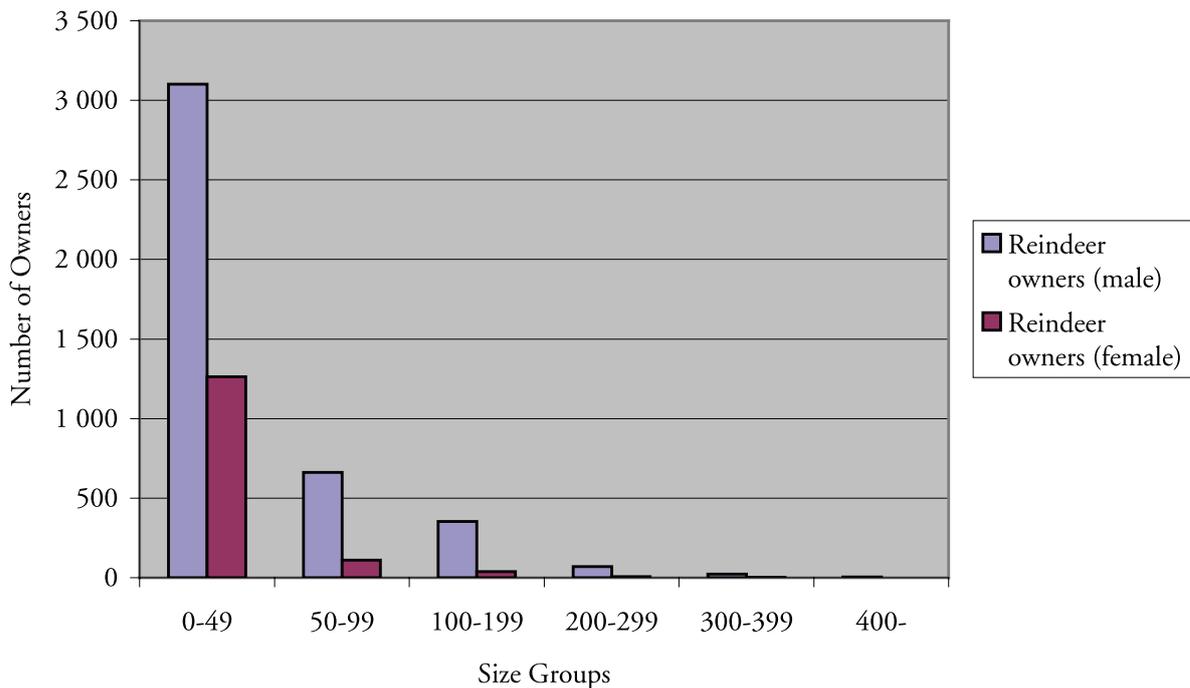
Figure 5 shows the reindeer owners divided into age groups, and gives a picture of the composition of the age of the owners. Age group 0-14 is surprisingly high with 8,7% of the total number of owners. This is more than for the age group 26-30 with 5,3% - the lowest

numbers of owners. People over 50 years constitute 39% of the owners.

According to our information around 75% of the owners are male and 25% are female. Compared with Sweden in Figure 6 the male element in Sweden is lower, with 62%. The female element in Sweden is around 35%.

Figure 6 shows the distribution of male and female reindeer owners in different size groups. The trend in Finland is quite clear were most of the reindeer owners have a herd size between 1 and 49 reindeer. 74% of the male reindeer owners, and 89% of the female owners belong to this group. Only 0.1% of both male and female owners have herds larger than 400 reindeer (5 male owners, and 1 female owner).

Figure 6: Distribution of Male and Female Reindeer Owners in Different Size Groups, 2000



Reindeer ownership is very dispersed. Of the about 7000 reindeer owners, two-thirds own fewer than 25 counted reindeer, and 3000 not even ten; only 500 own 100 or more reindeer. Two in three reindeer are owned by people with at least 50 animals. The number of reindeer owners is highest in Sodankylä, over 900; there are fewer than 700 in Inari and around 500 in Rovaniemi rural district. In Utsjoki, Enontekiö and Savukoski, reindeer owners account for just over 10 per cent of the population. The average age of reindeer owners is 42 years; weighed by number of animals owned the figures is 45. Reindeer management still attracts young people, almost 1300 reindeer owners being under 25. Age is seldom an excuse for retiring from the profession, as shown by the 850 reindeer owners over 65 years of age. Only a fifth of owners are women, which is a fairly high proportion.

This paper was presented in 1998 - 4 years ago - and it shows a significant change in the composition of reindeer owners. First of all there is a 13% decrease in number of reindeer owners in this period, from 7000 to 5682. Only 499 persons own 100 or more reindeer - exactly the same as 4 years ago. In 1998, two of three reindeer were owned by people with at least 50 animals (66%) - in 2001 three of four reindeer

are owned by people with at least 50 animals (74%). The number of reindeer owners has gone down since 1998, and Sodankylä has a decrease from over 900 to 717 owners, and Inari has dropped from fewer than 700 down to 634 owners. There is still a lot of young people inside the industry - 1300 in 1998 and 1200 in 2001 - but they only count for 21% of the owners. Almost 40% of the owners, or 2175 persons, are over age 50. This mean that age is still not an excuse for retiring from the profession. And when it comes to the proportion of female owners, we can see a positive increase from 20% to 25% in 4 years.

## Economy in Finnish Reindeer Husbandry

### Introduction

This part of the chapter will give a short introduction to the economy in reindeer husbandry in Finland. As stated for the other countries, this is not ment to be a complete review of the economy, because these are complex matters which involves several parts of the society. The project has not had the time nor the information needed for more than a presentation of the main trends in the industry.



Reindeer Roundup in Karigasniemi, Finland

Photo © Johnny-Leo L. Jernsletten

The main trend of the industry appears in a presentation from the Association of Reindeer Herders Co-operatives when they write:

One third of the amount of slaughtered reindeer, the slaughtered kilo amount, and the income from slaughtering comes from the Saami region. The regional economic volume of reindeer husbandry amounts to 200 million Finnish markka (35 million Euros) annually when further processing, trade and traffic are included in the calculation.

Reindeer husbandry has significant importance in maintaining the marginal regions inhabited. It is one of the cornerstones of Saami culture and it has a vital importance for the tourism in Northern Finland.

According to the Association, the reindeer industry is important and especially important for the northern part of Finland.

### Size of the Herds

Figure 7 gives an overview of the development of the herd size in Finland in the period 1993-2001. The official number of reindeer in 2001 is 185.000, a 13% decrease from 1993. The decrease comes after several years in the beginning of the 1990's with large herds, and with a larger impact on the pastures than the reindeer owners wanted.

If we look closer into the material on the number of reindeer in different areas of Finland, the communities of Inare and Sodankylä has decreased the herds with 19%. This is also the two largest reindeer communities in Finland. The development of the number

