Chapter 8

Reindeer-Pastoralism Politics in Sweden: Protecting the Environment and Designing the Herder[1]

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While there are ways in which different cultures conceive of Nature or pursue their ecological goals – cultural landscaping (Ellen 1986:3) – there is also a major cultural dimension of change in ecological perceptions transecting all cultures and based upon the course of globalization. The remarkably accelerating impact of humankind upon the biosphere steers us toward increasing ease of self-fulfilling prophecy with respect to it, and our ideas about ecology become part of the ecological problem (Bateson 1972:504). In effect, our own ecological precepts become manifest to a degree unimaginable to pre-industrialized, tribal peoples (Rappaport 1994).

Globalization is not merely evident in the wide-spread impacts of toxic waste or the proliferation of "high tech" and market economies, it is also apparent in the proposed mechanisms to deal with these developments, the international commissions, declarations and agendas to bind states in environmental agreements. Protection and preservation of Nature, have become the political domain of all countries; environmentalism, even if constrained by sovereignty, is not completely determined by it. This paper deals with the local

[1] Material in this paper has largely been gathered from Saami reindeer herders in the field, continuously from 1973-77, and intermittently thereafter. Research over the past four years in particular, focused upon overgrazing issues, has been made possible by funding from the Nordic Environmental Research Program and the Joint Committee of the Nordic Social Science Research Councils. A companion piece to this essay dealing primarily with the political dimensions of the overgrazing debate in Sweden is published separately: Beach, H. (1997), Negotiating Nature in Swedish Lapland: Ecology and Economics of Saami Reindeer Management. in *Contested Arctic: Indigenous Peoples, Industrial States, and the Circumpolar Environment*, ed. Eric A. Smith, University of Washington Press. It has been necessary here to reiterate some points and explanations of terms from this piece.

impact of global environmental concerns. More specifically, it deals with the enskilment and personhood of Saami reindeer herders in Swedish Saamiland (Lapland) as a consequence of externally imposed (i.e. non-Saami and to considerable extent even non-Swedish) environmental ideals.

Among the most controversial issues for Saami today are 1) the existential status of the wolf population at the expense of the reindeer herding livelihood, 2) the claim that too many Saami reindeer are transforming the Swedish mountains into a rocky desert, 3) the battle over small game hunting and the confiscation of the Saami exclusive hunting right, 4) the contested Saami right of traditional usage to graze reindeer east of the Agriculture Line in the Härjedalen area, 5) the increasing use of "high-tech" equipment (snowmobiles, helicopters and now motorbikes) in the practice of reindeer herding, and 6) the growing pressures to widen the membership of the Sameby collectives to include non-herding Saami. Obviously each of these issues has direct economical bearing on Saami livelihoods and, through them, bearing on Saami culture. The entrance of Sweden into EU is also a matter of utmost significance for the Saami, as it imposes yet another layer of higher-order regulation far removed from the local context. The limited self-determination which the Saami have still been able to maintain regionally in a livelihood legally confined to them is now under threat, not as before from the competition of farmers and settlers, or by the rationalization programs of the welfare State (Beach 1981), but rather from the appropriation into global concerns.

Certainly, in the examples above, resource conflict is a central issue. Yet parallel to the aspect of resource as material good is the aspect of resources as cultural and ethnic domain. Do the reindeer utilize Saami grazing or Swedish grazing? Are the mountain regions a Swedish or a Saami landscape? Most importantly, is the Saami core area and base for Saami livelihoods to be appropriated under the management forms of Swedish ecology imbued with the agreements of international declarations? Or is there room for Saami self-maintenance and self-development, that is, ecological goals dedicated to the sustainable development of the reindeer-herding population and Saami society?

At the same time, international conventions and EU membership mean new forms of protection and new sources of subsidy and regional aid for the Saami. Such elements of globalization are not categorically detrimental to Saami interests, nor are they perceived this way by the Saami. However, the terms of debate and the strategies involved by the various Saami and non-Saami lobby groups are significantly altered. Although new State regulations have been prescribed for "sustainable development" and "biodiversity," little attention is given to the question whether these goals are compatible with "rational herd management" also prescribed by the state authorities. When it comes to intra-Saami relations, globalization can mean greater recognition of Saami rights on an ethnic basis when backed by international conventions and integrated

"Fourth-World" brotherhood. In Sweden, little attention is given to the implications of new State administrative practices vis-à-vis the State's long-standing obligation to preserve and promote the special interests of the Saami culture pursuant to Article 27 of International Covenant on Civil and Political Rights (from 1966). The threats to herding foster Saami to seek solidarity and strength on wider platforms; and yet this is not without accompanying fears from the herding contingent, who feel their limited resources cannot be stretched to support greater numbers.

The multifaceted political dimensions of this discussion should be obvious, but are often shrouded by a form of vulgar ecology whereby the negotiated nature of Nature is instead presented as God-given, some *thing*, which like money is best sustained by living off of the "rent" of the resource "capital." Human purposiveness is conveniently hidden, and the impression given that there is but one sustainable condition which ought to be cultivated. Elsewhere, I have addressed this issue, again illustrated by the debate raging between Saami herders and environmentalists in Sweden (Beach 1997). This paper, while grounded in much of the same context, focuses upon the different strategies of resource regulation and what they mean in practice for the sustainability or alteration of Saami herder relations and by extension Saami culture.

The more determinative of its all-encompassing ecosystem humankind becomes, the more determinative become humankind's cognitive models, and the more important it becomes that the cultural model of what is natural for the ecosystem fit within what actually are the limits of flexibility for that ecosystem. As Rappaport points out, however, this is not necessarily achieved under the influence of cognized models that objectively represent ecosystems in "correct" material terms. "To drape nature in supernatural veils may be to provide her with some protection against human folly and extravagance" (Rappaport, 1979:100f).

Despite all of this, local populations have managed common resources, and if they may not *purposively* have devised traditional policies of population control to limit resource consumption, they have often devised other means to curtail resource overexploitation. Is the eco-morality of the primitive ecologist the result of really nothing more than his technological ineptitude? Has the form of commons management been learned from "the school of hard knocks?" That is, has it been necessary to experience full-blown commons tragedy repeatedly for the antidote to evolve? Or has humankind been so clever that, one has seen damage of runaway elements and recognized the need to apply homeostatic mechanisms through the problems of analogous natural systems and avoided the loss of life and limb? On what level or levels of logical typing has such learning occurred? Or has environmental flexibility been so great for some peoples that learning of this type has not been necessary at all? These questions and the

following discussions on indigenous knowledge and the relation of so-called scientific "rationality" with politics have direct bearing upon the development of Saami reindeer herding and what it means to be a Saami today.

The term "knowledge," especially as conceived when considering so-called "indigenous knowledge," conflates an essential distinction, that between cognized models and operational models.

> ...the "cognized model," is a description of a people's knowledge of their environment and of their beliefs concerning it. The [. . .]"operational model," describes the same ecological system (including the people and their activities) in accordance with the assumptions and methods of the objective sciences, in particular the science of ecology (Rappaport 1979:97).[2]

Certainly the cognized models Rappaport discusses might incorporate keen empirical observation and insight into its emic view – possibly in the form of poetics and metaphor, but they just as soon might not. To use Rappaport's terminology, the reference values, that is, the culturally determined notions of what people think should be the states of the systems in which they participate, might entirely miss the mark of the system's so-called goal ranges, the ranges of states in which systems remain stable (Rappaport 1979:98-99). Moreover, there might be a vast amount of empirical, objective science going on among people to read signs and to relate minute changes of conditions to their culturally established and possibly quite maladaptive reference values as the basis for action. Undoubtedly detailed empirical observations (some of which might be very useful to western applied scientists) are made by local people, indigenous people, the same people who also engage in ritual behavior and who might not question certain cognized models.

Commenting upon Rappaport's distinction between operational and cognized models, Ingold (1992) rejects the view that the perceived environment

> is the outcome of an intellectual process of cognition and that such cognition is a necessary preliminary and guide to action. As I have shown, the environment, as distinct from nature or the "physical world", is the same reality constituted in its relation to a subject, or group of subjects, in their active engagement with it. It is not separately cognized, prior to action, for it is by their action in the world that people know it, and come to perceive what it affords (Ingold 1992:48).

Assuredly, as Ingold argues, the environment is not mere flux prior to its

[2] Of course, we cannot know that an operational model is truly objective since the so-called objective sciences with which it is in accord rest upon assumptions. In fact, this paper takes the position that (especially today with the great ecological determinacy of humankind) such operational models are based upon negotiated political positions concretized in so-called Nature.

ordering through cultural categories (1992:39). Gibson's theory of direct perception asserts that the environment provides "affordances" according to the "effectivities" of agents, and that perceptions of the environment can therefore be shared by different animals and peoples with different cognitive models (Gibson 1979; Cf. Ingold 1992). Yet, freedom from the assertion of cultural or cognitive priority for perception and action does not necessarily imply at all that cognitive models might not influence perception. Shared perceptions can be compatible with a broad number of different cognitive models without for that matter being secondary to them. "Tools," states Ingold, "since they enlarge the effectivities of their users, can radically transform the perception of the environment" (1992:46). The "education of attention" formed both by past ancestors and personal experience provided by an older, experienced hunter to his apprentice can also be considered like a tool in this respect and is certainly not devoid of cognitive categories. Persons and environments are mutually constitutive (Ingold 1992:40), and yet, while we can understand that this process is neither only "an accommodation of culture to the imperatives of nature," nor only "an appropriation of nature within the categories of culture" (Ingold 1992:40) but both, we must also realize that the mutuality envisioned here does not maintain a set blend for all types of activity. It is indicative that Rappaport, emphasizing the impact of cognitive models, does so from within the context of ritual, while Ingold (1995), elaborating on the actions by which people come to perceive the world and what it affords them, does so from within the context of subsistence hunting practices.

