



## The cultural impact of electronic devices in reindeer husbandry

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Modernization of traditional animal husbandry is never easy if it is perceived as forced. An important element of all modernization is thus that it comes at the right time and for the right reasons. Bioforsk performed a qualitative survey on the social and cultural impact of implementing electronic devices in reindeer husbandry. The aim of this study was to investigate the attitudes towards these devices among reindeer herders.

We focused on the following devices in our survey: electronic ear tags, electronic surveillance (GPS) and electronic weight and sorting systems. How are these devices perceived as development for better or for worse in reindeer husbandry?

All societies are in continuing development and adjustment to the world around them. As such, development in itself is an inescapable, and not undesirable concept. Reindeer husbandry has changed in many ways since the 1950's (cf. Berg 1997). Most development has led to improved working and living-conditions for the herders and their families.

## Background

Reindeer husbandry separates culturally and historically from other forms of livestock farming. Reservations toward electronic devices should therefore be interpreted in correlation to underlying factors rooted in the historical and cultural traditions of reindeer herding. It is important to look at the issue from the "insider perspective" to understand the Sami motivation and way of thinking (cf. Benjaminsen and Svarstad 2008).

Restrictions to certain forms of modernisation might be rooted in fear of losing control over the stages of development. Reindeer husbandry contains a powerful feeling of identity for many people in the Sami community, and it is important not to lose relevant symbolic elements. Inherited knowledge of the old traditions and the language following them contains the essence of the past and the history of the ancestors. Preserving these traditions is a way of expressing respect for the ancestors and of the Sami culture. These aspects must be emphasized if one is to achieve sustainable development in a way the herders themselves want to participate in.

## Materials and methods

A questionnaire was sent out to herders in every reindeer district in Norway, either by e-mail or by regular mail. The questionnaire was also available as an internet survey. We received 28 replies from all the districts, although most of them were from Vest-Finnmark and Nordland. The replies were analysed qualitatively. The results are presented in full as a Bioforsk Report (Hind et.al. 2014).

## Results

### Identifying with the old traditions

Our study revealed that almost all the respondents of this questionnaire considered the old traditions of reindeer herding to be of great importance to the Sami identity (table 1).

Practicing and continuing these old traditions, is a way of visualising pride and respect towards one's ancestors.

### Well-adapted devices

According to the replies, reindeer herders are generally positive to electronic devices, but they seek tools that are better developed to fit the actual challenges in reindeer husbandry. As this form of husbandry is based on all year rangeland grazing, the devices must handle changing weather and low temperatures. Gathering the herd for marking and sorting most times takes place in the mountain, and the devices must therefore be portable and possible to run by a portable generator and small compressors.

We asked the respondents which of the following devices they see a need for in reindeer husbandry (table 2). A majority were positive to electronic surveillance with GPS, as a way of gaining a better overview over the herd and its grazing pattern. This was also the device most would invest in, followed by electronic ear tags.

The majority of the respondents also recognized that devices like this would contribute to increase the efficiency of the reindeer herding. However, this effect must be considered in correlation to higher expenses and loss of traditional knowledge.

### Threats to traditional reindeer husbandry

A majority of the respondents do not see electronic devices in itself as a threat to the traditional reindeer husbandry. However, some do. These are herders from the northern districts. A possible explanation of this difference may be that the traditions are stronger and more essential in the north. Whereas herders in the south are a minority and as such may be more adapted to a more modern form of animal husbandry.



Lassoing and manual handling is still a common way of handling reindeer today. Photo: Grete H.M. Jørgensen.

Table 1: How much do you think traditional reindeer herding influence your Sami identity (in e.g. language, culture, traditions)? (N=27).

|              | Per cent (%) | Total |
|--------------|--------------|-------|
| Large degree | 81,48        | 22    |
| Some degree  | 11,11        | 3     |
| No degree    | 3,70         | 1     |
| I don't know | 3,70         | 1     |
| Total        | 100,00       | 27    |

Table 2: Which of the following electronic devices do you think there is a need for in reindeer husbandry? (N=26).

|                               | Per cent (%) | Total* |
|-------------------------------|--------------|--------|
| Electronic surveillance (GPS) | 61,57        | 16     |
| Electronic ear tags           | 34,62        | 9      |
| None                          | 30,77        | 8      |
| Electronic weight             | 15,38        | 4      |
| Other                         | 15,38        | 4      |
| Electronic sorting systems    | 3,85         | 1      |

\*Possible to answer more than one alternative



Snow scooter was a necessary device for the herders to adapt to the general cultural development. Photo: Liv J. Hind.