Figure 7: The Development of Total Number of Reindeer in Finland, 1993 - 2000

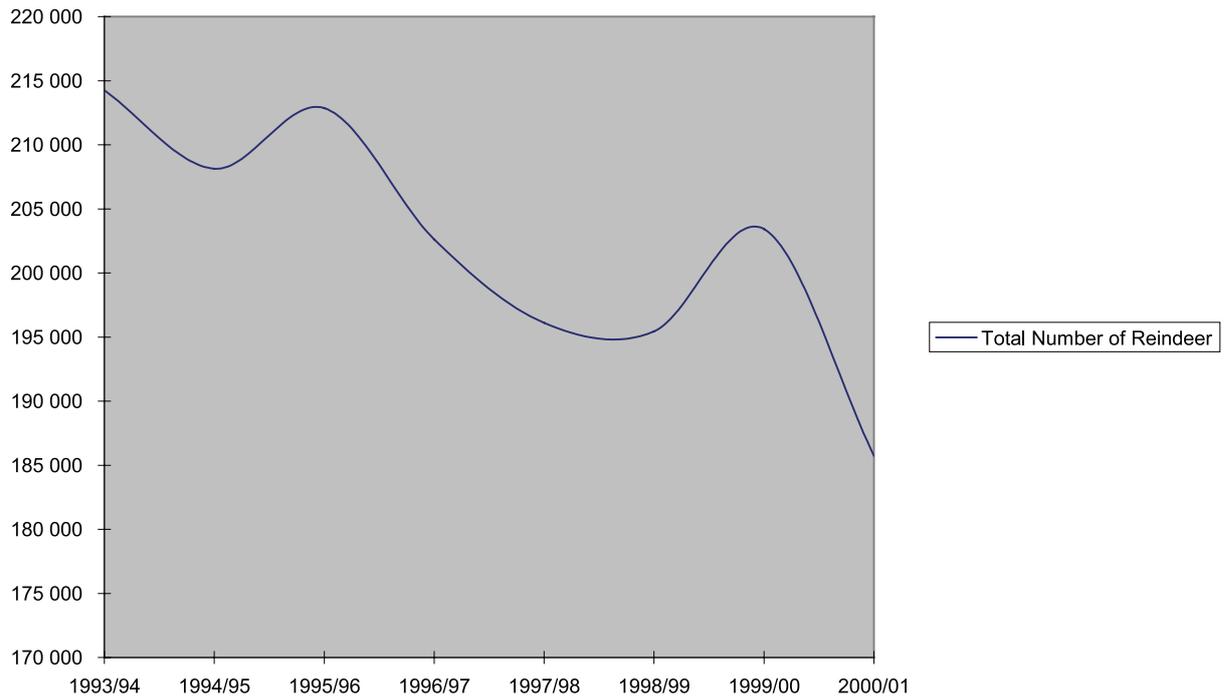
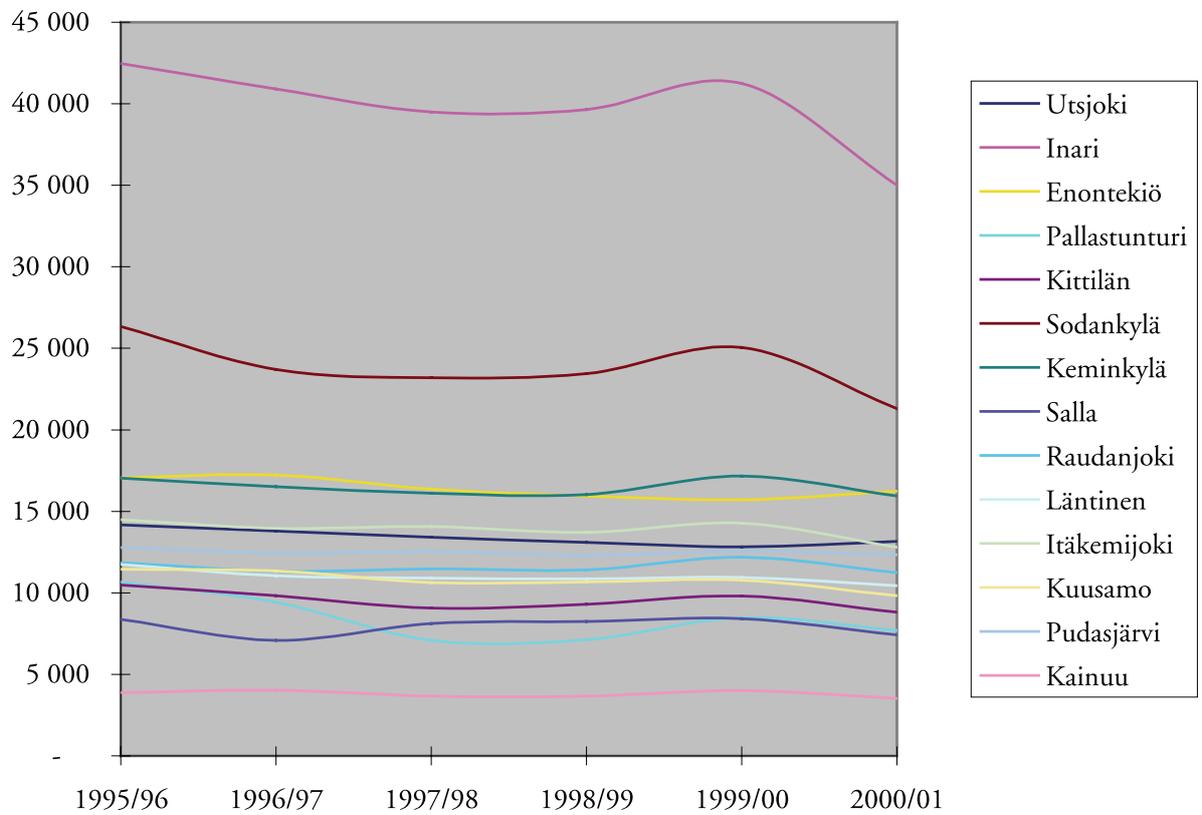


Figure 8: Number of Reindeer in Finland Divided in Reindeer Areas, 1993 - 2000



of reindeer in the different areas between 1993 and 2001 is shown in Figure 8.

The total number of reindeer in Finland has decreased 13% between 1993 and 2000, and it is natural that the total meat production has decreased in the same period. Figure 9 shows the development in the total meat production in Finland between 1990 and 2000. According to the figures from Finland it is a 45% decrease in the meat production in this period.

It is difficult to explain why the decrease is as much as 45%, and we do not have all the information necessary for an explanation. But there is several reasons that can partly explain this trend. The first, and most obvious reason is the decrease number of reindeer. The reason for a decreasing number of animals could be that the owners see or realise that the use of the pastures is too extensive and want to adjust the number of reindeer. Another reason could be one or several severe winters with bad pastures and no access to pastures resulting in heavy loss of reindeer. A third explanation could be an increase in the numbers of predators and consequently the loss of reindeer. A fourth explanation is the decrease of reindeer owners and people ending their reindeer management. All these reasons joined together will give a decreasing number of reindeer in Finland and at the same time give less meat on the market.

## Distribution of Income in the Family

The Finnish statistics are not able to provide detailed information about the distribution of income on the family level. According to the Association of Reindeer Herders Co-operatives, the collected statistics are focused towards the level of the district (Paliskunat)

and not towards the level of family. On the other hand, it has been possible, through different documents and publications, to give a description of some of the trends in Finland.

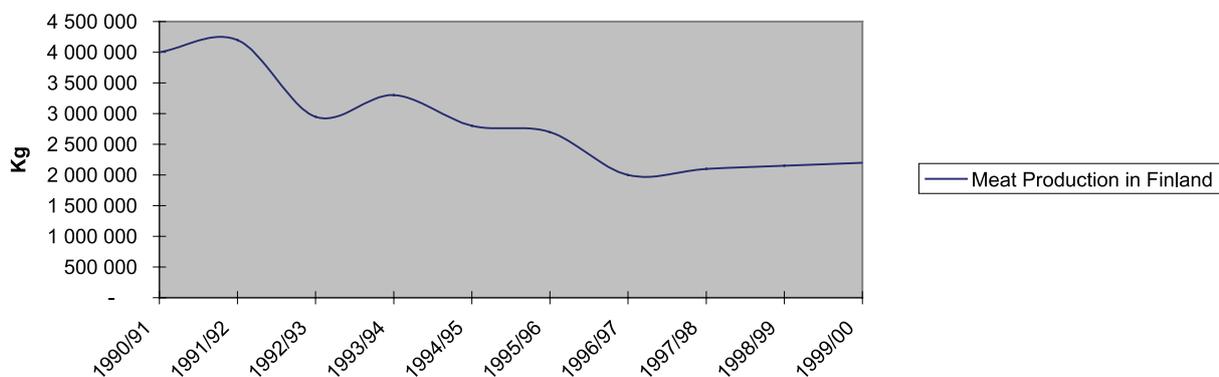
In the presentation of reindeer husbandry in Finland from the Association of Reindeer Herders Co-operatives it is stated that 1.540 families are involved in the industry. From a total number of 1.540 families, 690 families, or 45% have reindeer husbandry as their main income, and 850 families have reindeer husbandry as their additional income. The Association does not define “main” and “additional” income.

In a paper from 1998, Nieminen & Kempainen gives a glimpse of the situation in Finland back in 1994. They write:

In 1994, reindeer management provided a good half of the gross earnings of herders with more than 50 reindeer; agriculture and forestry accounted for 20%, salaried income for 12% and pensions for about 10%. Reindeer management provided as least four-fifths of the income of around 440 people. Relatively speaking, its significance for income was greatest for young owners, that is, under 35-year-olds, even though the number of animals they own is still rather low. This finding reflects the poor employment situation of young people in remote districts.

We do not have information to compare the data from 1994 with the situation today, and we are not able to see the development in the economic importance of the industry to an average family. But what we can see from the paper back in 1994, is that the situation with young people owing a rather low number of animals,

Figure 9: Total Meat Production in Finland, 1990 - 2000



is still the main picture today. Both this information, and the statistics confirm the problem with recruitments in to the industry.

### Income Connected to Reindeer Husbandry

According to the Association of Reindeer Herding Co-operatives no statistic are available on the family level. All statistics is on the Paliskunat/District level, and we will be unable the compare the information between the different countries.

#### Basic Financial Support

Despite this, we will try to give a short overview of some of the more general incomes connected to the industry. Figure 10 shows the development in the number of reindeer required by the Finnish government to receive the yearly financial subsidy. This subsidy is part of the Northern aid, and come directly from the Finnish national budget, and from the EU northern aid fundings. In 2001 the number was 60 reindeer, in 2002 it was 70 reindeer and this will probably increase to 80 reindeer in 2003. Every reindeer owner that fulfils this request will get a basic financial subsidy of 120 FIM pr. reindeer. Reindeer owners with fewer reindeer will not receive this support. According to figure 4 which shows number of owners divided in herd size, almost 80% of the owners in Finland do not fulfil the request on 70 reindeer, and will, therefore, not receive the basic subsidy in 2002.

