



SUSTAINABLE REINDEER HUSBANDRY

SUMMARY REPORT



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SUSTAINABLE REINDEER HUSBANDRY SUMMARY REPORT

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.

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 Sveta, 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 coordination team for the North-Western sector of Academy of Agriculture Sciences, St. Petersburg
- Nina Hellström, 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 Klovov, 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.

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 policy 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 Sweden, Finland, Russia, Alaska and Norway, 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.

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

The Basis for the Report

The reindeer industry is an important part of the societies in Russia, Alaska, Norway, Sweden and Finland, but a rather “invisible” part in comparison to other industries. At the same time, this “invisible” industry is an area intensive industry dependent on huge 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, has clearly shown us 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 to survive. This is the case in the eastern part of Russia, 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 emphasise this in the report.

The point could be illustrated by some of the questions put forward in a questionnaire answered by Swedish reindeer owners back in 1998. We 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 again 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 handicrafts 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 report will also show the exceptional diversity found inside the reindeer industry in the circumpolar area. All the reindeer herding societies in this area are by no means a homogeneous mass that will react in one particular way to external pressures, or changed market conditions for that matter, but must be considered equally heterogeneous as groups found in any other society. This is an important point that also will be confirmed through 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.”

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. Our challenge in describing this is even greater since a considerable variations is found inside one country, or even inside one pasture area.

The use of different concepts to describe the work in the industry could also hold a hidden classification of people. Such a classification involves a “ranking” situation between peoples, and this will be taken notice of. We have tried to avoid this through a flexible approach to our description of the management systems. Reindeer herding is used to emphasize the con-

crete 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. 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.

Russia

Introduction

Reindeer husbandry is the basis of the cultures of many northern indigenous peoples, allowing them to live in harmony with the extremely severe natural conditions of the Far North. In Russia indigenous peoples have various traditions, and wide experiences of reindeer husbandry in a diversity of landscapes; in tundra, forest-tundra, taiga and mountain areas. For many peoples the reindeer economy is the major factor of ethnic consolidation. Without it, they would already have been assimilated into the dominant society.

Representatives of 18 ethnic peoples are today engaged in reindeer husbandry in Russia. 16 of these peoples are on the official list of indigenous small-numbered peoples of the North. In addition, separate groups of Komi and Yakuts are also engaged in reindeer husbandry (these peoples are not on the list concerned, because their number exceeds 50.000). Russians are not engaged in reindeer husbandry, but they often work in reindeer husbandry enterprises as administrative officials and as specialists (veterinaries, zootechnicians, accountants) or work with equipment (mechanics, drivers of tractors, land-rovers, etc.). Nenets, Saami, Khants, Dolgans, Evens, Evenks, Chukchi, and Koriaks have cultural traditions closely connected with reindeer husbandry. Their mode of life and economy depend mostly on reindeer husbandry enterprises.

Changes in number of domesticated reindeer and modern recession of reindeer husbandry in Russia

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

The first recession within reindeer husbandry in Russia was in the 1930's, when reindeer were trans-

ferred from private to public ownership. The collectivization was a very painful process for reindeer herding indigenous peoples, especially at the initial stage. As a result, the total number of domesticated reindeer in Russia decreased from 2.195.000 animals in 1927 to 1.434.700 in 1934. Then the total number of domesticated reindeer increased steadily. In the 1960's and 1980's there were more than 2 million reindeer and in the period 1968-1972 it was at the maximum (more than 2.400.000). In the same the number of privately owned reindeer was at its lowest (11-13%).

Although initially the reindeer herding indigenous peoples were still passively opposed to public reindeer herding, they began to get accustomed to it gradually. The Soviet government paid great attention and allocated large sums of money into the development of reindeer herding in collective and state farms (kolхозes and sovkhoses). Various zootechnic and veterinary procedures were carried out on a wide scale. In particular, extensive work was done in overcoming reindeer diseases, like anthrax, scabies, brucellosis, necrobacillosis. Great attention was paid to 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, air planes and helicopters, radio communication, and electric power supply.

Unfortunately, the Soviet period was characterized by purposeful struggle against the nomadism, which was the reindeer herders' normal way of life in the Russian North. This resulted in quite negative consequences. The system of traditional family life of the herders, and of the transition of traditional skills from elder to younger generations was undermined. It was quite unnatural when the so-called shift system was introduced and the herders' families were divided: the men were in the herds, while the women and children lived in specially built settlements.