The ritual behavior generated from a cognized model of religious world order was and is dedicated to sustainability of this same eternal order. This is a far cry from the dedication of ecological science to the "sustainability of development" or the "advance of knowledge," belief open to uncertainty. Moreover, the pace of advance in scientific knowledge has become so fast that at any point it takes on the character of opinion, or provisionality, all the more (see Rappaports's (1994) discussion of *logos* and *doxa*).

With reference to the ritual cycle of the Maring, Rappaport writes: "It is in terms of this mediation among supernatural entities that the material variables comprising the ecosystem are regulated" (1979:106). Elsewhere, Rappaport compares the values of different cognized models:

> All cognized models encode values, but all do not value the same things equally, and we may inquire into the adaptiveness of different sets of evaluative understandings. A model dominated by, let us say, the postulates of economic rationality would propose that an ecosystem is composed of elements of three general sorts: those that qualify as "resources," those that are neutrally useless, and those that may be regarded as pests, antagonists, or competitors. In contrast, the Ituri Pygmies take the forest encompassing them to be the body of God. These two views of the world obviously suggest radically different ways of living in it (Rappaport 1979:101).

While each different cognized model might well result in the different regulation of the material variables comprising the ecosystem, there is a vast difference between what might be termed a logos-oriented cognized model and a doxa-oriented cognized model. The Maring and Ituri models mentioned by Rappaport appear to be of the former type, while that dominated by economic rationality, whose reference values are as impermanent as the whims of the innumerable variables influencing the market, appear to be of the latter type. Within both of these two main categories of cognized models will exist examples of reference values significantly at odds with each other, just as there might be complete agreement between the reference values of a particular logos-oriented cognized model and another doxa-oriented cognized model. In terms of their adaptive effectiveness, and assuming that those acting upon them were equally able to realize them, these last two models would be given the same adequacy score by Rappaport.

As the Saami case so well illustrates, however, it can indeed be quite important whether the motivation for a certain behavior is justified by the actors according to the one type of model or to the other, and whether or not outsiders credit the behavior of the actors in the same way. Have the Saami conserved lichen cover out of love for Mother Earth? Or have they done so according to the postulates of economic rationality? In the political negotiations for ecological empowerment, a salient point might be to what extent local indigenous ecological regulation is deemed to emanate from, and in turn support the maintenance of, cultural propositions and if it might thereby become the object of protection under various human rights covenants. The distinction between logos- and doxa-oriented cognized models is indeed given significance in daily life and does influence moral decisions. How indigenous cognized models are in turn cognized by the majority population can prove vitally significant to the course of state resource policy. The Saami have much more support to gain from the general public by presenting their herd management as being mediated by unique and stable cultural constructs, even a romanticized higher cosmic understanding passed down through Saami generations, than by presenting it simply as guided by the precepts of economic rationality or ecological science. In the latter instance, they run the risk of dissolving the distinction between Saami herding and herding by anyone else and thereby call into question their special rights of resource access just as they have been criticized on the same grounds for use of modern, high-tech equipment.

In this respect, the Saami are caught in a bind: the desire, shared to various degrees by herders and architects of the welfare state alike, for improved material lifestyles or even simply the maintenance of the same living standard among the herding population in the face of increasing costs (or decreasing profits per reindeer) leads to modernization strategies as well as government

supported rationalization programs to improve returns. Generally this has meant increased implementation of and dependency on high-tech equipment to lower the cost of labor and raise efficiency, but all too frequently this has also meant increased costs which have not been exceeded by the generation of increased profits as hoped. However, the more herders utilize modern, high-tech gear and methods promoted by state agricultural schools, the less the herding livelihood is regarded by society as a whole as being an expression of Saami culture and a livelihood rightfully granted special resource rights in support of Saami culture.[3]

On the one hand I hold that the culture concept alone is too rigidly precoded to integrate effectively with environmental context changes and cannot portray realistically what is going on in Saami reindeer herd management. On the other hand I argue that indigenous Saami science, even if as much based on knowledge in constant revision or opinion as so-called western science, will nonetheless set reference values not necessarily like those advocated by the Swedish herding authorities or the Swedish Environmental Protection Committee (Miljövårdsberedningen) and that these are meaningful to the herders as *Saami* herders. I believe this meaning is primarily due to the preservation of at least some degree of Saami self-determined enskilment, entailing a long continuum of the ability to form and transmit an ever-adapting repertoire of rules of thumb, guidelines which are then tempered on the basis of one's own immediate experience (as Saami) to become skills-in-context.

Of course change is inevitable and often to be desired; Saami herders have colonized new herding territories and been forcibly relocated to new ranges without losing their ability to herd. While the preservation of reindeer ranges and the maintenance of the herder recruitment base are essential, equally so is the process by which these are attained: who controls the process of Saami herder enskilment? That is, who is making the decisions (local practitioners or central bureaucrats)? And for whom (local practitioners or the Swedish nation)?

The politics of knowledge

In keeping with the recommendations of *Agenda 21*, the Swedish Ministry of Environmental Protection received directives from the government in 1995 to present measures to attain sustainability in the country's mountain regions and accordingly presented a report, (SOU 1995:100), which focuses to considerable

[3] A notable attempt in some herding areas to reverse this viscous circle is to employ Icelandic ponies for herding work. Not only might the use of animal horsepower prove cost-efficient, it also helps herding Saami break out of the mold in which Swedish society has come to cast them, that of being "eco-criminals," far removed from guardians of an indigenous, close-to-nature culture.

degree explicitly on reindeer herding. Feeling their stewardship of the mountainous regions further usurped by the government and the ecological wisdom of their particular cultural idiom and livelihood, reindeer herding, questioned, the Swedish Saami have done their best to participate in the formulation of a national environmental program for the mountainous regions (Cf. Samefolket, 1996:24; Sametinget Information, 1996:18 ff.). However, it is one thing to be allowed to join in the statement of broad, hardly-contestable environmental goals and quite another to be allowed to participate in the formulation of the practical regulations to enforce them.

Wherever sustainable development is conceived of as being achieved through the regulatory mechanisms of modern science empowered by western man (with added aspects of indigenous knowledge screened for appropriateness, i.e. translated and assessed according to western reference values) it is sure to be well linked to the runaway expansions of industrialized society. The careful monitoring of variables from within a locally closed system will hardly be possible, and similarly the benefits of appropriated indigenous science will hardly escape serving external interests.

The ongoing ecological learning process, together with humankind's limitations in charting causal connections, means that many of the issues raised above are never finally "solved" or ultimately and irrevocably right or wrong. They are subject to science, but are also inevitably the domain of negotiation – on the human level, the domain of politics. Moreover, those with vested interest often care little for the validity of the arguments used as long as they generate sympathy and muster power. No ecological "patient" has any difficulty finding a "doctor" that espouses the particular form of cure desired, for while the symptoms of disease may be self-evident, in the systemic soup any one of a horde of variables can be singled out for blame.

Under these circumstances, with varying perspectives not only about the cure for ecological ills but also about the desired state of what is to be regarded as ecological health, the nature which is to be supposedly sustained, it is evident that science and politics are hard to keep separate; nor should they necessarily be separated. Indeed, ecological harm can stem from denying their necessary and justifiable relation, when, for example, as illustrated in the material from Lapland described below, science is maligned as serving one or another narrow political agenda only, or when politicians fail to take a necessary political decision and instead defer to science for leadership it cannot single-handedly provide.

As I have addressed elsewhere (Beach 1997) the political struggle for stewardship of the grazing lands and the problem of trying to define the normative state of Nature which is to be sustained, I shall focus here upon the regulatory mechanisms invoked to contain the over-grazing problem and what repercussions result. The over-grazing debate in Swedish Lapland is a specific

case which encompasses a vast array of general points pertinent to the construction of environmentally sound and culturally sensitive management systems. It is also a debate which in the local Swedish arena holds wide-ranging repercussions for Saami enskilment and personhood.

Starting points and terms

A number of starting points and terms elaborated previously (Beach 1997) are also useful in the present discussion: A broad spectrum of relatively sustainable herd-management forms with different herd sizes or similar herd sizes but with different intensive-extensive methods is possible for the same area. Similarly, a herd held in a more or less sustainable relation with its grazing land under one management form might well be propelled into an inherently unstable relation which slowly depletes grazing resources by another management form despite uniform reindeer numbers. Quantifiable values of reindeer numbers and calories available on grazing areas, taken alone, are but hopelessly crude indicators of grazing pressure.