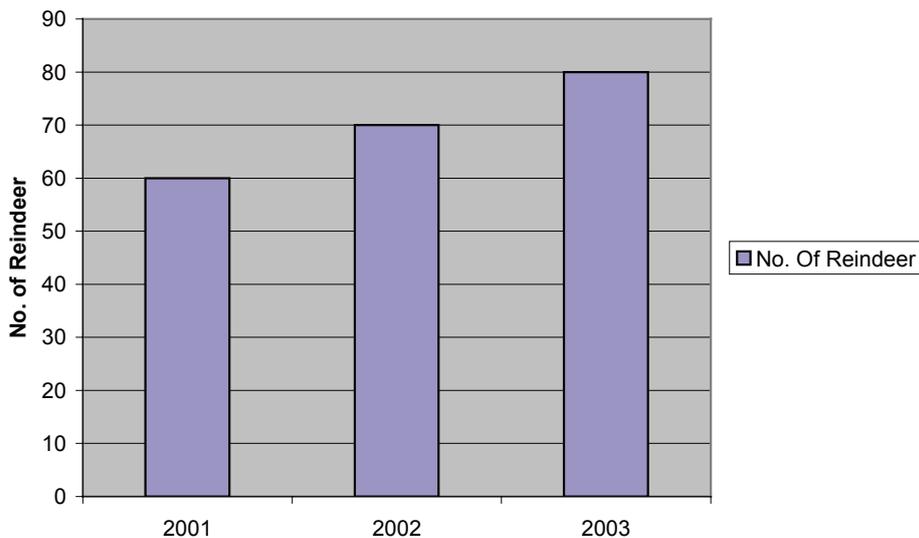
The situation is interesting if we look at the female reindeer owners and their opportunity to fulfil the request for 70 reindeer. Figure 6 shows that 89% of the female reindeer owners own 1-49 reindeer, and will not fulfil the request on 70 reindeer. Only 3% of the female owners own more than 100 reindeer, and will be entitled to subsidy. In addition there is the group of owners with 50-99 reindeer (8%) who may have the right to this basic subsidy (own more than 70 reindeer).

#### Meat Production

It should not be a surprise that meat production constitutes an important part of the income for the reindeer owners. As shown in Figure 9 the total meat production in Finland was at a peak in 1991/92, with 4.200 tons of meat, but has dropped to 2.200 tons in 2000. M. Nieminen & J. Kemppainen describe some of the reasons in 1998:

“The 1970s and ‘80s were years of rapid expansion for reindeer management. Within 15 years favourable weather conditions, anti parasite medication, supplementary feed, modern technology, calf slaughter and other factors all contributed to a vast increase in reindeer, and hence reindeer meat production, so much so that by the early ‘90s the total number of reindeer was approaching 430.000, and reindeer meat production exceeded 4 million kg. Due to excess numbers of reindeer, stocks had to be culled. At the

Figur 10: Number of Reindeer Required to Recieve Basic Financial Subsidy



same time problems arose with the processing of reindeer meat. As a result, demand slumped and prices plummeted. [...] Income from slaughtered animals amounted to FIM 58 million.”

The reindeer owners interviewed during the field trip to Finland confirmed that income from meat production is an important part of the income. Most of the slaughtered reindeer was sent to the nearest slaughtering house, and in the northern part of Finland, this could be in Norway. The price pr. kg of meat was in average 1,5 to 2 FIM more in Norway than in Finland. In average 70% of the reindeer meat is sold to slaughtering houses for production. Only 10% is registered as private sale. The rest, 20% was for private use.

#### *Compensation for loss of Reindeer*

The problem with predators is growing in Finland, but there exists a system for compensation for loss of reindeer. This system contributes to reduce the economic losses for the owners. Different compensation systems exist dependent on what causes the loss of animals.

Reindeer killed in traffic reach 3.000 each year. This means that it is almost 10 accidents every day. According to the law in Finland:

“... the reindeer are allowed to move freely around in the reindeer husbandry area and the owner of a vehicle is not entitled to compensation for the damage to his vehicle from the reindeer owner. According to Finnish law, the reindeer owner is always entitled to compensation for the loss of a reindeer from the motor insurance. This compensation is owned by the Finnish Motor Insurers Centre.”

The compensation system operates with different level of compensation depending on which animal is killed. Loss of calves, bulls or female reindeer give all different compensations to the owner.

#### *Salary/Pension*

The project has no official statistic available for incomes from salary or pension. But according to some of the reindeer owners, it is normal to have several incomes in one family. The situation when it comes to salary or pension is comparable in Norway, Sweden and Finland. Participation in the industry is often in combination with other incomes, for example small scale farming or different kinds of service industry. This view is supported by the description quoted



Preparation of Reindeer Fur for Sale

Photo © Johnny-Leo L. Jemsletten

earlier in the chapter where Niemien and Kemppainen estimated salary income to 12% and pension to about 10% of the total income to the owners.

*Handicraft/Duodji and by-products*

Due to lack of official statistic, it is difficult to get a overview over the importance of the income from handy craft and other incidental earnings. The income comes from fisheries, berry, forestry, small scale agriculture, different kind of handy craft, and reindeer fur. The price of the reindeer fur was FIM 40 a copple of years ago, but after the foot-and-mouth disease in Europe, the price increased to FIM 75. The market expectation is that the price will decrease in the future.

Figure 11 shows the distribution of the totale incomes in the finnish reindeer industry between 1994 and 2000.

**Costs Connected to Reindeer Husbandry**

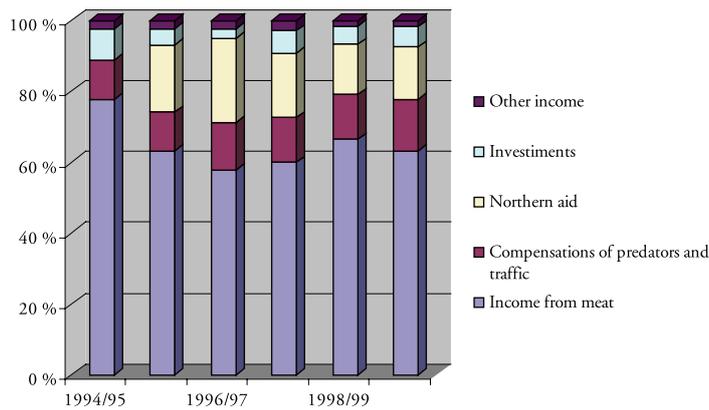
We have looked upon different sources of income in the reindeer industry in Finland, and we will now change the focus towards the cost connected to the industry. The information obtained about the cost is the total cost from the different districts in Finland. Cost connected with the family level is not available in Finland.

The figure 12 shows the distribution of costs in the finnish reindeer industry.

The classification of cost is different from Norway and Sweden, but in any case it is possible to a surtain extent to compare the cost between the countries.

The general picture concerning cost is almost the same as for Norway and Sweden. The main cost are connected to transport or mechanical equipment. The

Figur 11: Distribution of Income in the Finnish Reindeer Industry, 1994-2000



Figur 12: Distribution of Cost in the Finnish Reindeer Industry, 1994-2000

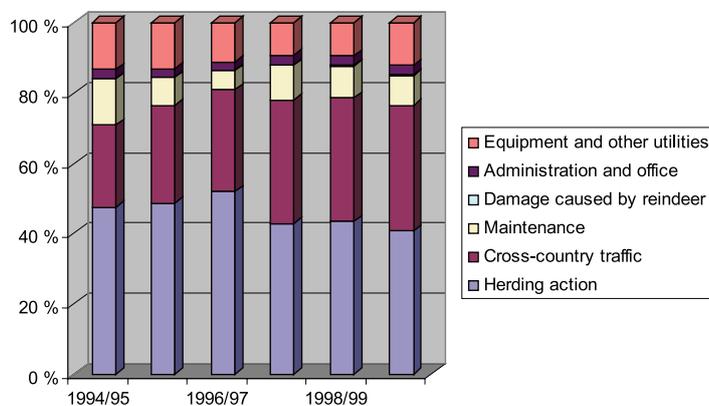


figure shows that “Herding action” and “Cross-country traffic” together constitute approximately 70-80% of the total cost. If we add “Equipment and other utilities” this will constitute over 80-90% of the cost.

## External Conditions

### Introduction

This part of the chapter will focus on the external conditions that affect reindeer husbandry in Finland. It has been difficult to find relevant information about loss of pastures, small game hunting, and the access to different markets. Information about predators has been collected and prepared by the Association of Finnish reindeer herders.