Another difficulty was that together with the development of large-herds and meat productive reindeer husbandry in the tundra and forest-tundra, the 1970-1980's were characterized by the degradation of reindeer husbandry in the taiga. The reasons were especially of economic character. In the taiga, reindeer husbandry was not a meat productive industry, but mostly a transport and subsistence economy. The development of power-driven transport, especially the

appearance of snow mobiles, dramatically reduced the resident populations need for transport reindeer. By 1989 the taiga reindeer husbandry was reduced to the half, down to the level of 100-150.000 reindeer (in the 1970's there were 300.000 reindeer). The forage capacity of the taiga reindeer pastures allows successfully grazing of at least 1-1.5 million domesticated reindeer.

In the 1990's, when the transformation into "market economy" began, the situation in reindeer husbandry changed dramatically: the state support of reindeer husbandry enterprises practically stopped, prices for fuel, transport and all kinds of technical equipment (including snowmobiles, cross-country vehicles, etc.) increased several times, possibilities to sell the meat and other products were reduced and the work of the enterprises was disturbed by reorganization. Decline and dissolution of the kolkhozes and sovkhoses resulted in significant reduction of reindeer stock, and a partial return to private ownership of reindeer herds. Today, private-owned reindeer constitute almost 50% of the total number. Until now, the development of private rural economy in Russia has been nearly blocked by unfavourable social and economic conditions. The number of reindeer is commonly declining. In 2001 it was only 1.196.000, i. e. 48 % of the maximum number - 2.467.000 in 1969.

Global changes have influenced on the geographical disposition of reindeer husbandry. The reindeer husbandry areas of Russia can be divided into three zones, which differ concerning the state of the industry, trends of change and perspectives on future development.

The North-West Zone

The North-western zone includes tundras and forest tundras from the western borders of the Russian Federation (RF) to the Yenisei River. This is the territory of the Saami, the Nenets, and the Komi-izhemtsy reindeer husbandry. Although this region is under intensive exploration of gas and petroleum, reindeer husbandry here is comparatively stable. The number of reindeer in this territory has remained constant or been slightly reduced during the last decade. In two districts in the Yamal-Nenets Autonomous Okrug (Yamalski, Tazovski) the number of animals has grown gradually. The economic conditions for reindeer husbandry are comparatively favourable because of the market condition. Particularly it is connected with a high level of industrial development of the region, where there is intensive exploitation of gas and petroleum (Yamal-Nenetski and Nenetski A. O.). The main

factors that restrain it is storage, processing and sale of reindeer meat. There is also lack of pastures in several districts.

The North-East Zone

The North-eastern zone includes territories of tundra, forest tundra, and northern mountainous taiga to the east of the Yenisei River. Meat productive reindeer husbandry is the occupation of the Evens, Chukchi, and Koriaks. The number of reindeer is reducing rapidly and impoverishment is connected with the reindeer husbandry of the indigenous population. To stabilize the situation and stop the shortening number of reindeer, financial support for reindeer herders families from regional budgets is granted. But there are no obvious results. Perspectives of the industry 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 part of a common economic unit.

The Siberian Taiga Zone

The Siberian Taiga zone includes all reindeer husbandry regions of the Siberian taiga (except northern mountainous territories). Here, many indigenous peoples are engaged in reindeer husbandry. In the European part of the territory taiga reindeer husbandry has disappeared. In the Siberian taiga it has rapidly diminished, its area has been divided into separate isolated lots with a few hundred reindeer on each. But even these become smaller and more dispersed. In many taiga districts where there used to be reindeer husbandry, there are no reindeer at all. The Toflars' reindeer husbandry (in Irkutskaya oblast) is nearly extinct; these reindeer used to be one of the strongest and largest reindeer on earth.

Management

Local Level

On the local level management and administration of the reindeer herding industry is based on collectives of workers, engaged in management of a single herd. The main form of such collectives is the reindeer herding brigade. In recent years large families or several related families of herders have acted as a brigade. Brigade completes technological cycle of reindeer husbandry during one year. The appointed plot of pastures of the enterprise, reindeer herd, buildings, hardware and inventory are assigned to the brigade. The number of herders in one brigade differ between regions and are, in most cases, independent of the number of reindeer

in the herd. A normal brigade could consist of 4 to 10 men and several women – so-called chum-workers.

The management control of the brigades is executed from the head of the enterprise to brigadiers through senior specialists (chief zootechnician and veterinarian), radio dispatcher and specialists, assigned to the brigades.

The leader (director, chairman of the board) of present-day reindeer herding enterprises manages its activity on the base of undivided authority according to a working plan for a current calendar year, approved by the enterprise and coordinated with a head of the local administration. In the collective property enterprises a general meeting of owners (shareholders) is a very important management element. Unfortunately, in most of post-socialist enterprises workers-owners do not quite understand the role and importance of this superior management body of the enterprise.

