

Bård A. Berg

(Nordic Saami Institute, Kautokeino)

Government Intervention into Saami Reindeer-Management in Norway: Has it prevented or provoked Tragedies of the Commons' ?

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"The goal of social science is to describe, understand and explain specific historic processes, whereas all general statements about the social world are means, or tools, necessary to do the job professionally. (...) Common property theories can no more replace the history of North Norway than a toolbox can replace a house."

Ottar Brox¹

¹ Brox 1990 (p. 232)

1. Introduction: An epistemological outlook

"Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the number of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy".

Garrett Hardin²

Looking back into the history Saami reindeer pastoralism in Norway, I will in this paper consider the development of reindeer-management - and its present difficult situation in certain areas - partly by appliance of the Common Property Theory (CPT).

As the sociologist Ottar Brox points out, there are two opposing schools of social scientists engaged in the problem of the commons³:

"In disciplinary terms, biologists and economists are confronted by social anthropologists. Epistemologically, the conflict often presents itself as one between a priori reasoning and the study of empirical variation. The scism may also be seen as based on the conflict of interest between the traditional rights of marginal populations and the expansionist tendencies of capitalist or planned economies".

Brox describes "the present state of affairs" as follows (ibid): "Some of us produce arguments that can be used by expansive, corporate, or state-sponsored interests, whereas others are content to play the role of advocates of the communities or marginal populations that get hurt. To put *it* in business terms: we adapt to different market segments."

How, then, should the CPT be used by a social scientist? In Brox 'opinion it is an analytical, not an empirical model (a hypothesis), as it contains no falsifiable statement about the social world. Its possible utility is as an analytic tool: A part of the language in which we describe and analyze the world, most fruitfully understood as a specimen of what Max Weber called "Idealtypus". The "Idealtypus" was, as Brox puts it, "meant to be an *image* that combines certain relations and events, recognizable in real life, into one consistent, non-contradictory *imagined* set of relations." (p. 229). Weber warns explicitly against platonism, i.e. that the Idealtypus represents the "real nature" of the phenomena in focus.

² Hardin 1968 (p. 5)

³ Brox 1990 (p. 227)

In other words: We can use the CPT as a frame of reference when we consider the development or problems of a particular area with regard to for instance reindeer-management. Whether this really is an area with common access to everyone is not decisive as to the utility of the CPT in analyzing it. The CPT is the model - the "Idealtypus" - we use in order to focus on the real nature of the problems of the area in question. Even if our conclusion is that the problem we are investigating **not at all** can be explained as a Hardinian "Tragedy of the Commons", the CPT might be an appropriate tool for discovering this, and offering the **correct** explanation.

In his epistemological discussion with regard to the CPT Ottar Brox concludes by saying goodbye to "a) all participants who consider CPT as a true representation of the world, and b) those who dismiss the same theory because it has been falsified".

As a historian, I have been trained to study empirical variations rather than to apply *a-priori* models in my work. Like most historians I am quite sceptical as to the value of applying models. As a *Saami* historian I consciously try to lean on traditional Saami knowledge rather than to theoretical models - foreign in every sense of the word - when trying to explain empirical variations.

The problem with an analytic model is, obviously, that although it can make you see *one* aspect of a complex problem very clearly, you always run the risk that it makes other important aspects of the same phenomenon disappear from your perspective.

Ottar Brox is well aware of this problem (p. 232): *"The CPT exposes the tragic potential of natural resources being free and accessible to all, but it easily prevents one from seeing that commons involve opportunities which are far from tragic for the people involved, but rather necessary for the maintenance of local communities and even national cultures"*.

In this paper I have nevertheless chosen to follow Otar Brox's recommendation: To apply the CPT as a constructed, analytical tool (while always having the problem mentioned above in the back of my mind). The test of this tool must obviously be whether it can be used a) to detect and explain important empirical differences, or b) to construct viable practical solutions to real problems of a "commons".

Being a Saami, working for a Saami research institute, I might be expected to use the CPT to advocate Saami reindeer-management interests. I do not consider my scientific findings "objective" (in a Weberian sense), and I accept that my reasons for doing research in this particular field, my choice of methods, interview objects etc. to a large extent depends on the fact that I am a Saami, and wish to do research that gains my people.

But it is also a fact that the Saami people - having all kinds of occupation, sometimes in direct competition with reindeer-management - has very different

interests with regard to these questions. There are also differences in opinion within the reindeer-management population as to what is good or bad for it, or - more specifically - whether it has benefited from Government intervention or not.