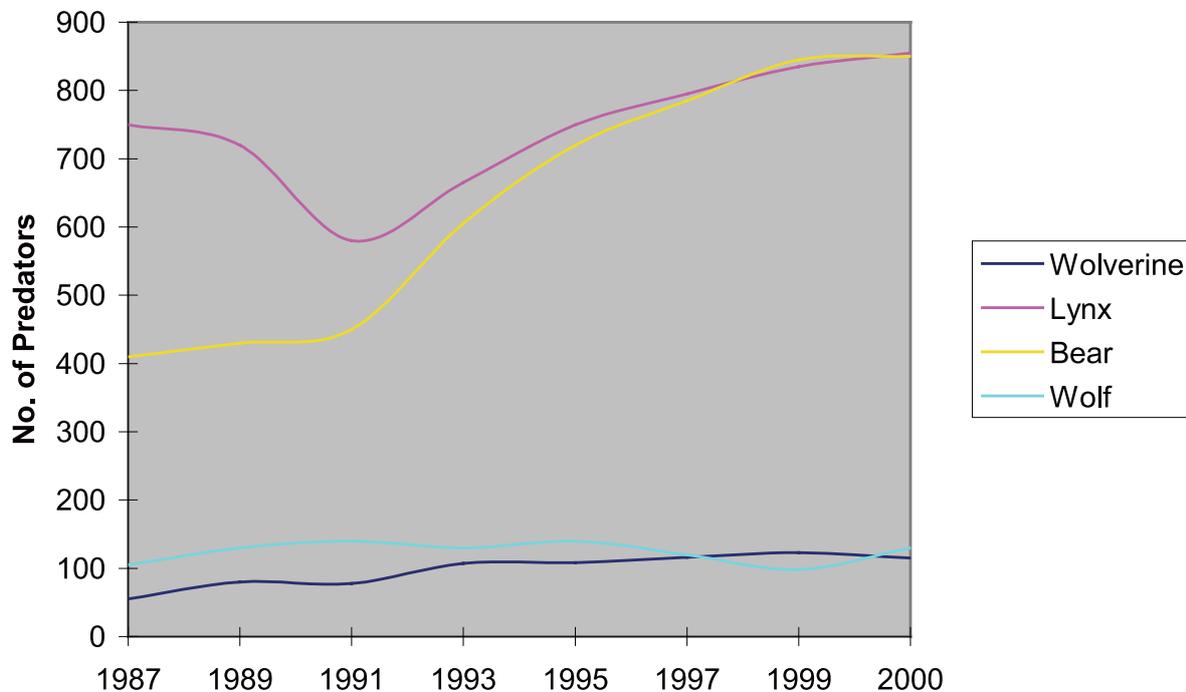
### Predators

Predators and the debate connected to predators is an important topic for the industry in Finland. The dis-

cussion and the arguments for and against predators is a repetition from what we have seen in Russia, Alaska, Norway and Sweden. Predators is a topic in most of the discussions among reindeer owners in Finland, and people have a strong engagement connected to predators. Maybe we could describe it as a hate-love relationship, because people think the predators are a natural part of the environment - they belong to this area - but when they start to harm the reindeer, it is necessary to take out those individuals.

Figure 13 shows the development of the different predators in Finland between 1987 and 2000. The figure shows an increase in the number of wolf and wolverine in this period. For wolf: from 105 to 130 individuals and for wolverine: from 55 to 115. This is an increase of 23% of wolf and 109% for wolverine. The figure for bear and lynx also show an increase in the same period. From the beginning of 1999 it is a increase in the population of bear from 450 to 850 individuals, or 89%, and the population of lynx rises from 580 to 855 individuals, or a increase of 40%. According to these numbers, Finland has experienced an average increase in predators of 65% during this period.

Figur 13: Development in Number of Predators in Finland, 1987 - 2000



Figur 14: Number of Reindeer Killed by Predators, 1987 - 2000

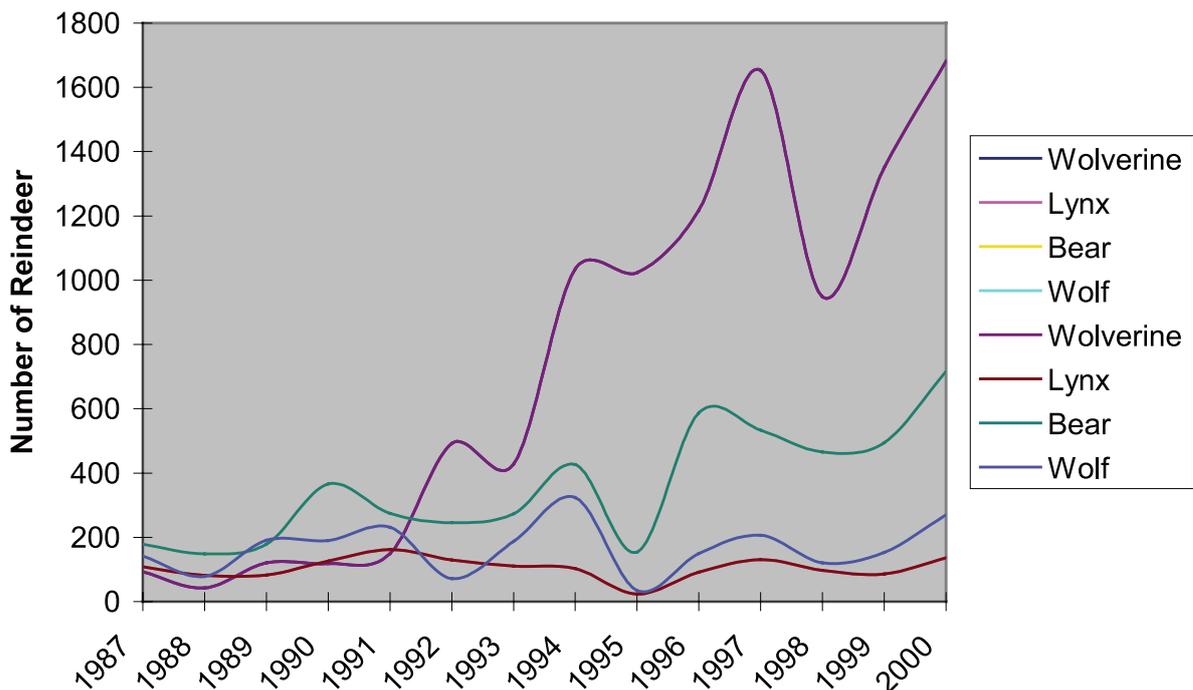


Figure 14 shows the number of reindeer killed by predators in the period 1987-2000. The main trend from this figure is an increase in loss of reindeer which corresponds to the increase in the numbers of predators.

The number of reindeer killed by wolf changes from 142 to 270 in 2000, and increase of 90%, For bear the number changes from 179 to 716, an increase of 300%, Lynx changes from 108 to 136, an increase of 26%, and finally for wolverine from 93 to 1682, an increase of 1.708%.

With numbers and figures like those just shown the debate about predators among reindeer owners is quite understandable. If these figures give a correct picture of the development in loss of reindeer, there is reasons to be concerned. An average increase of 531% loss of reindeer between 1987 and 2000 is dramatic for the industry. This is also a point made by the Association of Reindeer Herding Cooperatives:

“The State of Finland pays compensation for animals killed by predators, but the money does not compensate for the reindeer itself, which is part of the herders production machinery. Besides, predators causes much unnecessary work and disturb normal herding. Some of the reindeer killed are never recovered.”

In the quotation the Association of Reindeer Herding Co-operatives touches upon one important aspect also mentioned in the interviews in Finland. The reindeer owners get an economical compensation for the loss of the animal, but the compensation itself does not replace the productive female reindeer which was an important part of the “production machinery”. Loss of animals in traffic or to predators is more or less accidental and all the effort put into developing a structure in the herd is in vain. But there is more to this; some of the female reindeer are very valuable for the owner - having a very good reproduction rate, nice colour, good shape and producing strong calves. In addition to this the individual behaviour of the animals could be valuable in managing the herd. All these characteristics can not be compensated for economically.

### Conflicts with Forestry and Loss of Pastures

More than 75% of all the reindeer in Finland graze on pasture areas in the forest. This is a situation unlike what is found in Russia, Alaska, Norway and Sweden, and it calls upon special attention. Reindeer husbandry and forestry has seemed to be a bad mixture creating many conflicts.

The forest industry has had great impact on reindeer husbandry in Finland. The forest industry’s



Photo © Johnny-Leo L. Jemsletten

cutting of trees by big machines produces huge falling areas. Before replanting a falling area the forest floor has been ploughed to turn it around to secure an increased growth. This procedure will completely destroy the pasture for the reindeer and it will take many years before this area could be used as reindeer pasture.

Forest areas, and especially old forest areas, more than 120 years old, are important for the reindeer, especially in late winter time - late march, or during april, when the reindeer is in bad condition after a long winter. Old forests provide two important components for the reindeer, a) easily accessible pasture under a light snow cover, and b) lichen on the old trees. These two components could be the critical factors for survival or not. Even when the snow cover is hard on such places, the lichen on the old trees could save the animals. In extreme severe winters the reindeer owners had to cut down some of the trees so the reindeer could get access to the lichen.

On the other hand, reindeer grazing could also be a problem for the forest industry. After a replanting process is finished the area is vulnerable for grazing. Some type of replanted wood will attract reindeer to the area and grazing could cause damage to the

growth, and in the next instance cause economic loss to the forest industry.

It is a growing understanding of this complex problem from the forest industry and research is going on to develop new methods to be able to save the pasture areas.

### Small Game Hunting

For the discussion connected to “Small Game Hunting”, please refer to chapter 5.

### Market and Value Added Production

For the discussion connected to “Market and Value Added Production”, please refer to chapter 5.

### Legal Status in Reindeer Husbandry

The current reindeer herding act was enacted in 1990, and only a few minor changes has been done according to the Reindeer Herders Association in Finland.

The reindeer industry is not an exclusive privilege for the Saami population as in Norway and Sweden. Both Saami and Finnish people are occupied inside



Photo © Johnny-Leo L. Jernsletten

the industry. After Finland joined the EU, all citizens of the European economic area are allowed to possess reindeer. It is a requirement that the shareholder lives permanently in the community where his co-operative is located fully or partly. In addition to this, other agents like the tourist industry can own reindeer. Some of these animals do not belong to any co-operative systems and they do not graze on the area of any co-operative. Reindeer herding is allowed to be practiced within the reindeer herding area with limitations defined in the reindeer herding act, in spite of the ownership or administrative rights of the land owner. This means that the reindeer owner does not need to possess or administer the land.