Regional Level

On the regional level, reindeer management is executed by the agricultural administrations of the Subjects of RF (in the Republics – by Ministries of Agriculture). Committees of land-use and land resources are responsible for the use of reindeer pastures. In the regions with districts or other administrative divisions, there are additional management units, such as departments and agricultural administrations of the district. Regional and district administrations have a staff of specialists in reindeer husbandry, veterinarian service and, ideally, financial and legal consultants. Unfortunately, most of the regions agricultural administrations are at best understaffed with specialists on reindeer herding. Two points should be noted here. First, the structure described above is an ideal for state management of enterprises, however, it is not convenient for the management of private reindeer husbandry. Second, in the taiga, where reindeer herding has an auxiliary function, it is often without interest to agricultural administrations.

Federal Level

On the federal level, management of reindeer husbandry, as a specific branch of agriculture, is carried out by the Ministry of Agriculture of the RF through the Department of regional interaction. Federal state reindeer management was most effective during the period 1961-1991. At that time there was a State Department of the North within the Ministry of Agriculture. In its structure there were departments of planned-economical and book-keeping works, mate-

rial support and capital construction, zooveterinarian measures, technological processing of production, and personnel training. Today, there are only seven persons within the Ministry of Agriculture dealing with the issues of development of reindeer husbandry, and none of them are directly responsible for the industry.

Forms of ownership of reindeer and assigning of pastures

There are three forms of ownership for reindeer in Russia today: state ownership, public ownership, and private ownership.

A state ownership is preserved mostly in the enterprises, which were transformed after privatization into unitary ones of municipal or regional subordination. In state enterprises reindeer herders are not the owners, but employees.

Public ownership includes most reindeer, formerly owned by collective and state farms. As a result of the privatization, joint enterprises and agricultural producers' co-operatives have been created on the base of the reindeer husbandry of kolhhozes and sovkhoses. In reality, there is for the reindeer herders, no important difference between state and public forms of ownership. The herders have a small number of shares, and no influence on results of voting at stockholders meetings. Directors of public enterprises are often appointed by administrative organs, but not elected.

Private ownership appears in personal reindeer ownership, as well as in new forms, like the ownership of reindeer by farmers' enterprises, clan communities, unions and other private associations. Personal reindeer usually belong to a single herder working for a reindeer husbandry enterprise (or to someone of his relatives). Such reindeer are herded within the herds of the enterprise where the owners work. However, private owners can run their independent economy without working for any association.

The pastures of the enterprises are in the perpetual tenure of the enterprise, but belong to the state. Appointed land areas are assigned to enterprises on the base of long-term rent (sometimes general tenancy) with succession. A usual term is 25-50 years. Personal reindeer owners have the most complicated situation concerning 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.

State support of reindeer husbandry

The main type of state support to reindeer herding

enterprises is direct grants for agricultural production. In 2001 a separate amount of 70 billion rubles was included into the federal budget for support of reindeer husbandry (in 2000 – 10 billion rubles). This gives an average state support of 110 rubles (about 3.7 USD) for each state and public owned reindeer. Personal owned reindeer are not granted state support.

In some regions local budgets also appropriate direct grants for the support of reindeer husbandry. In addition to the direct grants, recovering of the transport component is the prime cost of the northern reindeer husbandry production, and it covers up to 60 %. For example, in Nenetsky AO 80 % of the transport costs for the delivery of reindeer meat to Narjan-Mar (the capital of the Okrug) are recovered.

Capital investments in reindeer husbandry

The reindeer husbandry can not obtain commercial credits, this is why it is very important to assign state means for the development of capital construction in the reindeer husbandry. After the default in 1998 a sharp decrease in capital investments in agriculture and reindeer herding in particular took place. During the last three years no slaughter houses have been built. Now, the main capital investments in the industry are provided by the Federal purpose programme "Economic and social development of indigenous peoples of the North until 2011" (N 564, 27.07.2001). The main executors of the Programme are ministries of RF, and executive authorities of subjects of RF. The main objectives of the program are:

- the development of reindeer herding and traditional activities and handicrafts, complex processing of the production and preservation of environment and nature resources;
- the creation of trading stations and the development of similar forms of trade and barter; the development of market infrastructure;
- the development of social infrastructure and health services, the development of national culture, perfection of the educational system;
- subsistent energy supply to indigenous peoples of the North and development of communications.

The total financing of the Programme amounts to 2.744 billion rubles (about 88 billion USD). According to the plan more than 80% of the means will be spent on capital inputs, about 4% are for research activities and developments, the rest of the means will go to cover other current costs. In addition to this,

regional authorities have their own programs for reindeer husbandry development.