When applying the CPT to the study of the development of Saami pastoralism some key questions must be considered: 1) Are the reindeer pastures - or have they ever been - Commons, giving free access to any herdsman? 2) Are there - or have there ever been - tragedies (in the Hardinian sense) in these pastures? 3) If and when tragedies of this kind have taken place in the Saami pastures in Norway, is this because of the selfishness of each and every individual Saami herdsman, as implied by Garret Hardins theory - or is it because of structural changes in the Reindeer-Management (and in the Saami society as a whole) brought about by the Norwegian government?

2. A brief History of Saami Reindeer-Management

Picture a number of blind men trying to describe a huge animal - an elephant - standing with its legs in different corners of Sapmi, the land of the Saami people. They try to describe the animal - symbolizing Saami reindeer-management - after having touched different parts of its body. The elephant has one part of its body in the Kola peninsula (Russia), one part in Finland, one part in the south-saami areas of Norway and Sweden - and its head and heart in the vital reindeer areas of interior Finnmark and northern Sweden. Would these men perceive the same animal? If the elephant puts one of its legs in the ocean outside North Norway - will somebody (maybe Ottar Brox?) perceive it as a peculiar kind of fish, and as a result of this discuss reindeer-management in terms of fishery?

Are the Saami reindeer pastures - or have they ever been - Commons in the hardinian sense? As implied in the parable above the concept 'Saami reindeer management' - taking place in four different countries, and under very different circumstances (topography, jurisdiction etc.) - has different meaning in different parts of Sapmi.

In Russia, Saami reindeer-management (taking place on the Kola peninsula) became an integrated part of the Soviet system, i.e. it became collectivized and owned by the State. The control was taken from the Saami reindeer-herders and given to political commissars, representing the State. Today

reindeer-management on the Kola peninsula is by no means exclusively a Saami occupation.

This is also the case in Finland, and the present conditions in this country is well described in Tim Ingolds "Hunters, pastoralists and ranchers" (1980). Ingold advocates the view that the age of saami reindeer pastoralism is over, and that the present situation best can be described as 'ranching'. Each reindeer-group (Saami or Finnish) has well defined areas to their disposal, and the reindeer-management is stationary - as compared with the reindeer-management in e.g. Finnmark.

What characterizes 'ranching' as compared to 'pastoralism' is - according to Ingold (p. 5) - essentially that the former has *divided* access to land, the latter *common* access to land.

In Sweden and Norway reindeer-management is, with few exceptions, an exclusive Saami right. The reindeer-management in these countries (in union until 1905) is also much alike. A convention - going back to 1751, and re-negotiated in 1919 and 1972 - states that the Saami people has a right to move their reindeer herds across the national borders in accordance with old customs.

As stated in the title of this paper, it will discuss the history and the development of Saami reindeer-management in Norway. The reason why I have taken a brief glance at the conditions in the three other nations with a reindeer-Saami population is to show the very different conditions under which reindeer-management is conducted.

In Norway Saami reindeer-management today essentially takes place in the five northernmost counties (Finnmark, Troms, Nordland, Nord-Trøndelag, Sør-Trøndelag). The conditions in these counties are in many respects quite different. Until 1933 there were even different reindeer-management laws for Finnmark and for the rest of the Saami reindeer-areas. As I in this paper have chosen to concentrate primarily on the conditions in Finnmark, I will not dwell on these differences. I will instead give a brief sketch of the general history of reindeer-management in Norway (and to some degree also in Sweden, as the historic development of these countries in this respect is partly common, partly very much alike).

If we go 400 to 500 years back in time, the Saami people was organized in "siida"s, which were family groups, each having defined areas of fishing, hunting and gathering to their disposal. Each siida consisted of a number of households ("baiki"). These areas were recognized by neighboring siidas. At this time there were no national borders in Sapmi. The borders in northern Scandinavia were set relatively late: Between Norway and Sweden-Finland in 1751, between Sweden and Finland in 1810, and between Norway and Russia in 1826.

In the inland areas of Sapmi, one of the main natural resources for the siidas was the hunting of wild reindeer. The wild reindeer population was, however, too heavily drawn on, and disappeared gradually. This happened at different times in different areas of Sapmi, but it is usual to say that the "hunting period" of the Saami people ended in the 16th century.

For many siidas the reindeer-hunting had been the most important source of food and clothing, and later also - as The Saami population came into contact with market economies - products from the reindeer (especially meat and fur) became crucial as means of exchange or income. Something had to take the place of the hunting in the economy of the siida, and thus the era of Saami reindeer pastoralism came to a start. The siida had always kept tame reindeer for different purposes: Transportation, milk and as decoys for hunting wild reindeer. As time went by, the milking of the reindeer became more and more vital. The milking took place from June to September, but the siida preserved and stored the milk, and was thus able to utilize it as food throughout the whole year. In addition to the milk, the reindeer of course also provided the siida with meat and clothing.