The impression from the reindeer owners is, like in Norway and Sweden, that the local governments do not have the necessary knowledge about the industry. The industry is not very visible to outsiders, and it does not bring extensive tax incomes to the communities. On the other hand the industry is area intensive, and depends on the goodwill of the local government to avoid conflicts of interest with other industries. The day-to-day work within the industry depends on close networks and co-operation with administrative personnel within the government to succeed. The stability of these contacts is hard to keep through political

elections, where positions are replaced.

The progress regarding a ratification of the ILO Convention no. 169 is disturbing. Several national committees have delivered reports on the Saami rights in Finland without results. Finland has been criticised by the European Human Right Commission not to have the necessary progress in this work.

## Summary

The general situation in Finland is similar to Norway and Sweden. The main challenges are loss of pastures; loss of reindeer to predators; development of value-adding production; the question of the indigenous people's rights covered by the ILO Convention no. 169.

The situation regarding loss of pastures due to infrastructure development, is the same in Finland as in Norway and Sweden. A special concern is the extensive forest industry, which has a special impact due to the fact that 75% of the reindeer are grazing on pasture in the forest. The challenges are connected to the loss of important pastures for the reindeer, especially during late winter time. March and April are a critical period for the female reindeer. The bodyweight is low

and the calving season is approach. Inaccess to pasture can be fatal for a large number of animals in a herd, and normally the pasture inside the forest is accessible. But large fall area (open area) creates a hard snow cover and make the access to pasture difficult. In addition to this, all old forest (more than 120 years old) is gone, so the important lichen on the old trees is not available. In addition to this, the large machinery used during the snowless season is destroying the forest floor, and make the pasture useless for many years. Research in Finland on alternative logging methods is done, and progress is made.

Predators is a fast growing problem for the Finnish reindeer industry. The number of reindeer killed by predators shows a dramatic increase during the last year. The reasons behind these figures is probably a combination between a drastic increase in number of predators, and a better registration system. The situation is in any case dramatic for the industry,

and a joint initiative with the Finnish management system and the reindeer herding organisation must be arranged.

The market for reindeer meat is, like Norway and Sweden, favorable. The same critical factors, as described in Norway and Sweden, are in operation in Finland. It is a need to intensify the work towards value-adding production, and remove the industry from the status as only a primary producers. This is where the increase income to the industry will be in the future.

Finland has not ratified the ILO Convention no. 169, and the Finnish government has been criticised of the European Human Right Commission not to investigate the question about the Saami rights in Finland. Several national reports has been accomplished, but without any results. It is important to bring this work forward, and to reach a clarification on these questions.

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# Appendix A

## Report on Reindeer Herding in Mongolia - Reindeer Herding a Doomed Culture?



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### Introduction

#### Domesticated reindeer herding across borders

Domesticated reindeer herding in Mongolia takes place along the borders of the Russian autonomous republics of Tuva and Buryatia, on the south slopes of the Sayan Mountains. The area is in Tsaagan Nuur suum (district), within the Khovsgol aimag (province).

The areas used for herding reindeer lie between 51-52 degrees north (the same latitude as Belgium). This lies right on the edge of the transition between taiga and the steppe. In this particular area one can experience something as unusual as reindeer and camels grazing side by side.

The area is grass covered, leading to thinner coniferous forest (taiga) and tree lined valleys, sur-

rounded by permanently snow-clad peaks of up to 3100 metres.

At these outer limits of the reindeer's natural habitat, the climate is fairly dry. Temperatures are continental, with summer highs of up to +40°C and winter temperatures down to -40°C. The sun rises high in the sky at these southern latitudes, and as often as not the sky is cloudless. During the six month summer period this leads to extreme heat during the daytime, whilst the nights can be fairly cold, even at that time of the year. There is a lot of rainfall in the area during July and August, leading to lush grass growth and good conditions for grazing animals. As early as August there may be night frosts, and ice may form on water pools and in streams. Snow falls during October, and can reach a depth of 40-100 cm during the winter. The snow is usually quite loose and porous, which offers no problems to grazing reindeer. In some years there is still snow on the ground as late as July.

## Traditional herding culture

In Mongolia, the herding of domesticated reindeer is done by an ethnic minority, the Dukha. The Dukha are a sub-group of the Todsjin-Tuva people that are reindeer herders in the Tuva Autonomous Republic in Russia. The Dukha/Todsjin-Tuva are thought to be a mix of Turkish, Mongolian and Samojed peoples, and their language is of Turkish origin. They are closely related to two other reindeer herding peoples, the Sojot and the Tofalar.

The Dukha/Todsjin-Tuva's traditional herding areas are in the Sayan Mountains, specifically around the Bij-Kem and Ka-Kem areas, around the Jenisej springs within the Tuva Autonomous Republic in Russia, and within the Khovsgul province in Mongolia. Their herding traditions are believed to be ancient. Some experts believe that the herding of domesticated reindeer first began in the Sayan mountains, several thousand years ago. The oldest written reference to domesticated reindeer is to be found in these areas, recorded by a Chinese monk in 499 A.D.

The extent of the Dukha/Todsjin-Tuva's domestication of reindeer in the past is unknown. From the information that is available, it seems that there were around 1000 people involved in reindeer herding in the late 1800s and early 1900s. Today there are around 400 Dukha people in Mongolia, around 160-170 of these are still involved in reindeer herding.

The Dukha/Todsjin-Tuva still live a nomadic lifestyle, and live in tents out on the taiga all year round. Their tents are exactly like the lavvo of the Sami and the Nenet tjume. The herders move around in a defined pattern between seasonal grazing areas. This movement is to some degree influenced by the hunting conditions in the area. The whole family take part in the herding.

The type of herding is taiga-based, with small herds. The production of meat is of secondary importance. However, reindeer herding is the central element in their culture. Reindeer play a key role in their subsistence, which is based on hunting for food and for skins. Without reindeer it would be impossible to exploit these resources effectively. The reindeer are necessary for transport, and are a food source (the reindeer are milked daily), and are also a reserve in case of natural fluctuations in game stocks.

The and their neighbours, the Sojots and Tofalar, use the reindeer for riding and as pack animals. The type of reindeer (Woodland Reindeer) are large and strong, and well suited to the task. The Dukha/Todsjin-Tuva people are well-known for breeding

large animals. Their special breeding techniques are considered to be highly advanced, in relation to the normal methods used in breeding reindeer.

## The history of reindeer herding in Mongolia

### Historical retrospect

The Dukha/Todsjin-Tuva's herding areas have, throughout history, been of strategical interest to the dominant powers of China and Russia. Both Mongolia and Tuva were subject to Chinese rule from 1732 until 1911–12, when they broke away and declared their independence. The resulting political changes that took place were later to have a direct influence on the Dukha/Todsjin-Tuva's traditional use of their own areas.

The border between Mongolia and Tuva was formally declared in 1926/1927. This border divided their herding areas into two. When Tuva subsequently became a part of the Soviet Union, this effectively stopped the Dukha from transversing the border areas.

The Dukha remained in Mongolia at the outbreak of the second World War. At the time they were regarded almost as stateless, and attempts were made to drive them out of the country. This situation continued until 1956, until the Dukha were finally recognised as Mongolian citizens.

In Mongolia, most of the agriculture was in the form of collectives, according to the system established in the Soviet Union. Reindeer herding became politically a part of agriculture, but was not regarded as an independent industry. This may have been because of the limited extent of reindeer herding, and because hunting was the main way of life. Therefore no development plans were implemented for reindeer herding. In place of this, a fishing collective was established with a base at Tsaagan Nuur, in order to ensure a livelihood for the Dukha. Many of the Dukha gave up the nomadic way of life and sought work at the fishing collective. Many of the local population also joined the collective, which became a vital part of Mongolia's somewhat limited fishing industry.

In 1972 the fishing collective was extended to include hunting. The nomadic reindeer herders joined the collective as hunters. This had both positive and negative aspects: On the one side the domesticated reindeer herders were secured an income and other



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economic benefits from the collective. However, reindeer herding was subjected to an administration that did not always act in its best interests.

The commercialisation of reindeer herding began in 1979. The collective began to harvest velvet, which was sold to the Chinese market. This was the first step towards changing the perception of the industry.

In 1985 the status of reindeer herding changed, after the establishment of a new hunting and reindeer herding collective at Tsaagan Nuur. The aim of the collective was to secure the future of reindeer herding. The number of reindeer had sunk to 670 animals. After this time, great efforts were made to establish reindeer herding as an industry. A much needed regular veterinary service was provided. Reindeer were imported from Tuva (in 1986) in order to strengthen the breeding stock, which was considered to have been weakened by the small numbers of animals kept over a long period. All these efforts led to the rapid revitalisation of reindeer herding. Reindeer numbers increased, and reached approximately 1200 animals in 1990.