Economy

The economic efficiency of reindeer husbandry can be measured:

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

The same reindeer stock can yield three times and even more depending on husbandry intensity, meaning herders' brigade skill, experience and material/technical supply. During the last decade, intensity of reindeer husbandry in all reindeer husbandry enterprises of Russia fell dramatically. Even in enterprises of 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 1970-1980's – 89%); the calf crop (in respective years) was 52 and 67. As a result, besides a decrease in domesticated reindeer numbers, 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.

The income is dependent on the purchase price of meat. The last few years, reindeer meat has been sold in Northern Russia at wholesale prices 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. As a result, most of the reindeer meat productive enterprises are already below sufficiency level. Only the few, more efficient of them manage to remain stable.

Due to low current prices of meat, reindeer husbandry in the taiga zone, with their small herds (500–1.000 animals), can not yield the necessary profit even at a high level of intensity. Another result is extreme poverty of herders families, especially in the North-eastern regions and in the Taiga zone. Usually a reindeer husbandry enterprise spends about 50% (maximum – 60%) of the total income received from selling meat to pay salaries to brigade members. This means that in the present situation a herder's salary can not amount to more than 600-800 USD a year, although according to a calculation made by Russian economists (Syrovatski, 2000), the subsistence minimum of herders with family is about 1900 USD a

year. To survive, the indigenous population is compelled to return from reindeer husbandry to economic activity such as subsistence fishery and hunting close to the villages. Many families already live without tea, bread and sugar. In many places the conditions are so critical that all domesticated reindeer have been slaughtered and eaten. The worst situation is in the North-eastern regions, where the planned economy was organized most effectively before the reforms. In these areas all domestic reindeer were concentrated in the state farms, which were large and well supplied with engineering. Many facilities were applied easing the work of reindeer herders, but simultaneously lowering their adaptation. For example, the constant use of tractors and cross-country vehicles made the training of transport reindeer unnecessary, the construction of fences on the taiga disaccustomed the domestic reindeer to keep in compact groups on pasturing places, etc.

Another situation has developed in some areas of the Nenets reindeer husbandry, where the strong tradition of the private reindeer economy was continued even under the planned economy. There the reforms have given an impulse to growth in the private reindeer herds.

However, profitability of the reindeer husbandry could be considerably increased, besides reindeer meat, of other kinds of products: viscera, deerskins, heads, dried antlers, velvet antlers, kamuses, etc. The total cost of these products is about 50% of the meat cost (Syrovatskiy, 2000, p.363) and the proceeds might be 1.5 times larger. In such a case, it is possible to keep reindeer husbandry 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 difficult to estimate. But such technologies might be profitable only under the conditions that much more reindeer are slaughtered. Therefore, such technologies could considerably elevate profitability of large herd reindeer husbandry in the tundra, but they can not give the total solution to the problems of the taiga reindeer husbandry.

External conditions

Wild reindeer

Besides domesticated reindeer, there is a large number of wild reindeer in Russia, which also play an important role in the life of northern indigenous peoples.

Recently the number of domesticated reindeer was about two times higher than the wild ones. In the 1980's there were about 2 million domesticated and 1 million wild reindeer.

Today the total populations of domesticated and wild reindeer are nearly equal. According to official data (1999) there were 1.232.000 wild reindeer in Russia, but the number is quite possibly underestimated.

On the whole, the wild reindeer range in Russia comprises nearly the entire tundra, forest-tundra, and taiga zones, but the main part of its population (about 85%) is concentrated in three large regions of Taimyr, Northern Yakutia and Central Chukotka.

At present the Taimyr population remains the largest in Russia and, maybe, in the world. In the last 20 years, it has numbered about 500-600.000. There are different assessments of the actual size of this population (from 354.000 to 1.082.000 animals). Probably the number is about 800.000-1.000.000.

On the basis of the Taimyr population, a large-scale commercial hunting of wild reindeer was developed in the 1970's. It began providing more production than all reindeer husbandry of both Central and West Siberia.

In all other regions (except Taimyr, Yakutia, and Chukotka) the wild reindeer range has been broken down into numerous isolated areas becoming smaller and smaller. The process of such insularisation is continuing and in many regions the number of wild reindeer is decreasing.

The wild and domesticated reindeer, as ecological antagonists, constantly confront each other. The nature of these confrontations are discussed in a considerable amount of scientific literature, numbering over fifty books (Michel 1938, Sdobnikov 1933, 1939, Drury 1949, Geller 1969, Syroechkovsky 1984, Syroechkovskii 1995).