As this new, nomadic era came into being, the traditional siida-areas were broken down. In the hunting period each siida waited for the reindeer until they passed through their particular siida-area. Now, as the herds had become private property, the Saami had to follow and watch their herds on their traditional wandering routes, often hundreds of kilometres each way. From Salten in the county of Nordland up to Finnmark the reindeer had traditionally grazed in the lichen areas of the interior in the winter, wandered towards the coast in the spring, and stayed there until autumn.

When the border between Norway and Sweden-Finland was drawn in 1751 this nomadic pattern was already well established, and in a particular "codicil" (appendix) to the border-tractatus between these countries ("Lappekodicillen"), concerning the Saami people, it was established that the Saami people for all future time should keep their traditional right to move their reindeer herds across the national borders.

The nomadic, traditional reindeer-management form, where the milking of the reindeer was of major importance, vanished throughout Sapmi during the first half of the 20th century. Reindeer-management gradually became more market-oriented (mainly meat production) and "predatory" (Hunter 1980), as opposed to the protection of the reindeer characterizing reindeer pastoralism in its traditional form.

But let us return to the question introducing this chapter: Are the Saami reindeer pastures - or have they ever been - Commons in the hardinian sense? According to Ingold (p. 5), the difference between 'ranching' and 'pastoralism' is, in essence, that the former has divided access to land, the latter common access to land. Although this may be **juridically** correct, other scientists (Paine, Bjorklund) would characterize this distinction as completely wrong. As

mentioned earlier a traditional Saami community of the hunting period consisted of several "baiki"s (households), co-operating with each other to form a "siida" - an 'organization' held together by common interest and family bonds. This was also the way the nomadic reindeer-management was organized. Decisions concerning the household were taken on "baikf"-level, decisions concerning the siida on siida-level. The elected leader of the siida ("siida-isit") had the last word in matters not agreed upon by everyone.

A reindeer-management siida has always had quite clearly defined pastures to its disposal - and therefore also has had to deal with the consequences of for instance overgrazing. The siida is traditionally a flexible, not a fixed organization - co-operating with other siidas. If the number of reindeer in one particular siida one year should exceed the carrying capacity of its pastures, the necessary number of baikis would have to move into pastures with more space (that is, into another siida).

Nilsen and Mosli (1994) seems to realize this, but - as we shall see later - claims that the present condition in interior Finnmark is characterized by the diminution of the role of the siida as compared to the baiki. As a result of this they claim that the autumn and winter pastures of Western Finnmark have become Commons in a full hardinian sense.

We can sum up this chapter by concluding that the Saami reindeer pastures traditionally have **not** been Commons, giving free access to everyone. Internal Saami jurisdiction (co-operation between neighbouring siidas) has laid down how⁷ the pastures should be distributed and used. Whether this is the case in the present situation in interior Finnmark is another question, which will be discussed later.

3. Kautokeino 1960-1995: Reindeer-Management in Transition

3.1 Introduction

The discussion whether the CPT can be applied in order to explain Saami reindeer management has to a great extent been limited to the conditions in interior Finnmark, or more specifically: **Kautokeino** - one of the two main reindeer areas of interior Finnmark⁴. This is understandable, for three reasons: a) The great number of reindeer in these pastures, as compared to other parts of Norway; b) the present problems (poor grazing conditions) in Western Finnmark; c) the lack of other reindeer areas with similar problems.

⁴ Bjorklund 1990, Paine 1992, Brox 1989, Nilsen and Mosli 1994

Apart from interior Finnmark (in the last 5-10 years) there is no historical evidence of overgrazing in a general sense in Saami pastoral areas. Natural catastrophes that periodically decimate the herds (epizootic diseases, winter famines as in Finnmark in 1918 and 1968) have nothing to do with overgrazing. Animals are lost - but not the lichen beds. The rebuilding of herds is therefore feasible at a rate which would not be possible had there been overgrazing.

This is true not only for the pastures in Norway, but for the pastures in all four countries with Saami reindeer management. The abrupt breakdowns in reindeer populations (due to overgrazing) often cited by biologists are all examples referring to wild reindeer - cases when man is not mediating their relationship to pasture (Bjorklund 1988).

But how about the present situation in interior Finnmark? It is a fact that the number of reindeer has increased considerably over the last 15-20 years. The last 10 years there is evidence of overgrazing in certain areas. Social scientists has discussed the reasons for this, some advocating the view that this is a typical example of a 'Tragedy of the Commons' (Brox, Nilsen and Mosli), others denying this, and pointing to other reasons (Paine, Bjerklund). In this chapter I will look into this matter, trying to explain **what** has happened in Western Finnmark - the reindeer district of **Kautokeino** - and **why** it has happened.