Some terms must be distinguished in order to proceed: 1) With reference to the goal ranges of a system (the ranges of states in which systems remain stable) mentioned by Rappaport, or its "limits of flexibility" according to Bateson, we can speak of "goal ranges" for the reindeer-grazing ecosystem, one inclusive of grazing and reindeer *(not herders)*. When related to the reindeer element of the system, one can speak of "goal reindeer ranges" to signify the lowest to the highest number of reindeer which can be sustainably accommodated in the reindeer-grazing ecosystem.[4]

Another term related to herd size and used frequently by the herding authorities is 2) "rational herd size." Rational herd size is the term commonly used to define for a Sameby the greatest number of reindeer (of an age/sex composition to yield the greatest yearly profit) which can be regularly sustained on the seasonal range (usually the winter range) that forms the bottleneck in the Sameby's annual grazing cycle – that is, without endangering regenerative capacity of the pasturage. What is most rational at any time, of course, varies according to the integrated cost/profit shifts of numerous variables. This is a

[4] One can also speak of the goal ranges for the reindeer within a more inclusive system encompassing the reindeer, grazing and herders, "goal herding ranges." Human mediation makes a difference in the number of reindeer which can be accommodated sustainably on the same pasturage. Obviously it might make a major difference should this be Saami herding mediation (protected by special indigenous legislation and rooted in a continuity of Saami enskilment) or non-Saami mediation. Recognition of this wider system and negotiation of its parameters are the essential issues of the companion piece (Beach 1997) to this essay.

term whose origin lies squarely with the herding authorities, is grounded in the concepts of the western market economy, and does not concern itself with satisfactions other than dollars and cents (within sustainable bounds). For an in-depth historical review and critique of rational herding policy, see Beach 1981. While an accurate rational herd size fits within a Sameby's goal reindeer range, it is not necessarily identical to its upper limit. Goal reindeer ranges take no consideration of the age, sex, size or meat quality of the reindeer utilizing the land. A Sameby sustained at its maximal goal reindeer range would probably in turn sustain its herders to a lesser degree than it would were the herd kept at the rational herd size.

Finally, there is 3) the "total allowable reindeer quota" or (TAQ), the figure set by the herding authorities as the ceiling herd size permitted for a Sameby. TAQs are tailored to each Sameby according to the best educated guess of its bottleneck seasonal grazing capacity. This includes supposedly hard data from grazing inventories, but also past experience. Like the rational herd size (which unfortunately is often considered to be one and the same with the TAQ even in principle), a TAQ is supposed to be within the goal reindeer range of a Sameby, pressing its upper limit. While ideally the TAQ and the rational herd size of a Sameby are to coincide, TAQ values are quite stable and do not follow the rapid shifts of the market, slanting maximal profits toward the production of fewer, but bigger deer or increased numbers of smaller head. While a TAQ might be adjusted should a Sameby suffer major and permanent loss of territory due to the building of a hydro-electric dam, for example, TAQs are generally the same year after year, their margins of error recognized to be greater than most adjustments which might be justified by market shifts.

I should point out that I have constructed the term "TAQ" to draw parallels to the TAC, or "total allowable catch," utilized for setting quotas within the fishing context. In defining the term, I wish also to draw attention to the fact that it is conceptually distinct from the "rational herd size" used by the authorities in its stead. The TAQ is a limit set by administrative decree regardless of the principles involved in calculating it or the methods employed (for example, aerial photography or herder traditions) to realize those principles. The rational herd size is a limit supposedly reached when applying the principle of profit maximization "within the limits that nature can tolerate." By failing to distinguish the two terms, the herding authorities gloss over matters of political negotiation and present herd size limits as defined by nature and the laws of science (Beach 1997).

Given the fact that each of Sweden's ca. 50 Samebys – the social, territorial, and to some extent economic herding units – has an individually designated total allowable reindeer quota (TAQ),[5] instituted precisely to obviate

[5] Except for the four northernmost mountain Samebys, Könkemä, Lainiovuoma, Saarivuoma and Talma, which share one large TAQ in common.

overgrazing, it is plain that the private herd size of any one herding Sameby member, his herding labor engagement, husbandry goals and success at realizing them, affect directly issues of herd size and management forms for all his other Sameby fellows.

Here as in other pastoral societies, a basic goal of the pastoralist is to maximize his herd size both for reasons of prestige and security. The risk of reindeer losses to predators or to "bad winters" (when, for example, access to lichen grazing is blocked by a hard crust of snow) motivates many herders, who own reindeer stock privately but who graze them on lands held in common by the Sameby group, to opt for an expansionist ideology. Moreover, the Swedish law regulating the herding livelihood, the Reindeer Act of 1971 – often abbreviated RNL – (with subsequent revisions) bases a herder's voting power within the Sameby upon his herd size (justified by the same arguments that give a shareholder power in a company proportional to his or her share of stock in it), but with the stipulation that herders get one vote for each newly started hundred head of deer. These conditions fit nicely the preconditions of the Hardinian model of commons dilemma leading to eventual tragedy of the commons.

Regulatory systems

According to the Reindeer Act of 1971 each Sameby as a collective is to ensure that its TAQ is not exceeded. Just what measures are to be taken to enforce this ruling, however, are not specified. As one might expect, group and familial allegiances, practical problems and difficult moral quandaries have tended to hamstring this policing function of the Sameby. While the Sameby collective itself is to deal with herd cutbacks, the issue is further complicated by the fact that each individual's voting power in the Sameby is related to the number of reindeer he possesses. The following questions come to mind, and I have heard them discussed among herders: Should each family herding enterprise, the big as well as the small, be forced to reduce its stock by the same amount? Or should reduction be by percent of each herder's total herd? Should it not matter if the herding family unit in question has ten mouths to feed or only one? Should there not be a herd-size base per individual below which one need not go? But is it fair to demand such disproportionately large reductions from the relatively reindeer rich who might well have attained this position through hard work and sacrifice? These questions have lain fallow during the years of low TAQ pressure, but now they are being pushed to the surface (particularly in certain areas) by rising reindeer numbers.

On a number of occasions both past and present, herding authorities have

implemented enforced slaughters but have avoided many of the above questions by simply slaughtering all reindeer to be found at a certain time in the "wrong" place, for example below the Agricultural Line in July. While it may be argued that the reason these reindeer were spread over this area at that time was due to overly high total reindeer numbers and resulting grazing pressure (though there is also a good chance that this is not the reason), the direct impetus for such drastic measures was hardly grazing preservation but rather to satisfy the demands of enraged farmers or hunters.

This kind of enforced slaughter signifies the total collapse of relations between local Saami and non-Saami and failure on the part of RNL and the herding administration. It is also decidedly harmful to the impacted herders whose animals are slaughtered not according to any selective principles of good husbandry, and who frequently are unable to retrieve any profits from animals slaughtered in such fashion. Typically, such so-called slaughter resembles more a hunting massacre whereby local non-herders are given the job simply to shoot on sight any reindeer within a defined area. The antagonism felt by many local non-Saami hunters in a region inflamed by the reindeer overpopulation controversy might be matched by the thoroughness with which the reindeer are shot. While the meat of any reindeer slaughtered in this way is to be sold to the benefit of its owner, the deer may prove unsellable, being so full of bullet holes. Moreover, the Sameby must also pay for the labor of these unwelcome slaughterers hired by the herding authorities.

On the whole, despite the few and infamous enforced slaughters, Samebys have not had to react to TAQ excesses. Controversies resulting from such excesses have not been many or severe before being rendered moot by mass starvation during bad winters. A measure far less drastic than enforced slaughters is the tough but reasonable practice of the herding authorities to withhold subsidies and grazing catastrophe relief funds to Samebys which have exceeded their TAQs without having made concerted efforts to reduce herd size.

Whereas herders have complained bitterly about grazing loss due to heavy logging, road networks and hydro-electric power dams, environmentalists are now attributing significant grazing deterioration to the reindeer themselves. Rightly or wrongly, according to a vociferous lobby the "cure" for herding ills is to be attained by disciplinary measures within the herding livelihood itself. Moreover, the tables have been turned; Saami herdsmen are no longer simply martyrs to modern, exploitive high-tech industries, they are cast as the high-tech destroyers of Sweden's natural heritage and a real threat to industries such as lumbering and tourism.

It is not difficult to understand that the current predicament would eventually come to pass with the herds of some Samebys exceeding their TAQs and, among these, some that may even have exceeded goal reindeer ranges. Strong incentives exist for herders actively to cross the TAQ limit. The society

of practicing reindeer herders commonly produces more potential recruits rising to full herding status within the Sameby than can be supported by it at a decent economic standard (see Beach 1983 and Paine 1964). Since herding is an ethnically monopolized livelihood in Sweden and one of the most definite Saami identity markers, herders and many of the incoming recruits will not readily abdicate their herding heritage and rights and will cling instead to that livelihood despite a meager household economy. Naturally their interests lie in herd increase. The rising costs entailed by modern herding with the increasing use of high-tech equipment along with the fact that the price herders get for their reindeer meat rarely keeps pace with inflation (Beach 1981) also lead herders to desire herd increases simply to maintain the same living standard. Rational herding principles, designed largely because of these very problems in order to squeeze the last drop of sustainable profitability from the livelihood, position the herd sizes of a reproductively explosive species at the maximum TAQ. There might well be available room between the TAQ and the rational herd size for some herd increase (as well as between either of these and the maximal goal reindeer range) without incurring ecological retribution, and the Sameby regulatory function has been a paper product without realistic chances of success.