The main confrontations are :

- domesticated reindeer are lead away by wild reindeer;
- mutually damaging of the pastures,
- contributing to preservation of various nidi of infectious diseases for each other.

The first one is the most serious. Losses of domesticated reindeer sharply increase when large herds of wild reindeer change their usual routes of migration and pass to other areas where reindeer herders are not prepared for their invasion.

According to information from reindeer herders, the wild reindeer move en masse, no frightening meas-

ure is effective against them. Rockets were burned, rifles fired - all in vain. Nevertheless most often wild reindeer lead away separate groups of domesticated animals which before have been "cut off" from their herd and pastured out of herders' control. When herders watched their herd closely and did not permit animals to move off, leading away would seldom occur.

The damaging of pastures by wild reindeer does not have a negative impact on reindeer husbandry, because the main places of wild reindeer grazing are located to areas where it is difficult to pasture domesticated reindeer. Numerous data show that wild reindeer are inflicted by infectious diseases much less than domesticated ones. Nevertheless, in the Taimyr area the danger of anthrax flares is very likely now, because wild reindeer use pastures with several anthrax nidi.

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

Provided a wise economic development it would 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 hunting wild reindeer, but a special branch of wild reindeer husbandry 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 lesser expenses than reindeer husbandry. So wild reindeer hunting could become a competitor of reindeer husbandry and suppress it economically.

From the social viewpoint, only indigenous peoples are occupied in reindeer husbandry. The wild reindeer hunting is not a prerogative of indigenous peoples, and newcomers can press the native hunters out. This was the case of the wild reindeer hunting industry in Taimyr in the 1980's where more "productive" and better organized newcomers gradually supplanted the majority of indigenous hunters.

Pastures

The total area of reindeer pasture in Russia is about 3.303.388 km². According to data from a special land assessment survey, the carrying capacity is about 2.400.000 domesticated reindeer. But about 20% of

the pasture areas are situated in taiga zones, where conditions for meat productive reindeer husbandry are not favorable. This is why pastures in the taiga are underused: only 7% domesticated of the reindeer are in the taiga zone.

There are 2.672.513 km² of pastures with a carrying capacity of 1.860.000 reindeer within the tundra, forest-tundra and mountain taiga and tundra landscapes. About 15% of these pastures (mostly in Taimyr, Yakutia and Chukotka) are occupied by wild reindeer. In the rest of pastures there were about 1.950.000 domesticated reindeer in 1990 and in many regions pastures were heavily grazed. Now, after the total number of reindeer in Russia has been reduced twice, the situation has changed. Large pasture areas, especially in the North-East part of Russia, are not used and their forage capacity is restoring. On the other hand, in Yamal-Nenets AO (more exactly in Yamal and Gydan Peninsulas – Yamalski and Tazovski districts) the number of domesticated reindeer has increased and the shortage of pastures has become stronger. That is especially concerning since the the Yamal Peninsula is the most important area of new gas and oil exploitation development in Russia. The conflict between industrial development and traditional reindeer husbandry could lead to dramatic and nearly inevitable negative consequences for the latter.

Predators

According to official data of the Department of Hunting and Game (Russian Ministry of Agriculture) there are about 23.000 wolves, 50.000 brown bears, 21.000 wolverines, and 6.000 lynxes in the reindeer husbandry area within Russia. According to additional information received from zoologists these figures are underestimated at least in several large 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). Today, the number of predators is noticeably higher than in the 1980's (especially wolves).

There are no official statistic data about the number of domesticated reindeer taken by predators within the Russian Federation. According to data received from the regions, predators kill about 5-10% of the total reindeer livestock every year - this makes up 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 50.000-100.000 animals every year. Compared to this the number of slaughtered reindeer is about

160-180.000 animals. Wolves causes most losses. Losses from bears, wolverines and lynxes are less important. Lynxes take relatively speaking few animals during the winter, when the reindeer are pasturing in the forests.

Before the reforms, state departments of game and hunting in all northern regions controlled the number of wolves. They had a special budget to rent helicopters for shooting wolves. Only in Sakha Republic there were several special hunting brigades to fight against wolves. Besides this, everybody who killed a wolf, received a special prize equal to about 100 \$ US.

The "predators problem" in reindeer husbandry has been aggravated by the new system of control on rifled arms prescribed by the police. Usually, herders have rifles and snowmobiles, they can defend the herds from predators themselves. But now they can not get permissions to carry weapons and they do not have enough snowmobiles, fuel and cartridges. Only in the Sakha Republic the system of arms control for reindeer herders has been simplified and they can use rifles against predators without breaking the law.