3.2 Structural Changes (1960-1975)

During the last 30 years reindeer management in Kautokeino has changed considerably⁵. Starting in the late 1950-ies, the former nomadic reindeer families, having followed their herds all around the year, within the next 10 years moved into modern houses, situated in or near the village of Kautokeino. The reason for this was a) governmental housing programs (1958 and 1969), making it possible for the reindeer Saamis to build modern houses - provided they were built in or near the village; b) a national school reform (introduced in Kautokeino in 1965) making school compulsory for everybody until the age of 16.

About 1970 the reindeer Saamis of Kautokeino seen as a group had clearly moved in from their pastures into the industrialized and sectorized norwegian society. This was the first step towards a situation characterized by transition and growth in the reindeer-management of interior Finnmark (Nilsen and Mosli).

One of the main problems for the reindeer-Saami families was the fact that although they had houses in or near the village, the men still had to stay out in the autumn and winter pastures to guard their herds. The families were thus separated for long periods. The snowmobile ("snowscooter") came into common use in the late 60-ies, and solved not only this, but other problems as well. It made the seasonal movements with the herd to the coast and back much easier. To a great extent it also made herding during the winter season less fatiguing.

⁵ Nilsen and Mosli, Paine, Sara

But snowmobiles were expensive. Every herdsman had to slaughter a considerable number of reindeer in order to buy one. This, combined with the catastrophic year of 1968 (the winter pastures froze) made the total number of reindeer in Western Finnmark decrease from 65.500 in 1965 to 40.600 in 1970. Even in 1975 the number was well below the 1965-level: 48.110.

3.3 The Laws and Regulations of the late 1970-ies

In the second half of the 1970-ies the Government put forward measures that in the following years would deeply influence the development of reindeer management in Norway. A new and comprehensive reindeer-management policy, grounded on economic as well as biologic arguments, was worked out. This policy was established through the Reindeer Management Agreement ("Reindrifftsavtalen") of 1976 and a new Reindeer Management Act (1978).

The Governments biologic experts stressed what they regarded as a classical situation of the 'tragedy of the commons'. They put forward the view that it was of utmost importance to regulate the number of reindeer before overgrazing and an ecological catastrophe became a reality. The new governmental policy intended to stop "overgrazing" and make herding more profitable, by reducing a) the number of animals and b) the number of herders, in the hope of increasing the weight of the animals and consequently the income of the remaining reindeer-owners (Bjorklund 1988). The model for this policy was, clearly, the norwegian agricultural system.

As Ivar Bjorklund points out, the new policy was to a large extent justified by and embedded in the social-democratic ideology of the welfare state. The Government argued that reindeer herding in its traditional form was a very anachronistic undertaking, because of its uneven distribution of animal wealth among the reindeer-owners. Statistics were presented to prove this - and regulations introduced in order to equalize these differences.

Bjorklund concludes that the pastoral ecosystem since the late 1970-ies have been gradually integrated into governmental institutions, as the relations between the different factors of production (herder, pasture, animal) became controlled by laws and regulations.

3.4 What went wrong?

We have seen how departemental experts predicted a hardinian cathastrophe in the Saami reindeer pastures - unless the State acted in order to avoid this. Their argument was 'classic': Grazing is a free resource, and unrestricted access would inevitably lead to overgrazing and poverty for all reindeer pastoralists. Today, 15-20 years later, some of the problems they predicted would come has actually happened - in spite of the laws and regulations that

were introduced in order to avoid them. One might, of course, argue that the problems would have been worse if the Government had not intervened. Or one might ask: Have the problems come into being because of the governmental laws and regulations? In this chapter we will look into this matter, trying to answer the question asked in the title of this paper: Has governmental intervention **prevented** or **provoked** 'Tragedies of the Commons' in the Saami reindeer pastures of Norway?

The Reindeer Management Agreement (1976) must be considered the final result of a long process. The Government had since the 1950-ies in different ways supported reindeer-management economically (building of fences, slaughteries etc.). From 1968 reindeer herders were offered loans from the governmental Agricultural Bank. And economic support for the reindeer management were already canalized through the Agricultural Agreement.