The crossing of the TAQ may be difficult enough to prove, but the crossings of both the illusive rational herd size and the maximal goal reindeer range are almost impossible to ascertain. Nonetheless, the specter of reindeer overpopulation and overgrazing conveniently attributed to the commons dilemma alone has resulted in new, more stringent penalties imposed by the passage of Proposition 1992/93:32 (Prop. 1992/93:32, 109 ff.) to enforce adherence to the TAQ. Regardless of the real or perceived need for implementing regulatory mechanisms to reduce herd size, there is evidence that some of the mechanisms imposed are futile or even worse – conducive to the problem – largely because the real reasons behind herd increase have not been confronted and hardly alleviated.

Article 35 of the Reindeer Act of 1971 states that if necessary to observe the TAQ or otherwise to promote herding interests, a Sameby has the right to set individual reindeer maximal limits for its individual members. Such limits set by a Sameby cannot be so severe as to undermine or seriously threaten the ability of its members to continue the herding livelihood. However, the Sameby has had no means to enforce such individual limits, and by extension the herding authorities have had little means to command Sameby TAQ compliance except as last resort by the drastic measure of non-selective enforced slaughter.

The new regulations are meant to complement those already in place and to render them effective at last by empowering them with fines both to the Sameby and if necessary to particular Sameby herders if limits, collective and individual, are not respected. It goes without saying that it is necessary for each

Sameby to perform annual reindeer counts, for the internal management and economic considerations of a Sameby as well as for establishing herd size in relation to TAQ (even individual herd sizes for compilation of herder voting strength,[6] herding fees to the Sameby and taxation purposes). Nonetheless, Samebys have proven lax in performing the counts ordered by article 66 RNL and have also relied overly on estimates and opportunistic answers from the herders. Samebys are now required under threat of a fine to deliver to the herding authorities an annual report of their reindeer count distributed according to owner. The authorities are to be informed of the time and place for reindeer counts, and they are now authorized to supervise operations and verify numbers.

Now, under the threat of financial sanctions by the herding authorities, Samebys with overly high reindeer numbers can be called upon to reduce total herd size. This will in turn cause the Samebys in question to implement §35 of the Reindeer Act with the specification of individual maximal herd limits. Particular, noncompliant herders are also liable to penalties if they exceed their individual limits. Of course, it is hoped that such procedures will prompt the herders to make husbandry decisions for the slaughter of more animals and thereby to alleviate the pressure without suffering the probable losses that an enforced, non-selective slaughter executed by the authorities would entail. In this way a Sameby can be made to take the difficult moral decisions regarding herd reduction policy. Yet individual quotas need not be set by a Sameby which has not been charged to do so by the herding authorities, and to date only a few Samebys have been called upon to do so. To my knowledge, in those cases where §35 has been implemented, the Samebys have chosen to set one limit for herding units composed of families with children and another, lesser limit for herders who are single.

Of course the Sameby can take other actions on its own initiative. One such measure is to impose a herding fee per reindeer to be paid by the owner to the Sameby collective treasury. According to RNL such a fee is required if the Sameby's budget shows a deficit and then only to the extent necessary to balance the budget. The obvious formula for calculating the herding fee would be to divide the deficit by the total number of reindeer in the Sameby, but there is nothing to hinder a Sameby from imposing a herding fee beyond that required to meet the budget deficit. A fee might be imposed without any Sameby deficit at all (Beach, 1981:328 ff.).

Samebys host herders with a wide range of individual herd sizes and with great or small engagement in herding labor. Not infrequently a Sameby contains a number of members derisively titled "hobby herders," whose herding return

[6] Under the new regulations introduced by Prop. 1992/93:32, a herder will not have the right to increase his voting power on the basis of deer in excess of the individual herd-size limit permitted him by the Sameby (Prop. 1992/93:32 §59, point 2, page 16) should a need for total Sameby herd reduction require imposition of such individual limits.

warrants (and is also largely occasioned by) minimal herding engagement. Artcle 11 of RNL stipulates that a Sameby has the right to oust herders who have come to shift their main income to a nonherding source, a so-called 51% rule. Naturally, it is not possible for a Sameby to oust one small herder by invoking the 51% rule without ousting all small herders according to the same criterion. Usually every extended family or "big group" herding partnership would stand to lose members by strict implementation of the 51% rule, so there are reasons for most parties to keep it dormant. Moreover, so long as grazing pressure is low, and small herder presence no constraint on the other more active and successful herders (often with most voting power), small herders are permitted to remain as active members within the Sameby.[7] Otherwise, sons might be pressured to vote out their pensioned fathers, an eventuality that would not only rip the Sameby's social cohesion, but also occasion the loss to the collective of the herding knowledge possessed by the ousted members.

Unfortunately, this is precisely what begins to occur, leading to mounting social tension within the Sameby, as grazing pressure increases and the herd size of one herder comes to inhibit the possible herd sizes of others. There are only about 900 active herders in Sweden today, with family members about 2,700 people engaged in and dependent, to varying degrees, upon the herding livelihood. Were §11 to be strictly enforced, herder numbers could drop by as much as 30%, a dismal scenario for a small indigenous minority fighting to preserve its special livelihood, culture and legal rights.

An alternative to the all-or-nothing implementation of §11 (the 51% rule) is for the Sameby to set a relatively high herding fee. Small herders must then either pay the collective treasury for their continued membership or else drop out. Should the small herder aspire to big herder status, and be so intent upon maintaining herding skills that he is willing to work for the collective herding good beyond what his herding income alone might justify, he can still be a real asset to the Sameby. He will also be in the position to earn back money he has paid to the Sameby in herding fees by volunteering for Sameby salaried herding labor.

Uncontrolled rise of the herding fee is dampened by the fact that all herders, the big as well as the small, must pay it. Bigger herders might be hit hard indeed if the herding fee is set at a high level, since they will have to pay so much for their large herds, and since they most likely do not hold other jobs to bring in other income. Then again they might choose to weather a temporary spell of abnormally high fees in order to flush the small herders from the Sameby. Small herders with external income sources might choose to pad losses from their herding with money earned elsewhere, but it is doubtful if they would

[7] There are Samebys where small herders are the rule rather than the exception, and in this case the combined voting power of the small herders can outweigh the combined vote of the big, full-time herders. Given this situation, small herders might remain in the Sameby with or without the support of the big herders.

accept too much herding loss for too long.[8] I am aware of at least one Sameby that has instituted a differential herding fee whereby all herders with less than 200 head must pay a higher herding fee than the others. This case has been brought to court by the small herders who demand that the Sameby set an undifferentiated herding fee, but should they press too hard and win the battle, they always run the risk of losing the war, for the Sameby has the legal right to invoke §11 and exclude the small herders from the Sameby entirely.

It is an interesting exercise to speculate upon the possible developmental phases of a Sameby's membership and policy with regard to the 51% rule depending upon the distribution of reindeer among its members and voting block proportions. The strict implementation of the 51% rule is in keeping with both the (dubious) principles of 1) structure rationalization, to improve living standards for those remaining; and 2) the privilege-of-occupation paradigm of indigenous rights, whereby only "real" full-time herders are worthy of special resource access since it is they who uphold "true Saami culture and traditions." Yet there are Samebys dominated by the combined voting power of the small herders, and they will certainly not vote themselves out of business.

One can even imagine a situation where the Sameby's TAQ divided fairly into individual limits yielded individual herd sizes far below the number needed by herders to maintain decent living standards and far below what would be required for each herder to maintain his main income from herding. Should overgrazing occur, it would be impossible for a Sameby in this position both to be fair in its specification of individual limits, and at the same time to comply with the law prohibiting the setting of individual limits below the point of minimal economic viability (§35 of the RNL). A Sameby in this situation is not in the least rescued from the commons dilemma by Swedish regulatory legislation. The Sameby will not vote to invoke the 51% rule – cannot, without destroying its membership base (maybe ousting all herders); it cannot set both fair and non-threatening individual limits; and none of its members can afford to cutback his already small herd size without incurring economic ruin. Herders in this boat face disaster any way they turn, and in all likelihood will continue along the current course. In effect, Swedish regulatory legislation, despite its new provisions in RNL, is in this situation still incapable of dealing with aspects of dilemma which will in time lead to the tragic gridlock of too many herders for the reindeer and at the same time too many reindeer for the pasture.