Legislation

There is no specific governmental law that determines the legal status of the reindeer herding industry in Russia. It is executed in accordance with norms of Constitution of RF, Land, Civil and Forest Codes of RF, juridical acts on regulation of development of agro-industrial complexes, federal law on the rights of indigenous peoples of the North, Siberia and Far East, legislation on ecology and use of mineral resources, etc. Laws and by-law acts on enterprises and business activities are also important for reindeer husbandry.

At the end of 2001, when the new Land Code of RF was set into operation, three regions had special laws on reindeer husbandry. These were Yamalo-Nenetsky Autonomous Okrug (YaNAO), Sakha Republic (Yakutia) and Chukotsky Autonomous Okrug.

All present normative acts and projects of the laws on federal and regional levels pronouncedly regard reindeer herding as a traditional economic activity of indigenous peoples of the North and other "ethnic communities", and as an indispensable condition for the preservation of traditional cultures and ways of living.

There is a new, progressive stage in the regional legislation, demonstrating regionalization and ethnization. However, regional and local (municipal) legal initiatives in increasing frequency show non-agreement with federal legislation. In addition, regional acts

on reindeer herding seldom demonstrate competence on the ethnic specificity of the territories. They are written in a complicated language and thus they could hardly be used effectively for the protection of the herders' own rights. Besides, reindeer herders mainly do not have the law texts. They are often unacquainted with law contents even in a general way.

The federal law "On state regulation of agro-industrial production" (N 100-AP), passed in July 1997 is very important for reindeer husbandry. According to this Law, guaranteed prices for agricultural (incl. reindeer husbandry) production could be applied in cases where average market prices are lower than guaranteed ones. They could be applied when selling products directly to the state, as well as for additional payments to producers.

"Clan communities" and "clan grounds" are new, specific, and practically baseless in juridical aspect, local organizational forms (whereas the lack of such form of in the Civil Code of RF). Considering the clan communities as a form of self-organization of indigenous peoples, the law has determined its right to traditional economical activity and obligatory registration as a juridical person. At the same time, it has not determined the types of land rights available for clan communities, and has not determined the order of registration of such rights. Clan grounds are transferred to their owners (clan communities) with a right of heritable life tenure, but not as a property or for rent.

Practically all reindeer pastures are subject to state or municipal ownership. Economical subjects in reindeer husbandry reserve for themselves such types of land rights as usufruct (permanent – termless, or temporary) and heritable life tenure for the lands of the state and municipal property, common joint and, rarely, common shared property, as well as landowning as a lease. 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 agricultural land turnover.

Conclusions and Recommendations

The reindeer husbandry in Russia today is receding. The total reindeer stock has been reduced twice. It is a consequence of the transition period between state and private husbandry, and changes of economic priorities in the Russian economy.

The main areas of recession are the North-eastern zone of meat productive reindeer husbandry in the tundra (Chukchi and Evens reindeer husbandry), and

transport-subsistence reindeer husbandry in the taiga (Evenks husbandry). 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 reindeer husbandry. Because reindeer husbandry is the base of traditional culture and way of life of many Northern peoples this has a destructive impact on the nomadic herders' families and ethnic traditions

Based on the background information collected in this project, we would give 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 to develop the NGO of reindeer herders. The aim is to start a constructive dialogue between the herders organizations and the Russian Government.
- To get reindeer husbandry in Russia sustainable by the realization of a economic, social and technological system based on scientific recommendation and research. The first variant of a State programme has been worked out by the Russian Reindeer herders Union and Yakutia 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 to 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 Yamal-Nenets Autonomous Okrug. This problem is enhanced by the oil and gas extraction development in the area. Measures should be taken to secure the future of reindeer husbandry in this region.

- The large populations of wild reindeer in Taimyr, Yakutia and Chukotka creates difficulties for the reindeer husbandry in these regions. It should be payed special attention to settle these urgent problems. This may be done by introducing a management system focusing on pasture use and exploitation of wild reindeer resources based on scientific recommendations and research.

Alaska

Introduction

Sheldon Jackson, along with Captain Healy on the cutter "Bear", brought the first reindeer into Alaska in 1892. The reindeer were transported to the Amunuk Island of the Aleutian Chain. In the period 1892-1902 more reindeer were brought from Siberia to the Seward Peninsula. The main reindeer herding pastures today are found at the Seward Peninsula, Nunavak, Umnak, St. Paul and St. George Islands. In addition, there are also small herds in Palmer, Delta Junction and on the Kenai Peninsula.

Alaska experienced a rapid growth in the reindeer population, and 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 Peninsula is 9.000 reindeer in 2001 and the industry is facing a major crisis at the moment.