The Reindeer Management Agreement was obviously a result of changed attitudes towards Saami culture in general - and Reindeer management in special - from the norwegian government. The agreement - negotiated biannually from the start, and annually today - aimed at improving the economic, cultural and social situation of the Saami reindeer management population. It is important to realize that the organization of the reindeer-Saamis - NRLP - for a long time had negotiated with the Government in order to achieve economic support through a separate reindeer-management Agreement, and not through the Agricultural Agreement, using e.g. ethnic arguments. We must keep in mind that the Reindeer-Management Agreement was a result of long negotiations between NRL and the government, finally agreed upon by both parts.

The new Reindeer-Management Act (1978) decided that a new Reindeer-Management Administration - on regional and national levels - should be established. This Act also established political organs on each of these levels, and boards of reindeer-herders on the local level. The Agreement and the Act were seen upon as a whole - as two different means of consciously giving Saami Reindeer-Management in Norway a new direction⁷.

Of utmost importance in the Act of 1978 is the new concept of 'Production Unit' ("driftsenhet"). The Production Unit (PU) is defined as one reindeer-herd, owned and managed by one responsible leader. The PU can, however, also have reindeer in it owned by other persons. The decision as to who will be given a PU is left to the new administrative and political organs. The aim of this was, of course, to achieve a way of **regulating** the reindeer-management population to the optimal level.

6 Norske Reindriftsamers Landsforbund ("Norwegian Reindeer-management Saamis National Organization")

7 A presentation of the Reindeer-Management Agreement of 1976 and the Reindeer-Management Act of 1978 is given in Berg 94:1 (p. 53-68).

We remember that the aim of the laws and regulations introduced by the Government in the late 70-ies was to stop "overgrazing" and make herding more profitable, by reducing a) the number of animals and b) the number of herders, in the hope of increasing the weight of the animals and consequently the income of the remaining reindeer-owners.

But what did really happen? The number of reindeer in Western Finnmark officially increased from 48.110 in 1975 to 112.000 at its peak in 1989! In spite of important systemic errors in the estimation of reindeer number (e.g. the introduction of a new taxing system in 1982, making it less important to "conceal" the real number of reindeer) - something obviously went wrong!

The idea behind the new concept of 'Production Unit' was that there should be only one per household, consisting of several adults taking part in the "family business". The father of the family was supposed to be the leader and "owner" of the PU. When he became unable to exercise leadership, this was supposed to be taken over by one of his heirs. Through economic support from the government to each PU this would yield an optimal number of "sustainable units".

But it soon turned out to be difficult for the government to decide who should and who should not have his own Production Unit, and as a result of this gain economic support through the Reindeer Management Agreement. The problem was that in several households were grown-up children (read: sons) claiming to be active reindeer-owners and having paid tax for their own herd before the new Reindeer Act came into being. In order to cut through this problem, the government in 1980 decided that "everyone over 18 having paid taxes for their own herd can have their own Production Unit". Throughout the 1980-ies the number of PU's thus grew considerably.

As a result of this, one household now could consist of several Production Units. Each of these got the economic support - canalized in different ways - that were meant to be sufficient for the whole household. That each household has more than one PU was - an is - the rule in Saami reindeer management families rather than the exception.

Even the typical Saami family pattern has had its influence on the development. The Saami families have more children than their norwegian neighbours, and it is still usual that grown-up sons and daughters live together with their mother and father. The daughters are often educated, and have well paid jobs outside the reindeer management. It has also become quite usual that the mother of the family take a part-time job, and bring home a wage every month.

Why are these facts important when we try to explain the rapid growth in the number of reindeer in Kautokeino in the 1980-ies? Because the combined effect of all the factors mentioned above **made it unnecessary for many reindeer-**

owners to slaughter any reindeer for sale. Others slaughtered far less than they would otherwise have had to. The prestige of a reindeer-management Saami has always to a great extent relied upon the size of his herd. And there are good reasons for this: The herd is his "money in the bank" as well as his insurance. In good years his herd returns him a far higher rate of interest than any bank could, in bad years it is his insurance and security for staying in the business. The larger his herd is, the greater the possibility that he after a catastrophical year will have enough animals left to be able to live from them, and later rebuild the herd.

There can be no doubt about it: The economic support offered by the government from the late 1970-ies through the Reindeer Management Agreements had effects quite to the opposite of its purposes. The support made it possible for a) the number of reindeer to grow, and b) the number of people in the business to grow. As mentioned above there were other reasons for this as well, but the economic support from the government was the decisive factor behind the growth.

The question asked in the title of this paper - whether the governments intervention into reindeer management has **prevented** og **provoked** a 'Tragedy of the Commons'- seems to have been answered. The intervention has by no means prevented, but rather provoked the problems we have observed in Western Finnmark the last 10 years. But one important question remains: Is it appropriate to label these problems a 'Tragedy of the Commons' (Brox, Nilsen and Mosli) - or will the use of this concept give us a completely wrong picture of the situation (Paine, Bjorklund)?