Whether individual limits have been set or not, this situation is not mere

[8] Since by Swedish law, special hunting and fishing rights for the Saami accrue to the practice of reindeer herding as supplementary rights, i.e. rights which can be practiced only by Sameby members, there are indeed cases where herders might still prefer to pay high herding fees, even if that should require funding from non-herding sources. A herder's subsistence and monetary gains from the exercise of his special hunting and fishing rights might far outweigh his strict reindeer profits and make it worthwhile to maintain a token herd, and this situation, in turn, by encouraging small herders to maintain their active status, tends to counteract the reduction in Sameby membership.

conjecture; despite rationalization policies (or maybe in part because of them) many herders today live below the official subsistence minimum. Herders can be trapped by a need to expand their reindeer holdings but without the money to buy more stock should the rate of their herd increase prove too slow and without the "space" within the Sameby's TAQ to allow expansion. In the instances where herding space is indeed available, herders have been known to take out bank loans to finance the purchase of stock, but not all herders can convince a bank that such a project is a good risk, nor are herders always willing to take the risk themselves of losing the reindeer with outstanding loans on them.

Reindeer increase and reindeer accounts

Rangifer tarandus is a species whose explosive population peaks and valleys have generated a good deal of attention and numerous predictive models (e.g. Wynne-Edwards 1965; Ingold 1976). Under pastoral management reindeer herds are generally controlled within more sustainable and less drastic population fluctuations. Underlying are still many of the same pressures, however – prominent among them that a number of good climatic years in succession can bring about rapid growth. When coupled to a strong market where reindeer meat is in high demand, the reindeer industry can easily convert the reindeer increases of good years into profits while maintaining a relatively stable herd size. However, should disappointingly low reindeer meat prices accompany a period of good years there is risk that herders will reduce their sales and thereby fuel herd growth. This has been the situation in Sweden, especially following the Chernobyl nuclear disaster. Fear of radioactive contamination caused an initial period of purchasing resistance with regard to reindeer meat (Beach 1991), and this in turn caused slaughterhouses to reduce their prices drastically. Herders were convinced that in order to bolster their own profits, slaughterhouses took the opportunity to reduce prices to the herders even more than what might have been justified by the purchasing resistance.

One might think that despite reduced prices herders in their economically pressed situation would be forced to slaughter as much as possible anyway in order to make whatever gains they could. Yet another factor plays a pivotal role in this equation. Up until the most recent tax reform in 1993, the Swedish taxation system with the so-called "marginal tax" appropriated almost all profits from reindeer slaughters beyond that amount which the herder, defined by law as a business enterprise, could reinvest in his business. The Swedish situation was such that many herders at least were not so much pushing for herd growth as *simply letting it go*. They were not necessarily cutting back on personal

spending, but just not expending the effort to slaughter when it would be for them no gain. Swedish tax policy would take almost all the proceeds from slaughters beyond a certain number. When asked why they did not slaughter more reindeer than they did, herders often replied "Let them run!" The explanation for this pervasive attitude does not appear to stem from any desire for greater voting power, prestige or security, especially not as concerns those many small herders who have other major sources of income, who are pensioned, or whose main interest in herding is for the sake of the special rights to hunting and fishing accruing to Sameby membership. Rather, the primary explanation seems to lie elsewhere.

It is likely that herders would not be so prone to let their "excess" reindeer run were Sameby herding fees set high. However, many Samebys have routinely received sizable compensation payments from exploitive industries for the destruction of grazing lands, and with these funds in the treasury there is generally no need to balance the budget by imposing a herding fee. Compensation payments resulting from the construction of hydro-electric power dams in the north, as well as those related to the Chernobyl nuclear disaster, padded many Sameby budgets during the latter half of the 1980s. Even as these supplementary sources of funds have declined, most Samebys have continued to try to keep herding fees low or nonexistent. Consequently, what we have here is a case of burgeoning livestock inventories because there is often little financial incentive either to sell the animals or to keep their numbers down. No herder wants to kill a reindeer for nothing. This situation is significantly different from the familiar form of the commons dilemma, in which it is the sum of many individual maximization schemes combined that ruins the commons.

With the taxation reform, herders do have a possibility to keep a higher percent of their profits, and debts in their herding businesses can be carried over from one year to the next. It is my experience, however, that few herders indeed are well versed in taxation mechanisms or avail themselves of funding possibilities or other strategies such as temporary reindeer stock devaluation to maximize profits and to level expenses. The most common taxation strategy employed is simply to try to avoid it. Herders are still frequently prone to keep low the number of slaughters and to manage their household finances frugally with their necessary herding-related costs of operation, even though increased income and increased expenditures might well stimulate each other.

The afore-mentioned let-them-run problem had a simple solution. The new idea, developed in the 1980s and still much debated, was especially controversial prior to the tax reform act of 1993 (which to some degree rendered the issue moot by reducing the marginal tax). The idea was to institute so-called "reindeer accounts," whereby herders would be able to slaughter many more deer than needed for one year's budget demands and then save the excess money in the bank, to be taxed for it only once withdrawn. In this way, meat that is

currently stored on the hoof could instead be stored in the form of money in the bank, avoiding grazing depletion and without depriving the state of any taxes. Simply put, the deer could be slaughtered according to ecological factors but utilized according to herder need. A similar program has been in place for years for owners of forest land, who benefit from "forest accounts" constructed in just such a fashion.

Tax-deferrable reindeer accounts, it is argued, would also provide herding pensioners a means of gradually decreasing their herding activities, easing themselves from the field, and freeing grazing resources to the young, active herders. Retiring herders would not have to suffer major financial losses with the drastic reduction of their reindeer stock. Reindeer accounts could also be used by many herders even before they began pressing their Sameby-imposed individual herd-size limits and prior to thoughts of retiring from the field. Such accounts would afford herders a means of risk-free, labor-free saving of their capital with interest in the bank. Capital stored in this way during the fat years could be used to ease the lean years.

As we have noted, the rationalization package espoused by the herding administration and involving calf-slaughter in conjunction with an advantageous age/sex composition within herds is founded upon a sustainable Sameby herd size at the maximal TAQ. Yet powerful tendencies militate against the long-term maintenance of such a balance: (1) the ever-rising need for herders to have more reindeer to maintain the same living standard, (2) the potentially explosive nature of reindeer population increase during good years, (3) the extensive or overly extensive form of herding common today with reliance upon expensive high-tech equipment, and (4) the dictates of meat pricing and taxation policy with respect to reindeer herding. Unless some kind of institutionalized homeostatic mechanisms to counter such tendencies can be devised – something like the reindeer accounts – it is inevitable that herd growth will come to challenge TAQs and the regulatory mechanisms that enforce them.

Countering the commons dilemma – current methods

So far, the methods discussed to deal with overly high reindeer numbers – including enforced slaughters, TAQs, maximal reindeer limits per herder (enforced only once the total ceiling is pressed) supported by penalties, and even the herding fee system (except in certain circumstances) – have been partially successful at best. While such policies may help preserve the commons, they do

not necessarily confront the dilemma as such. In this section we shall examine some current methods employed to combat the dilemma which so often fuels the commons tragedy.

Collectivized work system

During the 1960s when the groundwork was laid for the rationalization program for reindeer herding embodied by the Reindeer Act of 1971, much consideration was given to the appropriate herd size and herding labor force. I do not mean here the Sameby's total herd size, but rather the herds in the field; for a Sameby might host a number of different herds belonging to different groups. Profits were to be increased by maximizing the number of reindeer per herd entity while minimizing the number of herders necessary for its management. Besides saving labor, it was thought that proper reindeer/herder proportions would help to bring individual herd sizes and the engagement of their owners into reasonable balance. A herd composed of many small owners might not need the presence of each owner on the job at all times. Big owners, who could be reasonably sure of finding enough of their animals at any given slaughter corralling, had been in the position to "free-ride" on the labor of their smaller colleagues, who felt forced to participate in the hard gathering operations if they were to find any of their deer to slaughter. The proposal to institute a Sameby herding fee, as discussed above, together with a system of salaried labor paid for by the Sameby from its collective treasury, was intended to solve both the problem of reindeer/herder proportion and the problem of free-riding.

The desired balance between the size of an individual herder's herd and his herding engagement thus became a matter of money, not just of labor. The Sameby was put in control of herding operations, and big herders who owned more head would pay more in total than the small herders for the management of their reindeer. Were the small herders to work more, they would also be paid more. The Sameby was now in the position to orchestrate and pay for the labor only of those herders actually needed for a task, regardless of the ownership structure over the herd.

> Since the herding-entity size with the current herding methods is to a high degree dependent upon the division of reindeer according to different owners, there are in principle two different ways to increase herding-entity size: either one changes the structure of ownership so that the work entities will regularly compose suitable units, or else one changes the herding method so as to break or at least weaken the connection between reindeer possession and herding activity (SOU 1968 16:55)

The Swedish state chose the second of these two alternatives. The Herding Act (RNL) of 1971 reorganized the Samebys under a (hybrid) economic-cooperative structure, in which the Sameby as a *collective* was given legal power within

certain limits to control herd size and work organization for the common good. According to the Herding Act of 1971 (§ 9), the goal of the Sameby is to conduct herding in the best way for its *collective* membership (Beach, 1981:327). Another, related issue encompassed by the so-called structure rationalization of the RNL and its welfare ideology was not just reindeer/herder proportions with respect to labor efficiency, but also with respect to the herders' standard of living. Elimination of small herders was seen as desirable in order that those herders remaining could increase their reindeer holdings and achieve higher incomes (a goal which, as we have seen, was largely destroyed for long periods of time by unwise taxation policies). Conveniently, the amount of herder reduction deemed appropriate to ensure those remaining a decent income seemed to correspond well with the number of herders state investigators considered unnecessary from a labor point of view.