1990 marked the start of a period of change that would bring reindeer herding back to its original starting point. In that year the fishing collective was closed down, due to the over-exploitation of the fish resources. This coincided with a slump in the national economy. Many of those who had formerly worked in

the fishing collective, now went over to the hunting and reindeer herding collective and became nomads once more. Shortly after this, in 1992, this collective was also on the edge of bankruptcy. There were no more funds to pay the worker's wages. Therefore, a decision was made to allow the nomad families to take over the reindeer flocks on a lease basis. These were also allowed to run private businesses. This led to even more Dukha returning to reindeer herding, which naturally increased the strain on the industry.

### Dawn of a new era

Domesticated reindeer herding became 100% privatised in 1995. That year, the state-owned "Tsaagan Nuur hunting and reindeer herding collective" was closed down. All the reindeer formerly owned by the collective were distributed among the nomad families. The total number of reindeer at that time was approximately 900 animals.

The country was in the middle of a deep economic depression, and this naturally also greatly affected the reindeer herders. The change in numbers of reindeer during the following years shows that the situation was critical for the herders. The number of animals fell by a third, to around 620 animals in 1998. At that time around 30-40 families remained active in the

industry. Exactly how many were involved before this is not known.

The fall in reindeer numbers can be explained by the fact that there were too many people in the industry, and at the same time the game stocks fell dramatically. This in turn led to the slaughter of domesticated reindeer. It is also claimed other major influences were disease among the reindeer, and losses due to the increase in the number of predators.

Developments after 1998 show that the fall in the number of reindeer has stopped, and in fact is now on the way up again. The exact reason for this trend is unclear. One reason may be that there are fewer people involved in the industry, but there may also be other reasons. In spite of this, the situation for the reindeer herders is still extremely difficult. The number of people involved in the industry is still falling. Since 1998, 4-5 families have lost all their reindeer, and twice this number are in danger of also losing their animals.

## Analysis of current management

### Basis for use of areas

The rights to grazing land are based on customs and tradition, in the same manner as elsewhere in the country. Usage founded on tradition is a normal and commonly accepted legal principle, in a country where approximately half of the population are nomads with grazing animals. No taxes or levies are paid for the use of grazing land. The custom, or common law practice is that users of grazing land have priority for that area, but these can be taken over by others when use ceases. This is in keeping with the accepted practice in other reindeer herding areas, among them the Sami domesticated reindeer areas in Norway, Sweden and Finland.

### Grazing areas and capacity

Domesticated reindeer herding takes place in two geographically divided areas (grazing areas). The border between the two is created by the River Shishket. This river runs west from the Tsaagan Nuur lake, and creates the western spur of the river Jenisej, known on the Russian side as Malyi Jenisej (Little Jenisej).

Zuun taiga (east taiga) lies to the north of Shishket. This is known as the "oldest" reindeer herding area, since there have been reindeer herders in the area for the last 200-250 years. This area has also been used in combination with other grazing areas within the Bij-Kam area, in the Todsja region in the Tuva Republic.

Baruun taiga (west taiga) lies to the south of Shishket. Until 1940 this area was used as a winter grazing area in combination with the summer grazing areas in the Tere-Hol area in the Kaa-kem region, in the Tuva Republic.

These two grazing areas constitute a total area of approx. 8000 square kilometres (800,000 ha) divided more or less equally between the two. There are no technical installations of any significance in the area. The only other users of these areas are cattle farmers, in the southern and eastern outer regions.

The grazing capacity for reindeer in the Zuun taiga and Baruun taiga is estimated by reindeer herders and local experts at 4000-5000 animals. This estimate seems reasonable, given the total extent of the area.

## Number of reindeer and distribution

The most recent, and possibly the most certain figures for the number of reindeer are from May/June 2001. These show a total of 717 reindeer in total. This amounts to an increase of 100 animals from 1998, approximately 5% per year on average.

The number of reindeer is divided thus: 262 animals (approx. 36.5%) in Zuun taiga, and 455 animals (63.5%) in Baruun taiga. This gives an average concentration of 0.07 and 0.01 respectively, of reindeer per square kilometer of grazing area, which must be considered as a minimal utilization of the assumed resources within the country.

In 2001 the herding was organised in such a way that there were 3 herding groups in the Zuun taiga and 4 groups in the Baruun taiga. This gives an average of approximately 100 animals in each flock unit, which is the usual number for a traditional taiga herd.

The reindeer herders consisted of 36 families, thereof 20 families (55%) in the Zuun taiga, and 16 families (45%) in the Baruun taiga. The total number involved in the industry is between 160-170 persons, including children and the elderly.

The operational status was very poor for all the herding families, excepting 2 families in the Baruun taiga that each had more than 100 reindeer. This number is seen as sufficient to provide for the food needs and other requirements of the families. The



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### Reindeer – age/sex composition and growth

The sex and age composition, and growth of reindeer are important indication of the technical expertise and level of quality within the industry.

other families had between 4-28 reindeer each, with an average of 13-15 per family. In other words, none of these had enough animals to provide for their meat requirements, and were dependent on providing for 40-100% of these needs by another method. In practice, these families were dependent on hunting.

The situation for the herding families is on the whole, unstable. In spite of the recent apparent increase in the number of reindeer, approximately 11% of the herding families are without production animals, and in practice without reindeer at all, and a further 22% appear to be in danger of losing all their reindeer within the next few years. Most of those at risk (70%) are in the Zuun taiga.

The sex composition of animals in the herds seems to be reasonably good in both areas. The composition is about the same as is found in the domesticated herds in Russia. It is, as can be expected, formed from a need for animals used for transport.

The age composition of the herds is difficult to ascertain from the material currently available. Even though this appears normal, it should be considered as a possibility that there is a deficit of young animals. In this case this may affect the population of reindeer sometime in the future, although development otherwise continues normally.

The growth in reindeer numbers in 2001 was 78% in the Zuun taiga, and somewhat higher, approx. 84% in Baruun taiga, in relation to full-grown females. The



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difference in numbers can be explained by the slaughter of baby calves in the Zuun taiga. The registration in this area took place at a later date than the Baruun taiga. The calving results must be described as excellent in both areas, indicating that the condition and reproductive abilities of the females is good, in both areas. The results indicate no difference in the quality of the two grazing areas, and no negative effects related to breeding.

### Loss of reindeer

Every year there are relatively extensive losses of reindeer in both areas. The losses are due to disease within the flocks, and due to predators, mainly wolves. However the data span is too narrow to be able to make any conclusions as to the extent of losses. It is also impossible to determine if losses have had any effect on the composition of the reindeer population, in a way that may bring future consequences.

The latest reports, from the spring of 2002, indicate that the number of calves being born is low, and that the reindeer population is once again falling. This may be an indication that there is an imbalance in the age composition that is due to large losses of younger animals over a period of time, or there have been

exceptionally large losses since the last registration took place.

### Production expectations and their value

There are no records regarding the slaughter of animals or other trade of reindeer products in the area. Apart from the horn trade, it is reckoned that most of the products from the animals are used by the herders themselves.

In order to calculate the production potential, comparison studies have been made, with domesticated reindeer herding in other areas. These calculations, which naturally are made with certain reservations, show that production in total is small, in relation to the number of families involved in the industry. This illustrates more than anything else the importance of hunting, and of how dependent the reindeer herders actually are on hunting. On the other hand this also shows a normal production per reindeer in the production flock (spring flock before calving). The versatile usage of reindeer products means that production per animal is more than any other domesticated reindeer area in the world.

In relation to the herders' needs, it must be mentioned that according to the herders in the Zuun taiga,

no more than approximately 50 reindeer are required in order to provide the meat and milk requirements for a family. This is confirmed by the estimates that have been made.

It is difficult to place an actual value on production. It would appear that velvet is the only thing to be sold for money. There is a rough idea of the price of this product, but it is more uncertain with regard to the rest of production. The highest current evaluations, which are of course subject to uncertainty, paint a surprisingly positive picture of the production value. The total value is naturally low, but the relative value of each animal seems in fact to be extremely high, compared to other domesticated reindeer herding areas.

The total picture that emerges supports the local estimates of the production value. According to the local herders, a nomad family can support itself with the production from a reindeer flock of around 80-100 animals, according to information given to WRH in September 2000. Given the anticipated cost levels of in the industry in this area, this seems to be true. This confirms the supposition that the reindeer in this area have a relative value that is much higher than in other domesticated reindeer herding areas in the world.

## Other

In addition to reindeer, the herder families keep horses. The horses cannot replace reindeer on the taiga, but are necessary in order to reach the settlements out on the steppe. Here, it is often too hot for the reindeer. Horses are also used to some degree for transport, along suitable routes in the taiga. In this respect they are a welcome addition in periods when, for example, the number of reindeer are as low as today's levels.

In 2001 the nomad families owned 111 horses and 13 foals in total. Of these, 70% are owned by families based on the Zuun taiga. Even though not all families owned horses, this would appear to cover requirements.