4. Is there a 'Tragedy of the Commons' in interior Finnmark?

"They are concerned, above all else, to increase their herds, and are driven towards this end by a fiercely competitive ethic that celebrates the qualities of strength and violence".

The above quotation is **not** a description of the reindeer-Saami population of interior Finnmark. It is a characterization of the Reindeer Chukchi of Northern Russia (Ingold 1980 - p. 202). Some social scientists, however, seem to hold the view that the development in the Kautokeino pastures is going in this direction (Nilsen and Mosli p. 102-105: "The struggle about the pastures").

So let us begin this chapter by looking into the arguments of those who consider the problems in interior Finnmark a classic example of a Tragedy of the

Commons'. We have seen how the CPT was decisive when governmental economists and biologists worked out the new reindeer-management policy in the 1970-ies. These experts considered the autumn and winter pastures of Kautokeino common property in the hardinian sense, and predicted that catastrophic incidents therefore necessarily had to occur, sooner or later. The new reindeer-management policy had as its main goal to avoid this to happen.

We have demonstrated that the new policy in this respect was a complete failure: It started off, and later accelerated, a considerable growth in the number of reindeer in Western Finnmark.

Today, the social scientists Nilsen and Mosli (1994) sums up their evaluation of the present conditions as follows (p. 104 - my translation): *"The content of the present cynical game is that everybody knows that as long as the summer pastures are not destroyed, an increase of one owns herd in the common pastures will destroy more for the reindeer population as a whole than for the individual reindeer-owner. We have therefore a situation that can be described in accordance with Hardins theory of the 'Tragedy of the Commons'."*

Nilsen and Mosli claims that the limitations built into traditional reindeer-management before the introduction of the Reindeer-Management Agreement and the new Reindeer-Management Act, where each "siida" had its own, relatively limited areas, and thus directly had to deal with the consequences of overgrazing, now have disappeared. Earlier the "siida" decided in matters that concerned more than one "baiki" (household). What Nilsen and Mosli now claim to observe is a darwinian struggle between the households for the best pastures, where only the fittest and strongest will survive. In this struggle those with the largest herds take the best autumn and winter pastures. The formation of large autumn and winter herds through alliances is therefore of utmost importance. These new alliances are most often - but not necessarily - based on family relations. The former system, where the different siidas co-operated with each other in a flexible way - to the benefit of all - is gone.

Brox (1989) also writes as though the traditional system of herding and husbandry is, for all essential purposes, a thing of the past. He is also - like Nilsen and Mosli - convinced that there is over-grazing in serious proportions, and if this is allowed to continue we must expect the worse.

On the other hand, Bjorklund (1990) believes that overgrazing in interior Finnmark is something that has been much exaggerated by biologists and administrators. His principal response to the "free" resource and over-grazing argument is that the "carrying capacity" of pastures is still *mediated* by the pastoralist through continual adjustment of herd sizes on given pastures. Bjorklund points to the role of the siida in "dividing and combining herds throughout the year in order to obtain the optimum relation between size of herd and capacity of given pasture at any time" (p. 80). The siida changes size and composition through the year, as the pastoralists divide and regroup their herds.

The siida today is defined as "an alliance recruited through cognatic and affinal kinship relations, based upon mutual herding strategies among its members. This principle of organization provides each reindeer-owner with potential access to pasture and herding partners over a large area. Bjorklund concludes as follows (p. 83): "*There is (...) no 'free access' to reindeer grazing, as the biologists postulate. The access is precisely regulated through a culturally designed distributive institution, thereby regulating the carrying capacity of the pastures*".

Robert Paine (1992) is directly attacking Ottar Brox's position in the debate, and he sets forth his arguments in the following sequence⁸: "(A): we should *stop* talking about fish in the sea if we wish to understand pastoral dynamics; we should *start* talking about pastoral ecology; (B): we should *resist* scientific determinism and *insist* on the epistemology of social construction; (C) we should *expose* the politicization of biology and economics and ecology, and *redeem* the validity of practitioner experience and rights".

All the above mentioned social scientists agree that historically the siida-organizations have regulated the carrying capacity of the pastures through continual adjustments of herd sizes throughout the year. They disagree, however, on two major issues: A) If the siidas are carrying out their traditional functions under the present circumstances; B) the proportions of the over-grazing problem.