Despite the legislation of centralized herding authority for the Sameby over its different members, it has been realized in practice only to a minimal degree (Beach 1981:328). Such centralized methods – collectively negotiated and voted upon – are hardly appropriate to deal with the shifting, intuitive, unique and on-the-spot demands of herding decision-making in the field. Successful reindeer pastoralists must have detailed knowledge of both their herds and their ranges. Each herder must maintain a high degree of autonomy in order to react effectively to the shifting demands of climate as well as the herding behavior of his colleagues. Partnerships shift seasonally and yearly.[9] Only the most general of centralized decrees with regard to herding issues could be worthy of respect, and I doubt that any elected chairman of a Sameby of any size who attempted much else would be obeyed or re-elected. At least this is true in the Samebys with which I am familiar, where membership size is great and centralized chairman leadership would demand behavior beyond that which could simply be embodied by the head of an extended family. In reality the chairman's main duties are, for example, dealing with the herding authorities, lobbying to protect resources against land encroachments, and juggling the formalities of how the Sameby collective funds are to be spent. He may be a respected leader by example, but he is not a general for his troops. Nor does the Sameby as institution play the full role assigned to it by law – yet.

The shift in character of the Sameby and its chairman as promoted by the authorities is clearly visible in legislation concerning Sameby membership in the different Reindeer Acts. Up until 1928 any Saami could freely establish himself as a herder and register himself as such in a Lappby (the earlier prototype of a Sameby). Ever since the passage of the Reindeer Grazing Act of 1928, however, free establishment has been closed. The existing Lappby members were given the power to decide which herding applicants would be

[9] Space does not permit here a more detailed description of traditional herder knowledge and interaction; for this the reader is referred to Paine, 1994.

admitted to the Lappby and would thereby be given *the right to practice their reindeer herding rights*. It is interesting to note that at the time of its institutionalization this legal paragraph (which has confiscated the civil rights of many Saami) was justified largely by the need to reduce herder numbers in order to ease grazing pressure and to ensure those Saami privileged to be herding Lappby members sufficient numbers of reindeer (Beach 1981:312 ff.). Today, the same ruling is maintained, frequently with the argument that herding within the Sameby is a group effort. The Sameby is no longer simply an umbrella under which free-standing herders must register to share the responsibility of reindeer damages to crops; it has become a collective unit whose work efforts might suffer from the inappropriate actions of a newcomer. Within the contextual presuppositions of the prevailing herding system, therefore, it seems reasonable that the existing members should collectively take the decision to admit (or more commonly deny admission to) a new member. Yet it is also worth bearing in mind that the objectives of optimizing reindeer management are not necessarily congruent with the long-term goals of sustaining a viable Saami culture.

Collectivized share system

Although the construction of RNL chose to try to break the link between reindeer ownership and the herders actually working with the reindeer, the other alternative, to change the structure of ownership itself, has also been a topic of discussion. While no one seriously contemplates a confiscation of private property and the creation of state or publicly owned herds as was carried out in the former Soviet Union, other models of collective ownership have received consideration. Notably, in a draft proposal the county of Norrbotten's herding administration presented the idea that all the reindeer of a Sameby should receive a single Sameby ownership mark, and each herding member of the Sameby would be credited with shares in this collective herd according to his reindeer holdings at the time of implementation (Länsstyrelsen 1994). In effect, each reindeer would become a share of the total herd, but instead of owning, for example, 100 head out of a total of 10,000 head, a herder would own 1 percent of each and every 10,000 deer.

Such a system would not equalize reindeer wealth, but it would tend to freeze the distribution of wealth at the point of initial implementation. Of course, further mechanisms might be established to redistribute reindeer shares – for example, in Russia today the dissolution of many reindeer herding sovkhozes has resulted in a situation where undifferentiated reindeer constitute a collective herd belonging to a group of co-owners. Reindeer are gradually coming back into individual private ownership, because they serve as a means of payment for labor performed for the collective herd. Foreign currency is hard to come by, and the value of Russian currency is unstable. Payment in reindeer

provides a workable solution.

Under the plan drafted for consideration by the Norrbotten county herding administration in Sweden, reindeer shares would become a market commodity, to be bought and sold. Of course, reindeer have been market commodities for centuries, which herders have been able not only to sell to the slaughterhouses but also to purchase with bank loans to increase their personal stock and income. Yet it would still be a major change should the commodity item become reindeer *shares* rather than individually owned deer.

These contemplated changes would also have major repercussions for issues of Sameby membership, inheritance rights, and personal fortune. While today it is almost impossible for Saami who are outside of the Samebys to gain entrance, children born of Sameby members have been able to grow into the livelihood. Under the share system, however, the place within the Sameby of children born to shareholding parents would rest upon the transfer of shares. Whereas today a herder intent upon carving a place for himself or herself within the herding livelihood might do so by dint of dedicated work and good luck, under the share system there would no longer be any privately accruing benefits but only the good or bad fortunes of the Sameby as a whole. In the same manner, the hard work of a single member would benefit the entire group; and while this might well result in herd increase and augment the return from each share, it would not necessarily raise the number of any individual's personal shares. Most likely shares would tend to gravitate into the hands of a few big shareholders, and the link between share ownership and actual work with reindeer might become so weak as to be non-existent. Those who performed the actual herding labor might soon become little more than hired hands, in effect (just as the workers in modern industries may hold small amounts of personal stock in the companies that employ them).

One thing is certain: just as the dedicated work of one shareholding herder would, under this shareholding system, go directly to the benefit of the entire group, so would free-riding at the expense of the group as a whole come to benefit particular free-riders. Certainly the free-riding herder would also lose his portion of the benefit that a vigorous contribution on his part to the collective work effort might have provided, but he stands to gain many times more by rechanneling the time he takes from collective herding in order to labor specifically for his own profit – perhaps even by taking another job. The situation would then parallel that of the current free-riders under the herding-fee system. These salaried free-riders take the herding jobs provided by and paid by the Sameby but tend to perform them poorly and slowly. Other herders complain that the slightest bad weather is likely to cause them to stay in the herding cabins collecting pay, or else they might be working diligently for their own benefit – for example, freighting their own supplies by snowmobile – when they should be patrolling the herd or else freighting Sameby supplies. Getting the job

done properly and efficiently might no longer be as important as getting paid for it.

Basically, the problems considered here all have to do with the transition from small-scale, rudimentary capitalism (Paine 1971) to full-scale, modern capitalism; and then again from there perhaps to a modified version of communism. The tendencies toward free riding are inherent in any system, be it capitalist or communist, which abandons (or "sublates") the simpler ways of direct involvement in personal production and labor. One can trace without difficulty the growing controversy generated by free-riding as herd management has step by step spiraled into increasingly extensive form (Beach 1981:331 ff.) with collective structures of labor and responsibility (Hedbäck 1928; Renutredningen 1960; SOU 1968 16; Ruong 1964:61). Yet there is an additional twist in the current instance, in that the forces driving this dialectical development appear to spring not only from economic considerations, but also from the perceived exigencies of environmental policy. By their very nature, the mechanisms employed or suggested to counteract the commons dilemma, i.e. centralized Sameby herd management responsibility (now to contain an environmental management component) with collectivized labor system and the (proposed) collectivized share system, unavoidably entail much increased opportunity and incentive for free-riding. Free-riding has become a major topic among herders when discussing the qualities of their fellows, and it has also become a main concern of the Boards of Samebys who see how much money is paid out in nonproductive salaries. At least one Sameby has tried to introduce a system of checks whereby salaries are not paid unless the job is properly performed (although one cannot always evaluate extenuating circumstances with certainty).

As Hardin suggests, shame is probably the most effective mechanism to keep what is referred to here as free-riders in line. Sameby sizes do not exceed what he has dubbed the "Hutterite Limit" of 150 people below which shame is effectuated by face-to-face confrontations (Hardin 1991:181); yet as noted, good excuses are not hard to come by in reindeer herding. Shame, therefore, becomes somewhat a matter of budgeting excuses, and those who strain their fellows' credulity too far will soon find themselves marked as hypocrites and shirkers by the herding community at large. On the other hand, among the members of a Sameby-appointed work team, anyone who wishes to invoke an excuse will appreciate the confirmation of his fellows, and what one might call a consensus of exaggerated but plausible work-preventing hardship can easily be reached as a collective work-team excuse without the least open discussion of even partial artifice to mark it as exactly that. It is understandable for each herder to reason, "Why should I work hard if I can see that my partners have no intention of doing so?"

Allocation of winter grazing: toward the ranching model

The usual strategy for dealing with the commons dilemma, is, of course, not to make the resources in question common any more. In the effort to improve the allocation of responsibility over jointly needed resources, it is often helpful to divide them up into smaller units. Privatization is the ultimate expression of this strategy; yet there can be a number of different levels of common access to resources which approach full privatization but fall short of it when for other reasons it is not desired or cannot be achieved.