## Prospects for the future

### The most difficult challenge

Registration made after June 2001 indicates that approximately one third of the reindeer herding families will be without reindeer in the near future. How

this will affect the industry as a whole is unclear. On the one hand, one line of thought is that this form of shedding will lead to a better balance within the reindeer population. On the other hand, there is a grave danger that the more families are without reindeer, the more impossible it will become for a community that is already under great strain. Many families are already in a difficult situation. There are very limited job possibilities in the area. It is therefore feared that a new and larger wave of families losing their reindeer will not help the industry at all, but rather be a heavy burden upon it. It should be noted that those families who are in danger of complete loss of reindeer appear to save their animals used for transport (bucks) until the very end. This may indicate that they give priority to the nomadic way of life and to hunting more than anything else.

There appears to be nothing on the horizon that can prevent this situation from happening. The central authorities maintain they are aware of the Dukhas' difficult situation, but are unable to act, given the country's current economic situation. The authorities are considering offering support to the reindeer herders by providing other animals such as sheep, goats and yak, in order to provide food and support the families whilst rebuilding the reindeer population. This plan has yet to be implemented.

There is some uncertainty as to whether this type of project would have the desired affect. From a reindeer herder perspective, this type of combination is regarded as difficult. Their experience is the same as that of the the Sami people, that the simplest type of animals to combine with reindeer are goats. Goats, however are a poor food source part from their milk. the reindeer herders are also worried that the combination of animals will lead to an increased risk of disease among the reindeer. There is every reason to be cautious.

Another kind of provision, which may have a certain effect on the maintainance of reindeer numbers, are the aid projects started by several local and international voluntary agencies. These idea is to purchase food (dried goods) and equipment for the Dukha. All projects connected to voluntary efforts are of course random, but all efforts must be regarded as having some meaning. The effect of these plans is however limited by the lack of freezing and storage facilities available in the area. There are no regulated electrical power services in Tsaagan Nuur, other than an ancient ineffective diesel driven power generator that is only in operation for a few hours a day. However,

such projects are cheap and simple to put together, and they may have a temporary positive effect for the reindeer herders.

In this situation, only import of reindeer from outside sources can effectively prevent the expected downturn in the industry. No plans have yet been made in regard to this, apart from the plan to import a limited amount of reindeer from Tuva. Importation of a larger number of animals depends on the active support of the international community.

## Prospects for hunting and trapping

Hunting and trapping are, and have always been, extremely important for the Dukha. The nomad families have until now been able to exploit the hunting grounds without too much outside competition. This is due to the fact that the areas are difficult to access for those without reindeer for transport. Their hunting has largely been for game such as deer, wild reindeer, elk, roe deer and bear, in addition to furs of which sable is the most valuable. Hunting has been an absolute necessity for maintaining their industry and culture.

Unfortunately, changes are under way that will lead to poorer prospects for the nomad families. The number of game animals is reported to be falling rapidly, at the same time the number of hunters from outside the area, among them safari hunters, is increasing. New restrictions are steadily being introduced that limit the nomad families' hunting rights. Although the hunting stocks are gradually falling, it is difficult to believe that these areas will finally be reserved for the Dukha. Hunting will become therefore less important in the future. This fact is a serious threat to the herding of domestic reindeer.

## Disease among reindeer

There have been reports from both areas of an increase in spontaneous outbreaks of disease during the summer months. These have died out when the frost has set in. For example, an incident of an unknown contagious and fatal disease among the reindeer herds in Zuun taiga during the summer of 2000, which killed 30-35 animals. Norwegian veterinary surgeons at the Institute for Arctic Veterinary Medicine in Tromsø (IAV) were given a description of the symptoms, and guessed that the disease could be due to an infectious disease (*Bacilær hemoglobinuri*) which is common among cattle and sheep. Therefore there is every reason to

believe that some of these outbreaks can be attributed to the close proximity to cattle farms. Other common diseases are lung infections and hoof rot (*necrobassilosis*). The latter is known to occur more often in flocks that are intensively herded, such as in this case.

The herders themselves believe that the increase in disease among the herds is due to several factors, among them inbreeding, which is a consequence of too few animals, weakened autoimmunity due to the harvesting of velvet, and poor physical condition and resistance to disease because of overworking the few animals they own.

All these factors, including inbreeding, which has never been seen among reindeer before, are believed to be influences on the general health of the herds. In addition, the actual method of handling the reindeer can be of importance in this case. In these areas the reindeer are kept together close to the tents at night, in order to discourage attacks by predators. This type of herding clearly leads to an increased danger of contamination.

There is reason to suppose that diseases and epidemics will not subside in the near future, but will increase instead as long as the total number of reindeer continues to be low. The associated problems may increase, because the industry lacks the funds for a veterinary service, and because according to local veterinarians, it is impossible to obtain the necessary medicines and vaccines in Mongolia.

## Production prospects

There is reason to believe that production in the industry, apart from that of velvet, will decline in the coming future. It is not expected that any of the production will be for sale, apart from velvet and horn. Regarding production of velvet, there will most likely be an increase. Products command reasonably good prices, and production potential is not completely realised. Even though the production as a whole will be minimal, the income will be very important for the nomad families. There is however some scepticism regarding this production from the reindeer herders themselves. Their opinion is that the production methods used out in the field are not good enough. They are considered to be detrimental to the animals' health. In other words there is possibly something of a "time bomb" waiting to go off. There is a possibility, which must be taken in to account, that the health condition of the herds will deteriorate if velvet production increases.



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## Tourism

In more recent years there has been a marked increase in foreign tourism in the area. Khovsgol province is regarded as one of the finest nature areas in Mongolia. Travel companies, both national and international, point out in their marketing two things that are worth visiting: Khovsgol national park and a visit to the Dukha. The Dukha, or "Tsaatan" as they are known in Mongolian, are already so established a tourist concept that the authorities have begun to consider restrictions to protect the Dukhas' culture.

The Dukha themselves have not received any real benefit from tourism. There are a few however, who have tried to create a niche market. A co-operative has

been formed, comprising of nomad families and local people from Tsagaan Nuur, with the aim of developing tourism. The co-operative has not yet managed to fully establish itself within the tourism market. In any case, it is impossible to deny that tourism can be a promising prospect for domesticated reindeer herding. The challenge will be to organise these activities in such a way that they directly benefit the nomad families.

## Recruitment and employment

Like the rest of Mongolia's inhabitants, the Dukha are a young group within the population. Current figures

show that approximately 40% of reindeer herders are children and young people under 17 years of age, of which young females represent 70% of these. On the other hand there is a deficit of unmarried adult women. The rate of unmarried women to men is approximately 1:4.

Given the current situation there will be little chance of young people moving into domesticated reindeer herding. This is in spite of the fact that the calculated grazing capacity (4000-5000 reindeer) ought to support an increase in reindeer herding. The surplus of young girls under 17 will probably lead to many of them seeking work outside the industry. However, there are no factors that indicate any immediate failure in recruitment.

Alternative employment for those who choose to leave the industry appears sparse. Cattle herding, the most important industry in the area, is most likely already overcrowded. The catastrophic failure of the formerly rich fishing resources at Tsaagan Nuur lake means that there is no real chance of creating new employment within the fishing industry. The only area that seems to have a chance of succeeding in the future is within tourism. The point is, however, that jobs need to be created first, and these will demand a totally different kind of education to that which is available in the area today.

## Education

There is much evidence that the reindeer herders are at an educational disadvantage compared to the rest of the population. This may have to do with the Dukhas' special way of life. In addition, their everyday language is somewhat different to common Mongolian. The Dukha receive no education in their mother tongue.

The education situation appears to be worsening. An interim study shows that the education system functioned at its best between 1960-80. At that time around 80% received 8 years' schooling or more. Among adult reindeer herders, around 50% have received 8 years' education or more. The education system would appear to have fallen into decline in recent years. From 1980 until 1990 the number of those having 8 years education sank to 64%. After the country went into recession in the 1990s this level fell further, to approximately 55%. Among the whole of the reindeer herders there are today only 2-3 who have completed 10 years' education and 3-4 who have any further education. The latter is largely due to the efforts of an NGO organisation in Ulanbaatar, the Mongolian Reindeer Fund, which has been very active in recruiting young Dukha people into schools and colleges.

Among the Dukha, as among other reindeer herding peoples, fear has been expressed that a long education process may drain an important resource for the industry, namely young people. On the other hand it is clear that an increase in educational standards among the reindeer herders is necessary in order to create a "safety net" around the industry. Given the current situation it is especially important to offer good educational possibilities to young girls.

## Summary and recommendations

### Difficulties facing domesticated reindeer herding

The general impression is that the Dukhas' reindeer herding industry has been subjected to extreme conditions during the 20th and 21st centuries. During this period the Dukha have seemed to be pawns in a game of geopolitical conflict of interests, that ended in the decision to divide their traditional land areas and hunting grounds into two parts. They have been subject to restrictions on hunting, which is central to their basic way of life, without any compensating efforts to reinforce their existence in other ways. They have been drawn into a collective system, in which their traditional way of life was sidelined as a non-priority. Finally, when the economic crisis in the country became marked in the early 1990s, they were left to fend for themselves, as were many others.

This new situation was especially difficult for the domesticated reindeer herding industry. It seemed to be crushing the traditional ways of reindeer herding, which stood bare and defenceless. The fact that the industry survived at all is nothing short of a miracle. An important clue which may explain the reason why, despite everything, reindeer herding still exists, can be found in statements such as this:

- We are reindeer herders, and have no wish to be anything else, said the experienced reindeer herder and mother of three Ganbat Punsal (26), during WRH's visit to the herders in Mongolia in September 2000. This apparently simple and straightforward statement is representative of the Dukha culture - they regard themselves primarily as reindeer herders, despite the fact that their way of life is dependent on hunting. Without this kind of attitude it would be impossible to summon up the determination and effort necessary to carry on when the situation is at its worst.