Economy

The reindeer industry has made up an important part of the Alaska Seward Peninsula economy 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 to the industry on Seward Peninsula was in the early 1990's with \$1.500.000, 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. Alaska's total reindeer meat sales in 1992 were 150 tons (330.000 pounds) dry weight with a value of

\$662.000. The reindeer meat sale dropped in 1999 to 48 tons (105.000 pounds) with a value of \$295.000. The sale from soft antlers has been another important income for the industry, but after the crash in the Asian economy and after Korea established a ban on reindeer antlers, the export of antlers has nearly ceased. Today, many of the reindeer owners have lost all their reindeer to caribou herds, or are unable to harvest from the animals still left in the area. Some of our informants talked about the reindeer as just a hobby for the time being.

External Conditions

Caribou

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. There are several problems connected to the Caribou herd. The first and 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. This means that any contact between domesticated reindeer and caribou will end with an extensive "run-off". This is the situation on the Seward Peninsula. All efforts to try to keep the caribou herd away from the grazing areas of the domesticated reindeer have been without result.

Predators

The huge caribou herd attracts predators. There are no available figures showing the development of the different predators – wolf, bear, wolverine, lynx and eagles – but it is a common understanding that the number of predators are increasing. All the reindeer owners interviewed expressed their concern about the development.

Loss of Pastures

More losses are expected as caribou move further west on the Seward Peninsula each winter. The economic value of the range resource throughout the peninsula is being devastated, and once depleted, it will take many years to recover.

Market

The market for reindeer meat in Alaska is good. There is a demand for reindeer meat 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.

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 the opportunity to make a living and contribute to the economic well-being of rural Alaska. This situation is now under pressure. A person living in Anchorage 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 gives the exclusively right to reindeer husbandry of reindeer inside the State of Alaska, and not for import of reindeer.

Recommendations

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

Based on the information in the project, the interviews made during the field trip, and conversation with persons connected to the industry, we would recommend the following:

- 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 such a solution the industry will face a major crises in a few years.
- The transport cost in Alaska is a disadvantage for the development of the industry. There is a need for a improved dialogue between the reindeer owners organisations and the national authorities to secure a future for the industry.
- The reindeer industry on the islands of Alaska have several advantages that must be utilized. There is no problem with caribou or predators, and to be able to realise the potential it is important to provide the industry with proper infrastructure like abattoirs, transport and docking facilities.

- 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

Introduction

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. The animal density pr. square kilometre in Norway, Sweden and Finland are 1,2, 1,4 and 1,6 respectively.

Management

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. In Norway this is the Norwegian Reindeer Husbandry Administration, in Sweden this is Swedish Board of Agriculture and Sweden’s County Administrations, and in Finland it is the Finnish Reindeer Herders’ Association. The maximum number of reindeer allowed on the pastures is regulated by the Ministry of Agriculture in all three countries.

Pastures

Norway is divided into six grazing areas, almost identical with the counties of Finnmark (East and West Finnmark), Troms, Nordland, North-Trøndelag and South-Trøndelag/Hedmark. Each grazing area is divided into several districts consisting of both

summer and winter pastures. One district can have one or many reindeer owners.

The reindeer pastures in Sweden are organized through the Saami villages (Sameby). There are 52 Saami villages in Sweden and each Saami village has one designated pasture area. All reindeer owners are members of a Saami village.

The reindeer pastures in Finland are organised through different districts (Paliskunat). There are 56 districts in the counties of Lappland and Oulu. All reindeer owners in Finland are, as in Sweden, members of a district.

Reindeer owners

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 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 system, 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.

Economy

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

The explanation for the strong increase of reindeer is related to several important factors; a) during the late 1970's the improvement in technology gave the industry better tools to manage larger herds; b) the precipitation on the winter pastures due to the North Atlantic Oscillation was favourable in this period and

c) the Chernobyl accident in April 1986 caused a collapse in the Scandinavian reindeer meat market.

Income

Almost every reindeer family in Scandinavia has more than one income, but for many families the reindeer husbandry is an important part of the total income. Not surprisingly, reindeer meat is the most important income to the reindeer owners. In addition to reindeer meat the income comes from compensation of loss of reindeer, salary, pension, handy craft (duodji) and additional earning. The average income of a reindeer owner is lower than the average personal income among other groups of the society.

Costs

The main costs in the reindeer industry is connected to mechanical equipment, transport and constructions, snow mobile, motorbike, car, helicopters etc. This is capital intensive tools for the reindeer owner, but also an important part of the daily work in order to be able to keep up with the herd. Cost of transport is connected both to people and animals. Due to an increase in infrastructure, which make the migration between the pastures more difficult for the animals, increasingly more owners choose to move the reindeer by car. This makes the migration easier, it saves the animals energy, but it means extra cost to the owner. In some areas, this is almost the only possibility to get the reindeer from one pasture to another.