The winter grazing lands of the Swedish Mountain Samebys extend far below or east of what is called the "Agriculture Line" by immemorial usage. Whereas above or west of this Line each Sameby has well-defined ranges, the so-called year-round grazing lands, below the Line the different Samebys often compete for territory on the basis of first-come prerogative. A number of Samebys might well have documented rights of traditional usage over the same ranges. Herders generally wish to avoid mixing their herds with others in the winterlands and so will steer clear of an area below the Agriculture Line being grazed by another Sameby or another group of one's own Sameby. Nonetheless, territorial conflicts between Samebys, or even between groups within a single Sameby, are not uncommon (see Paine 1994; Beach 1991).

The Swedish herding authorities have for many years been engaged in an ongoing inventory of the winterlands below the Agriculture Line. One of the purported goals of this investigation is the allocation of specific winter ranges to specific Samebys. Complex legal issues of traditional rights based on immemorial usage are involved, but such matters have usually been ignored by the State when intent upon fashioning economically rational policies on lands which it claims to own. While the ranges to the east, if allocated to specific Samebys, would still be open to common grazing by the members within their respective Samebys, they would be off-limits to the members of other Samebys, as with the year-round lands west of the Agriculture Line. The authorities hope that removal of at least this layer of commons competition would help rationalize grazing usage and counter grazing depletion. Saami reindeer pastoralism has already been transformed in many respects toward a ranching model of reindeer management (Ingold 1976 and 1980). Allocation of the eastern winterlands would be yet another step in this direction. The undisputed jurisdiction of a centralized Sameby leadership, at least as conceived by the herding authorities, would then obtain year round, and the chances of this Sameby authority becoming fact considerably greater.

Increased extensification in herding both stems from, and calls for, the development of a larger Sameby unit of collective management control, but it also calls for fewer herders to be on the job at any one time. The use of expensive "high-tech" equipment, such as herding by helicopter (which can only be reasonably financed by the Sameby collective) also presupposes extensivity

in management and collectivized, centralized Sameby leadership, as do the development of herding fees, salaried Sameby labor, and vastly increased problems of free-riding among herders (Beach, 1981). Combined with market realities and taxation policies, along with the refusal to implement the suggested safety valve of reindeer accounts, it is easy to see how all these factors might bring about grazing depletion as part of the overall degeneration of the pastoral system.

Matters of enskilment

Of course, a major issue to consider with regard to any of the regulatory models outlined here is the effect its implementation has upon indigenous enskilment and how such changes feed back into the sustainability of the entire system. As the possibility to regulate the herd size of individual herders is so new and as yet little implemented, it can hardly be thoroughly evaluated from the perspective of changing herder enskilment. Should the model be regularly invoked, such evaluation would require prolonged field research. Nonetheless, one can certainly hazard some comment on enskilment issues based upon analysis of the regulatory mechanisms discussed here and the assumptions behind them.

As we have seen, the counter measures typically employed to hinder the commons dilemma are intent upon regulating internal competition so that individual skills and efforts contribute to the common good. Yet this is hardly possible in the pastoral context without also opening the door to free-riding. Free-riding is not merely something that herders today can do more easily than before, it is often something they must do if they are to keep economically afloat. Here again we must note another affected factor feeding back into the problem: Herding skills are gained precisely from the doing of the work and by the dynamic transmission of knowledge in context through the generations (Ingold 1996). In the context where free-riding abounds and tends to foster collective excuses claiming either undue hardship or the adequacy of over-extensive herding when greater intensivity is in fact called for (thus having the effect of reducing group performance), skills may well be suppressed rather than practiced and thereby not handed on through the process of enskilment. In time they will cease to exist, and what was once an excuse becomes reality: the herders might no longer be able to deal effectively with a certain situation even if they tried.

There has probably never been a time earlier when the herding skills of the older generation were so different from those of the herding youth. The young, modern herder has been raised with snowmobiles and now motorbikes.

Herding as he knows it has always been extensive. He has not witnessed the reindeer caravan era. His ability to exercise fine-tuned pastoral mediation between his animals and the land is often severely limited.

The herding fee and salaried wage systems, as well as the suggested share system, are potential diminishers of herder knowledge, as they may well bring about a widening distinction between older, highly skilled reindeer owners and younger herders who work with the reindeer. The older herders fiercely maintain and exercise their husbandry rights, but they will gladly pay for the youngsters to perform herding tasks. The separation of these two essential aspects of reindeer management undermines the skill of mediation between the animals and the land. The routine use of motorbikes in herding work has decreased the average age of herders on the job considerably during certain seasons. Riding motorbikes in the mountainous terrain is so physically demanding that only the young do it on a regular basis. Physical wear and tear on the young tends to make their biking careers short. Should herding families be driven from the field by rationalization programs or by the proposed system of reindeer shares and the gradual concentration of shares that this might bring about, there will also be an even greater reduction in the numbers of skilled herding recruits.

Use of high-tech equipment and the speed with which herding operations are now completed has diminished the amount of time available for social interaction among herders in the field. Herding families, and even the herders themselves, no longer live in the field to the extent they once did. This in turn has greatly attenuated the transfer of herding knowledge. Herding work has increasingly become something undertaken with a spurt of intense, hurried, and expensive high-tech effort. Time has always been money, but today the costs per minute are far greater. As non-herding jobs play an increasingly important economic role in more and more herding families, herding shrinks and no longer sets the frame for a socially shared way of life to the extent that it did. Of course, to tie a culture's survival to the continuation of any single means of livelihood (be it by externally imposed state legislation or by internally glorified cultural ideals), especially when that livelihood requires extensive reserves in an era of diminishing resources, looks like a recipe for disaster. Saami cultural survival may be predicated upon the survival of the herding livelihood, but it cannot be maintained by this alone.

The redefinition of herding as a modern business enterprise has meant that funds plowed back into the business are deductible; otherwise they are taxed (especially in the past, quite heavily). On the collective Sameby level, compensation payments – for example, from the hydro-electric company for grazing lands put under water, or from the government for the extra labor involved with the management of cesium-contaminated reindeer after the Chernobyl nuclear disaster (Beach 1990) – have resulted in considerable Sameby funds which, according to the Reindeer Herding Act, can only be spent

on the herding enterprise. Both of these, the individual and the collective-Sameby constraints, in turn stimulate the purchase of high-tech gear and the chartered use of helicopters and transport trucks to carry the reindeer between ranges or to slaughter. Surely this too can be viewed as pastoral mediation, but it is a form of mediation which impairs rather than enhances fine-tuned pastoral skills among herders. The reindeer too have a role in this, as they also lose knowledge of useful routines. Deer freighted to and from different grazing ranges by truck year after year hardly know the migration route.

The State Agriculture Board has recently proposed a so-called dynamic grazing regulatory model (Constenius & Danell 1995) which hopes to improve upon previous regulatory attempts. By design it constitutes a system sensitive to reindeer health, herd needs, and grazing status by constant monitoring of various indicators. Moreover, it envisions a flexible use of grazing units which would be most efficient in a context involving different Samebys (and maybe even Norway). In some respects, therefore, this dynamic model can be likened to traditional Saami pastoral mediation. Both are geared toward highly sensitive micro-monitoring of the reindeer and grazing environment so that it can be utilized and conserved most effectively. In the dynamic model, however, such monitoring is formally encoded in terms of given Swedish Natural Norm reference values and is to be performed to great extent with the technology, methodology and supervision of Swedish scientists — to use Paine's (1994:143) term, "desktop pastoralism." Regulation, in fact management as a whole, is to be carried out by a strongly empowered and centrally governed Sameby according to Swedish dictates. In contrast, Saami traditional mediation was built upon a continuity of Saami enskilment and the self-organization of individual herding families in shifting partnerships with other similar units without the encompassing dominance of any centralized authority.

Conclusion

Even if the benefits to individuals of maximizing their herds cannot be entirely removed, herd reduction might be made individually meaningful by measures such as herding fees or grazing fees exacted per reindeer. The imposition of a total ceiling limit, while it might save the commons, does not eliminate competition among members of the commons. And if regulations come to eliminate aspects of dilemma with respect to the grazing of the commons, these same regulations might inspire wide-spread aspects of commons dilemma on other fronts, such as with regard to labor for the common good in the problem of free-riding. Similarly, if one fails to impose maximal quotas for individuals before a total ceiling limit has been reached, one does not eliminate competition

among commons members and dilemma until that ceiling is reached and stabilized *with all commons members at their component maximal quota levels.* If, for example, the Sameby's reindeer limit is exceeded and some herders are far above their individual limits while others are far below, once those who have too many decrease their stock to bring the Sameby total under its collective limit, their will be a scramble among the other herders to fill any available room with their *own* deer. In fact, should the smaller herders continue to increase their holdings toward their individual limits and thereby push the Sameby total over the top again, it is not they who will be forced to cut back, but those who are still at that time over their individual limits. In short, those under their individual limits have no reason to cut back even with the total Sameby reindeer population at or over its limit.[10]

In a pastoral system, it is only when individual quotas are enforced *whether or not the total ceiling limit which encompasses their sum has been attained* that competition among commons members with regard to grazing is avoided. Note, however, that such a system can be distinctly at odds with rationalization policies and the stated goals of "sustainable development" which seek to utilize available resources sustainably *yet fully*. Should an industrious herder reach his individual quota long before the Sameby's total ceiling TAQ is achieved, restraint of his herd growth appears wasteful.