Over-grazing in interior Finnmark has been documented in different ways (e.g. through satellite photographing) over the last 10 years. The proportions of it has, however, been the subject of continual discussions. What seems to be the case is that there is a wide variety of grazing conditions, and in certain minor areas the conditions are obviously quite poor. The reasons for this are overgrazing, often because of fences preventing the herds to seek better pastures. A strong indicator of insufficient grazing conditions is the fact that the slaughter weight of the reindeer of western Finnmark has been markedly below the weight of reindeer slaughtered in the other reindeer areas of Norway.

But the picture is not altogether black: The number of reindeer in Western Finnmark has, according to official statistics, decreased with at least 25% since the peak year of 1989. The slaughter weight of the reindeer has also increased in the same period. But as Nilsen and Mosli points out: Although the total number of animals has decreased, the number of *productive deers* has actually increased. Nilsen and Mosli argues that the main reason for the reduction of the total reindeer population is some bad years in the reindeer-management. If this is true the large number of deers makes some good years enough to provide a rapid growth in the population.

As to the question whether the siidas are carrying out their traditional functions under the present circumstances or not, I think it is quite safe to say that they are. As the number of reindeer increased in the late 1980-ies, the

⁸ Paine 1992 (p. 7)

competition in the pastures consequently became harder. Several herds came out of proportion to the pastures, and in accordance with tradition individual reindeer-owners had to withdraw their animals from the common herd and join other herding units according to kinship relations and available pastures. But what happened if there were no available pastures? Would the siida system fall apart?

Over such a short time span - it would not, and in our case - it did not. Reindeer-management is today, as it has always been, a tough business, with no guarantee for anyone to stay in it forever. In hard periods, someone has always been urged to leave the business. But as Ivar Bjorklund puts it (p. 81): "The often harsh competition (...) must not overshadow the basic point that the pastoral system, as such, is a genuine system of indigenous resource management - striving towards a balance between the number of animals and the carrying capacity of the pastures as a whole".

Do we by now have enough information to answer the question asked in the title of this chapter: "Is there a Tragedy of the Commons' in the Kautokeino pastures?" I think so - and my answer is no. We have demonstrated that these pastures by no means are 'Commons' in the hardinian sense: Areas with common access to everyone. In my opinion it is also a huge exaggeration to use the word 'Tragedy' when discussing the problems of interior Finnmark. The fact remains, though, that there are problems, and these problems need to be dealt with.

5. Different types of Solutions to the Reindeer-Management problems of interior Finnmark

Let us first have a look into the solutions introduced by the Norwegian Government in 1993⁹. These solutions consists, in essence, of economic support to those who voluntarily leaves the reindeer-management. The goal of this governmental program is, as might be expected, to reduce a) the number of reindeer, and b) the reindeer-Saami population.

The reports from the administrators of this program show that some results have been made. In the first two years of the program 52 Production Units were shut down in interior Finnmark as a whole - about half of these in Western Finnmark. But in spite of this fact the Reindeer Management Administration cannot say for sure whether or not the **number of reindeer** has decreased in the same period.

⁹ "Omstillingsprogrammet for indre Finnmark" (established 1.1.93)

Robert Paine (1992) does not deny the fact that there are problems in the reindeer-management of Western Finnmark. As to the reasons for these problems, he points to unintended and unexpected implications of government policies. Through convergence of this runaway programme with runaway modernization - in particular mechanization - a situation inimicable to pastoral ecology has emerged. To the degree that the pastoral responsibility has failed, this is because of the patronizing role taken on by the government, making the reindeer-owner a client who 'plays' the system.

When it comes to offering solutions to the problems, Robert Paine points ("conservatively", as he himself puts it) to the mechanisms of traditional Saami Reindeer Management. He is, however, pessimistic about the future, as he can see no change in the Governments "basic political premise of 'knowing better'" (p-14).

The main concept of Ottar Brox (1989) in analyzing the development of reindeer-management is (as in his analyses of fisheries and agriculture) 'resource **rent**'- defined as 'work-free income through harvesting the yield of a natural resource'. The natural resource in question is lichen and herbs growing in the reindeer pastures. In order to take part in the competition for the resource rent, one has to have **capital** - that is, reindeer. The more reindeer you have, the larger is your potential part of the resource rent.

Having observed the development of reindeer-management in interior Finnmark - and earlier the fisheries off the coast of Northern Norway - Brox puts forward that at a certain point in the development the yield increases less than the cost of the effort. Sooner or later the yield then will barely be high enough to pay for labour and capital - and at this point there is no resource rent. Reindeer-management becomes unprofitable for all participants, not only because the yield goes down, but also because of the high effort costs necessary for each participant to get hold of his share of the yield.