Developments in the 1990s show that the reindeer herding industry has been affected, and is still affected by a serious crisis. Reindeer numbers, which were already at a low level, fell by a third within just a few years. A population of around 40 families had approximately 600 reindeer between them. Almost incredibly, the fall in numbers was checked, and this trend was turned around. However, the price was high. Today, there are 36 families remaining in the industry. Among these approximately one third are at

risk of losing their livelihood. At the same time there is a danger of dramatic fall in reindeer numbers.

Domesticated reindeer herding in Mongolia is currently balanced on a knife edge. The very foundations of the industry are in danger of crumbling. An outbreak of disease among the reindeer flocks, or a failure of the game stock in one year, can be disastrous for the Dukhas' reindeer industry.

## The road ahead

The future of domesticated reindeer herding will depend on the nomad families' ability to provide for their daily needs, without taxing the herds. Reductions in reindeer numbers and the repeated outbreaks of disease and epidemics within the flocks, and losses due to predators – all these factors make this a daunting challenge. With a growth rate similar to that of the period 1998 to 2001, it will take 12 years, at least, to build up reindeer numbers to a sustainable level, even if one third of the reindeer herding families should fall away. "A sustainable level" mentioned here refers to a sufficient number of animals to provide the meat requirements for enough reindeer herders to create a sufficiently competent group to enable the industry to develop. It is clear that this is a challenge that the industry cannot manage all by itself.

In any case, it is the total number of reindeer that is the key to continued successful reindeer herding in Mongolia. If the numbers fall further, the whole of the Dukha culture is under threat. Without the reindeer, the Dukha are forced to give up their way of life. The very foundations of their culture will crumble away, and the Dukha will be erased as a race. Their own unique reindeer species will also die out.

It must be pointed out that reindeer herding in Mongolia is a viable prospect. There are sufficient grazing areas in the country to sustain an effective industry, even given the changes in hunting and trapping conditions. The grazing resources offer the possibility for professional development, and the level of competence can be maintained and developed further. Last but not least, there is a level of knowledge and strength of will among the reindeer herders to be able to adapt to any changes demanded of them.

The lack of reindeer is the single largest threat to the herding culture in Mongolia today. This threat will not be eliminated without outside help.

## Measures

Effective steps to maintain and increase the number of reindeer by farming/breeding, for example by providing enough food supplies such that reindeer are not slaughtered, and providing veterinary services to protect the flocks, will have a temporary positive effect. However, such measures will not be enough to attain the target of a stable and sustainable reindeer herding industry. The only way to do this, within a reasonable time perspective, is to bring in live animals from elsewhere.

Building up the number of reindeer to the desired level can most likely be done at limited financial cost, in relation to the expected results. However it is plain that importing animals will not be possible without professional and financial help from outside sources.

Priority measures in this case should be:

- Pilot project in order to evaluate the technical and economical aspects of the import of reindeer to Mongolia
  - The project should have the aim of establishing a programme for the introduction of live animals, to be done within a limited time space. Their tasks should include evaluating the actual need for animals, to find venture partners in connection with finance, sales and among professional groups concerned with transport, animal health and genetics. The project should also include consultation with the potential recipients, to establish a professional follow-up programme. The cost of such a pilot project is estimated at between USD 15-20,000.
- Temporary observation programme, in order to follow developments within reindeer herding in Mongolia.
  - The programme can be created as a continuation of the field surveys that were taken for the WRH in 2001, albeit with some adjustments. The programme can be combined with veterinary services in the field, as was done during the field work in 2001. Registration should be carried out over a period of a few years. The annual cost for this programme is estimated at USD 2-2.000. Including veterinary services the cost is expected to be around USD 3-3.500.

## Earlier initiatives for domesticated reindeer herding

### Animal health

Formerly, when domestic reindeer herding was included in the hunting and reindeer herding collective, there existed a special programme for veterinary services for the industry. This was considered important and vital. This service ceased after the privatisation of domesticated reindeer herding in 1995. More recently, a number of studies of reindeer-specific diseases have been made, by both local and international researchers and veterinary surgeons. Comprehensive and valuable study has been done by the veterinary staff. M. Nansalma, Ulaanbataar, and Stuart Badger, N.Z.

### Import of reindeer

There have been earlier imports of reindeer to Mongolia, both in 1962 (20 animals) and in 1986 (50 animals). The reindeer were brought in from Tuva, where there is almost identical reindeer stock. Good results were reported.

Battulga Solnoi, currently the WRH's representative in Mongolia, and Dan Plumbly from Totem People Org. USA, have been working for a couple of years on importing more reindeer from Tuva. As yet, they have not yet succeeded in finalising the project.

### Registration and development with in reindeer herding

After their visit to Mongolia in 2000, WRH took the initiative for field registration, with the aim of achieving a full overview of the situation within reindeer herding. WRH's representative in Mongolia, Battulga Solnoi, carried out extensive field registration in May/June 2001. The work was carried out in association with a local veterinary surgeon, Bayaraa, who assisted with veterinary work in the field. His task was financed by Totem People Org. The data collected is the most complete record on domesticated reindeer herding in the area in recent times. The data has been adapted and translated by Tsoigtsaikhan Purev. This data is the foundation of the analyses in this report.

## Initiatives to improve economics for reindeer herders

In Tsagaan Nuur, the initiative was taken to create a co-operative, Tsaachin Corp., in order to improve the financial situation for reindeer herders, by organising activity tourism and the sale of hand made goods and other goods from the reindeer herding industry. There are currently 18 reindeer herding families that are members of the co-operative. The co-operative has had a difficult start and has yet to get the project properly started. The primus motor, and initial leader for the project, was the current mayor of Tsaagan Nuur, Erdenjav Yamadorm.

### Education and schooling

The Mongolian Reindeer Fund (MRF) and its leader Sukhbaatar O., and former employee Battulga S. have co-operated with international organisations to build a new school in Tsaagan Nuur. The old school burnt down in 1991. It is this school that the reindeer herder's children attend. Without the efforts of the MRF, there would be no local schooling in Tsaagan Nuur. MRF are currently working on a project for a new dormitory facility for the school, since the old one is in disrepair. UNDP are co-operating with MRF on this project.

### Other projects

Among other projects that have been created to assist the reindeer herders in Mongolia are the help programme for food, equipment and medicine supplies and health checks for the herders. These programmes have largely been financed by foreign organisations. In many of these projects, MRF represented by Sukhbaatar O., and Battulga S. have been central partners on the Mongolian side.

### Measures taken by the authorities

WRH received information from a central source in Ulaanbaatar in 2000, that no official programmes were currently being implemented for the domesticated reindeer industry and for the reindeer herders. The authorities stated that they were aware of the current difficult situation for the Dukha, but were unable to contribute significantly, given the current economic situation in Mongolia. The authorities stated also that here have been a few pilot projects to determine

the possibilities for combining reindeer herding with other animals, with a view to improving food supplies and for increasing reindeer numbers. These projects are currently shelved.



## RECOMMENDATIONS FROM THE INTERNATIONAL STEERING COMMITTEE

After consideration of the report on Sustainable Reindeer Husbandry, the International Steering Committee (ISC) makes the following recommendations:

- Concerned that the viability of traditional reindeer husbandry is deteriorating throughout much of the circumpolar North. There is a risk that this form of land use will vanish altogether in some areas. Special efforts by member countries are required to rectify this situation.
- Encourages the Arctic Council to acknowledge the value of the traditional reindeer husbandry of the arctic peoples, which is closely connected to the ecology, economy and culture in the circumpolar region. The rebuilding of the family based reindeer husbandry is of great importance, and needs to be paid more attention.
- Encourages the Arctic Council to provide a framework for an international meeting place to facilitate a dialog between national authorities and the reindeer industry in the circumpolar North.
- Recognises that the rate of degradation and loss of reindeer pasture is accelerating in many areas. The ISC will call attention to the need for securing and maintenance of reindeer pasture. International management of pasture areas, especially where these span national borders, can be an important step towards the achievement of sustainable reindeer husbandry.
- Recognises the need to develop a more comprehensive approach to the management of reindeer husbandry. Furthermore encourages the development of the educational system and enhance the flow of knowledge between herders, scientists and managers.
- Recognises the need to develop or improve already existing legislation that aims to protect and enhance the life and culture of reindeer peoples.
- Recognises the need to increase awareness of the market potential of reindeer products and to stimulate the process of adding value to these products.
- Draws attention to the need for better management plans and scientific programmes to secure the co-existence of reindeer husbandry with predators, wild reindeer and caribou.
- Recognises the importance of existing international co-operation between Arctic nations. Bilateral agreements could be extended into new areas of co-operation for land use and resource management.
- Encourages the development of one or more international centres for traditional reindeer husbandry.
- Encourages the reindeer industry to continue the positive development in adjusting the number of reindeer to a sustainable level in order to preserve the pastures for future generations.