Despite the advances of the dynamic grazing regulatory model to utilize grazing units most effectively and to spot incipient pasture deterioration, it is still my contention that a large part of the overgrazing problem stems from its attempted cure. This is occasioned largely by what might be called the *process of dilemma exportation.* This process has two integrated aspects:

1) A runaway parameter (such as a population group) constituting part of a subsystem within a larger encompassing system increases beyond sustainable limits. Instead of being regulated, however, the problem is filtered away, (temporarily) closed out of the subsystem, by mechanisms defining subsystemic participation (e.g., membership within an affiliated group, such as the Sameby). This runaway parameter is then transferred (not necessarily by deliberate policy or intent) to the larger encompassing system, where it eventually has an impact upon it and thereby, reactively, upon the subsystem of origin.
2) Controlling mechanisms are sought to counteract the resultant resource shortage by means of centralizing authority (e.g., ownership structure or

[10] Should this situation be accompanied by years of good growth for the reindeer population, it will naturally result in the leveling of all individual herd sizes to their prescribed limits, and this condition would continue until reindeer losses (by slaughter, predation or the catastrophic climatic blockage of grazing access) brought about a total Sameby herd size well under its TAQ, whereupon individual herd sizes could again begin to diverge dramatically.

work organization) in order to prevent the reaping of individual benefits at the collective expense. This leads, in turn, to the transfer, or exportation, of the dilemma from the pre-existing situation involving the original limited resource to another common resource, such as time or collective funds for work-related salaries: hence, an exportation of the original dilemma.

This latter type of exportation can only be avoided should there simply be no other common resource available to the members of the system. One can imagine the situation whereby Sameby reindeer were owned by members according to the shareholding system, but all common labor for the herd were conducted by a non-owning, salaried work force – that case in which the Saami reindeer owners were to become ultimate capitalists, living off the profits from their reindeer shares and contributing only money per share (or reindeer) for the herding costs (assuming the profits permitted the functioning of such a system). In this case the shirking of one laborer would not at all give him an economic advantage over the others at their common expense, and to that extent the larger problem would be circumvented. Yet not only would such a situation be disastrous for the moral justification of the Saami herding monopoly, it would also destroy the continuity of Saami herding enskilment. Moreover, shirking on the job would not necessarily decrease simply because labor time would not be a common commitment. On the contrary, lacking self-interest in the maximal profitability of the resource, the entire labor force might work only half-heartedly, to the extent they could without risking salary reduction or job loss. In short, even a complete elimination of the commons dilemma's possibility is certainly no sure route to sustainability.

It is understandable, therefore, that from the Saami perspective, commons-related problems accruing to reindeer herding will approach a sustainable solution only to the extent that the Saami in Sweden are given clear and appropriate playing rules: clear definition and protection of rights, and empowerment to act responsibly within those bounds. Indeed, Saami leaders have not been slow to express their Saami environmental views, and these opinions deserve serious consideration as coming from experts.

To be sure, overarching ecological concerns cannot be denied, but rather than a Swedish model in which Saami enskilment is co-opted and herders are treated as wayward children in need of ecological schooling, some form of co-management would seem appropriate. (Interesting and successful models exist, notably between indigenous peoples of Canada and the Canadian government.) Saami inclusion as co-managers of a program designed by Swedish range biologists offers little for the sustainability of either Saami culture or reindeer herding.[11] Instead, what is necessary is Saami inclusion in a *mutual*

[11] As I have argued elsewhere (Beach 1997:143-4), should reindeer herding in Sweden ever become divorced from its status as an indigenous livelihood and the protective policies this entails, no amount of western science

collaboration in the setting of long-range goals as well as in a *co-designing* of the program to achieve them. However, an insistence by Saami on the slavish implementation of a static interpretation of traditional Saami cognitive models in herding would not necessarily prove most pertinent for them in the modern context. What is requisite is rather the maintenance of Saami-determined (be it modern or traditional) herder apprenticeship in the field. Only in that way can the Saami find a permanent and secure niche within a living ecosystem that needs them as much as they need it.

References

Bateson, G. 1972, *Steps to an Ecology of Mind*. New York.

Beach, H. 1981, *Reindeer-Herd Management in Transition: The Case of Tuorpon Saameby in Northern Sweden*. Acta Univ. Ups., Uppsala: Uppsala Studies in Cultural Anthropology 3.

-1983, A Swedish Dilemma: Saami Rights and the Welfare State. in *Production Pastorale et Société, bulletin de l'équipe écologie et anthropologie des sociétés pastorales*. Paris: Supplément à MSH Informations, Publié avec le concours du CNRS. No. 12 printemps.

-1990, Perceptions of Risk, Dilemmas of Policy: Nuclear Fallout in Swedish Lapland. *Social Science & Medicine*, Vol. 30, No. 6, pp. 729-738.

& M Anderson & P. Aikio 1991, Dynamics of Saami Territoriality within the Nation-States of Norway, Sweden and Finland. In M. Casimir & A. Rao, eds., *Mobility and Territoriality: Social and Spatial Boundaries among Foragers, Fishers, Pastoralists and Peripatetics*. New York: Berg Publishers.

-1997, Negotiating Nature in Swedish Lapland: Ecology and Economics of Saami Reindeer Management. In E. A. Smith, ed., *Contested Arctic: Indigenous Peoples, Industrial States, and the Circumpolar Environment*. University of Washington Press.

Constenius, T. & Ö. Danell 1995, *Metodutveckling i fråga om renbetesinventeringar*.

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or technology could save it in the long run from reduction to a minor tourist attraction in the face of competition for land resources from other financially powerful industries. (Nor is it assured that indigenous status can prevent this development notwithstanding.)

Ellen, R. 1986, What Black Elk left unsaid: On the illusory images of Green primitivism. *Anthropology Today*, 2 (4). pp. 8-12.

Gibson, J.J. 1979, *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Hardin, G. 1991, The Tragedy of the Unmanaged Commons: population and the disguises of Providence. In R. Andelson, ed., *Commons Without Tragedy: Protecting the Environment from Overpopulation – a New Approach*. London: Shepheard-Walwyn.

Hedbäck, E. 1928, Diverse anteckningar om renen och renskötseln från Arjeplogs sockken. Uppsala: Unpublished report in Dialekt- och Folkminnesarkivet, ULMA 2139:1.

Ingold, T. 1976, *The Skolt Lapps Today*. Changing Cultures. General editor J. Goody. Cambridge.

-1980, *Hunters, pastoralists and ranchers: Reindeer economies and their transformations*. Cambridge: Cambridge University Press.

-1992, Culture and the perception of the environment. In E. Croll & D. Parkin, eds., *Bush base: forest farm – Culture, environment and development*. London: Routledge.

-1996, The optimal forager and economic man. In P. Descola & G. Pálsson eds., *Natue and Society: Anthropological Perspectives*. London: Routledge.

Länsstyrelsen i Norrbottens Län, 1994, *Strategiprogram 95, landsbygdsutveckling*. 1994-01-28, responsible for reindeer herding: Jan-Ivar Rönnbäck, Luleå.

Paine, R. 1964, Cultural Demography and Nomad/Sedentary Relations of Reindeer Groups in Norway and Sweden. Paper presented at the VIIth International Congress of Anthropological and Ethnological Sciences, Moscow.

-1971, Animals as capital: Comparisons among northern nomadic herders and hunters. *Anthropological Quarterly* 44:157-72.

-1994, *Herds of the Tundra: A Portrait of Saami Pastoralism*. Smithsonian Institution Press, for Anthropologica. XXXVI. pp. 232-234.

Proposition 1992/93:32, *Samerna och samisk kultur m.m.*, 1 Riksdagen 1992/93. 1 samling, nr 32.

Rappaport, R. 1979, *Ecology, Meaning, and Religion*. Berkeley: North Atlantic Books.

-1994, Humanity's Evolution and Anthropology's Future. In R. Borofsky, ed., *Assessing Cultural Anthropology*. New York: McGraw-Hill.

Renutredningen 1960, *Renskötselns Organisation och Renprodukternas Marknadsförande*. Betänkande avgivet av Renutredningen. A mimeographed report presented to the Department of Agriculture.

Ruong, I. 1964, Jåhkåkaska sameby. *Svenskt Landsmål och Svenskt Folkliv*. 87th year. Dialekt- och Folkminnesarkivet, Uppsala.

Samefolket 1996, O. Andersson, ed. Nr. 1. Östersund: CEWE-Förlaget.

Sametinget Information, 1996. Hållbar utveckling i landets fjällområden, nr. 1, January

SOU 1968 16. *Rennäringen i Sverige*. Stockholm.

SOU 1995:100. *Hållar utveckling i landets fjällområden*. Betänkande av Miljövårdsberedningen. Miljödepartementet. Stockholm: Regeringskansliets Offsetcentral.

Wynne-Edwards, V.C. 1965. Social organization as a population regulator. *Zoological Society of London Symposia* 14: 173-78.

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