In Brox's opinion reindeer-management in Western Finnmark is already beyond this point, and have become totally dependent upon subsidies from the norwegian state. One of the main reasons for this is that *most of the herding effort is aimed at keeping the herds apart*. In order to do this in an effective way one also have to invest in expensive vehicles - and some reindeer-owners has even taken planes and helicopters in use. In order to improve the resource rent in the reindeer-management of interior Finnmark, Brox therefore claims that one has to bring down the herding efforts and costs in some way or other.

Brox puts forward a number of possible measures in order to improve the profitability of reindeer-management. If this is obtained, each individual reindeer-owner could reduce his number of reindeer, and yet take out the same profit. One of the measures he mentions is to accelerate the building of fences, in order to bring down the herding costs. In this connection he quotes the former

leader of NRL (the reindeer-Saami organization), Odd Erling Smuk¹⁰. "Privatization of the common reindeer pastures is one of the strategies we are discussing in order to achieve a profitable and balanced reindeer-management". Brox considers the building of fences "a practical way of initiating (...) a process of privatization" (p. 159), which perhaps is "the only solution".

Another of Brox's proposed measures worth mentioning is the idea that instead of taxing the income of the reindeer-owners, the government could tax them for using the pastures. In this way overinvestments from tax purposes would be avoided. Brox also discusses the possibility of taxing each reindeer-management district instead of the individual reindeer-owner.

My own opinion upon this issue rests on the fact that Saami Reindeer-Management in Norway today has, politically as well as economically, become fully integrated into the Norwegian system. Any solutions must therefore be canalized through the Reindeer-Management Agreements. One cannot set the clock back, and return to the conditions of the past.

From a Saami point of view a high number of people engaged in reindeer-management is a goal in itself, because of its importance for Saami culture in general. As we have seen, the Governments measures have the opposite aim: To reduce the reindeer-Saami population.

The "Economic Committee of the Reindeer-Management" ("Reindriftens Okonomiske utvalg") states in its annual report (1993) its opinion with regard to the conditions in the business as follows (my translation): "What has characterized the development since the early 1980-ies is (...) a decreasing economic result (...) with a few regional exceptions"¹¹. The Committee points out that the total economic result is influenced by the following factors: 1) production/productivity; 2) meat prices; 3) costs (expenses); 4) subsidies and 5) the number of production units/the size of the reindeer-Saami population. All these factors are - more or less - influenced by the Reindeer Management Agreement, and can therefore also be changed through the Agreement.

The one single factor with greatest importance for the negative economic development is undoubtedly the meat prices. In 1990 the total income from meat was 69.7 mill. N.kr. If the prices had been at the 1975-level the total income would have been about 140 mill. N.kr. The prices of meat are, of course, dependent upon the market, and it is a fact that meat prices in Norway in general have decreased in the period. The price of reindeer meat has, however, decreased more than for instance the price of beef. Through the Reindeer-Management Agreement it is obviously possible to introduce measures that would enhance the price of reindeer meat to the reindeer owner.

¹⁰ From an interview in "Okonomisk Rapport", no. 4:1988 (my translation)

¹¹ "Totalregnskap for reindriftsnaeringen" (p. 74). All references that follows are from this publication.

The Economic Committee itself proposes 3 alternative strategies for improving the profitability of reindeer-management: 1) reduction of the number of Production Units (i.e. reduction of the reindeer-Saami population); 2) enhanced meat prices; 3) enhanced productivity per animal. A combination of the two latter alternatives would, from a Saami point of view, be the most favourable solution.

In order to keep the number of reindeer in interior Finnmark down on a sustainable level without reducing the reindeer-Saami population, one therefore has to 1) improve the profitability of reindeer-management by carrying through the second and third alternatives mentioned above, and 2) bring down the herding expenses (Brox). If there is no other way of obtaining the latter one must seriously consider Ottar Brox's (and Odd Erling Smuks) thoughts about privatizing the pastures.

Competition in reindeer-management has always been quite harsh, but unless the negative development we have demonstrated is turned into a more positive direction it might easily become too harsh - to the benefit of nobody, least of all the reindeer-Saami population. Nobody wishes Tim Hunters description of the Reindeer Chukchi of Siberia - quoted at the beginning of chapter 4 - to be appropriate for the Reindeer-Saamis of interior Finnmark as well. And although I have earlier concluded that the siida system is intact in the area, and that the concept 'Tragedy of the Commons' is inappropriate in order to describe the problems here, one must be aware of what could happen in a future "worst-case scenario". I will end this paper with this warning - and with the following quotation from Ottar Brox¹²:

"...most "tragedies" start to develop and are attended to when the "commons" are no longer accessible to the commoner, but only to the select minority that has been, able to stay in the rat race for what remains of the free natural resources".

¹² Brox 1990 (p. 234)

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