External Conditions

Loss of Pasture

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”. 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. The report mentions specially Northern Scandinavia where “... infrastructure growth is associated with the loss of traditional land, and conditions forcing indigenous people to abandon nomadic herding patterns for more sedentary life styles”. This study shows explicit the impact on the pasture areas during the last 60 years, especially for Norway, but also for the northern part of Sweden, Finland and Russia (Kola Peninsula).

The main reason for loss of pasture is not very different in the cases of Norway, Sweden and Finland; it is connected to infrastructure development, the building of new roads, development of resorts, power lines, military bombing ranges and major hydro power dams. Research on the human impact on grazing grounds shows that establishment of leisure time resorts could have great impact on the use of pastures. Due to the disturbance the reindeer will avoid large areas. Such establishments could lead to a 50% decrease of the use of the pasture in a 2 km. wide circle around the resorts.

Sweden and Finland have in addition to this the struggle with the forest industry. Old woodland constitute an important part of the late winter pasture (April) for reindeer, at the same time it represents the future income of the landowner. The normal way of logging big areas is to use machines. This creates huge falling areas, and before replanting the forest floor is ploughed to turn it around in order to secure an increased growth. This procedure completely destroys the lichen pasture for the reindeer, and it takes many years before this area can be used as reindeer pasture again.

On the other hand, it is a growing understanding of this problem within the forest industry and research is carried out to develop new logging methods, which secure both the pasture for the reindeer and the economic interest of the forestry. The new method tries to avoid big open falling areas by leaving small areas with trees of different age and size composition. This might secure a re-growth of the original vegetation, and also secure the natural environment for birds and other animals.

Predators

Predators, and the impact of predators on the reindeer industry, are also among the "top-three" concerns of the reindeer owners interviewed. The general impression is that predators are of major concern to the reindeer industry of Scandinavia, and according to the interviews accomplished, 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 figures for Norway and Sweden show stable increase in the numbers of predators, and the compensation paid out for loss of reindeer due to predators is also increasing. It is difficult to compare the statistics between Norway and Sweden because of different models, but the trend for these two countries show the

same development.

The situation in Finland is more 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. If we look at the losses of reindeer divided into different predators we get a dramatic picture. 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 interesting in a Scandinavian perspective. The Swedish system is based on the occurrence of different predators inside one pasture area. The compensation is estimated through the number of reproduction of each predator every year. The compensation for loss of reindeer is paid independent of the number of reindeer found killed by predators.

Small Game Hunting

Disturbance from small game hunting, especially with dogs, was mentioned by several reindeer owners in Scandinavia as an increasing problem. Such a statement is important to consider in relation to the problem of loss of pasture. 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.

The problem is related to the fact that the majority population do not know anything about reindeer husbandry or where reindeer husbandry is practised. A lack of information to the public about reindeer husbandry in combination with an almost "invisible" industry creates these kinds of problems. None of the reindeer owners are against the use of pasture areas for recreation, but they want to increase the information about reindeer husbandry to the public. They underlined that all comes down to public information; about the industry's use of pastures, and some general recommendations where to go and what to do if you come across a herd. This could be a task for the local reindeer husbandry administration in co-operation with the local hunting and fishing organisations.

It is only in Sweden that this problem has been part of a public debate. In the mid 1990's there was a change in the Swedish legislation in connection with small game hunting. Before 1993 the local Saami vil-

lage would sell the game 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. In addition it gave the Saami villages a small income. 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.

Access to Market and Requirement for Abattoir

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.

Legislation

The situation regarding national legislation towards the reindeer industry in Norway, Sweden and Finland diverge, with some identical regulations, other quite different. Today, three important reports - one Norwegian, one Swedish and one Norwegian-Swedish - are on public inquiry. This is the Norwegian report "Propposal 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 to these reports, Sweden and Finland is continuing the preliminary work towards a ratification of the ILO Convention no. 169. Norway ratified the ILO Convention, no. 169 in 1990.

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 are 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 explanations 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.

Conclusions and Recommendations

The situation in the scandinavian reindeer industry is stable compared with Russia and Alaska. On the other hand, the economy and the loss of pasture are worrying for the industry.

Based on the available information in the project, the field trips and interviews in Norway, Sweden and Finland, the following recommendations are put forward:

- 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 grazing areas.

- 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 has always been 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 strengthen the position of the family through a family-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 good.
- 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.

RECOMMENDATION TO THE SAO/MINISTERS

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.

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