The answer from one of the respondents show how it might not be the devices themselves that are considered to be a threat, but rather what they represent of political control, abuse of power and lack of understanding and knowledge.

*“Reindeer husbandry must use electronic devices in such a way that they are of help. But as it happens to be, politicians and bureaucrats can’t be trusted. So the husbandry must protect itself from misuse of power. There are enough of examples where harmless information is misused. It’s not right when the theoretical world don’t harmonize with the real world. There is a widespread scepticism to state officials because of their behaviour and conduct. They mean well, but it’s all wrong because they’re not in our real world. If bureaucrats in the different departments and sections of administration had enough empathy to try to understand how the world works outside of their office door, then we would succeed. If the information is being misused/used in the wrong way, then the reindeer husbandry will be damaged.”* (Translated)

A majority of the respondents agreed that electronic devices, such as electronic ear tags, would entail even more surveillance into reindeer husbandry.

Several of the respondents were sceptical to the economic consequences of implementing electronic devices to reindeer husbandry. These are expensive to purchase and use. Earlier studies have shown that 70-75 % of all purchases are products and equipment produced outside the district, which in turn entails reduction in local economic growth (Karlstad et.al. 2009).

#### **Verifiable knowledge of animal welfare**

Animal welfare is an important aspect of meat production in Norway. As reindeer husbandry in many ways differs from other husbandries, there is a need for more verifiable knowledge about the welfare of reindeer. One way to obtain this is to record data on each individual reindeer over time and monitor changes in body condition (cf. Lenvik

Table 3. Do you think electronic devices will reduce the need for manual handling, and thereby reducing the risk of injury and workload? (N=22).

|            | Per cent (%) | Total |
|------------|--------------|-------|
| No         | 63,64        | 14    |
| Yes        | 22,73        | 5     |
| Don't know | 13,64        | 3     |
| Total      | 100,00       | 22    |

2005). According to research, less manual handling entails less stress inflicted on the animals (Rehbinder et.al. 1990).

However, several of the respondents, claimed that routine manual handling is important in order to keep a certain level of tameness, in addition to ensure control over the general condition of the herd. The majority also believed that manual handling was better for the animal welfare than mechanical handling. This is where knowledge from experience and research differ.

In any case, a majority of the respondents did not agree that electronic devices would reduce the need for manual handling (table 3). They pointed out that the devices require manual handling when attaching the GPS collar and ear tags, and when changing batteries. In addition, manual handling is required with procedures such as routine treatment against warble fly (*Oedemagena tarandi*) and other parasites.

## Conclusions

The majority of the respondents were overall positive to modernising the reindeer husbandry by implementing electronic devices. However, this modernisation must take place in a way that continue to focus on nature, sustainability and cultural heritage. Development that does not try to change reindeer husbandry into livestock farming will have a better chance of being accepted by the reindeer herders. Electronic devices must be introduced as the next step in a natural development of reindeer husbandry.

The survey resulted in tips from the respondents on how best to implement electronic devices into reindeer husbandry:

- Educating the herders in correct and effective use of the equipment.
- Product development to resolve electronic and operational challenges with the devices. The products must be manufactured in such a way that they can handle the challenges within reindeer husbandry, such as harsh climate and rough treatment.
- Electronic devices must be presented as a possibility to the herders, not as a demand. This can be handled by offering economical compensation. At the same time, using the traditional methods of reindeer herding must not be subjected to any form of penalty.

It is very important to adapt the devices to reindeer husbandry, not the other way around. The best way to do this is by testing the equipment in real herding situations over time.



Photo: Håkon Sund.



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