

FINLAND

Innovation and cooperation

Location

Rovaniemi

Programming period

2014 – 2020

Priority

P1 – Knowledge transfer & innovation

Measure

M7 – Basic services and village renewal

Funding (EUR)

Total budget 97 700.00
EAFRD 41 034.00
National/regional 56 666.00

Project duration

2016 – 2017

Project promoter

University of Lapland, Arctic Centre

Contact

henri.wallén@ulapland.fi

Website

www.arcticcentre.org/FI/hankkeet/panta

A study financed by the RDP aimed to find new digital solutions for making reindeer husbandry a more efficient and profitable business.

Summary

Reindeer husbandry is the traditional source of living in Lapland, northern Finland. The project aimed to develop new digital methods for making the business more efficient and profitable. The project activities consisted of literature reviews, research interviews, field studies and participatory observation.



Results

GPS-marked reindeer herds can be easily found even in a large territory. A major bottleneck, however, is the low coverage of the existing mobile phone networks, while the use of satellite data is considered expensive. So the study's recommendation was to build a new data transfer network based on radio waves.

The study suggested further development of smart clothing for herders that could contain more sensors, reacting to temperature, light, speed, quick stops, etc.

Digital accounting and reporting systems should also be developed, along mobile reporting on predator damages and the submitting of subsidy applications.

Development of the usability and accessibility of the reindeer herding's GPS data from the herder's level through all the steps of other stakeholders, including authorities, was recommended.

The training institutions in Lapland should continue to focus on providing training, information and good practices, especially on the use of GPS data.

Lessons & Recommendations

- ❑ The readiness and eagerness of reindeer herders to adopt new technologies was surprising, especially the many digital applications and devices already in use.
- ❑ But there is a need for more coordinated development and sharing of good practices in order to make the modern technologies serve all reindeer herders.
- ❑ Based on the recommendations of the project, the University of Lapland plans to launch the implementation phase of the development project. Balanced integration of different interests of reindeer herding, tourism, forestry and nature conservation will be one of the focus points.

Context

Reindeer herd freely in natural areas of Lapland, but the vast expanse of their habitats, the difficult natural and climate conditions, the presence of predator animals and the low population density make the task very challenging. Reindeer herding area in Finland expands over 36% of the total territory of Finland. The socio-cultural and geographical environment ranges from urban forest areas in the south to arctic tundra in the north.

Reindeer husbandry has undergone rapid change over the recent decades. New digital tools for smartphones and computers, and satellite positioning systems have opened up new possibilities as well as posed new challenges to reindeer herders. This digitalisation processes has altered the know-how requirements for reindeer herding. Reindeer husbandry must also meet the challenge of an aging workforce. The need for increased efficiency in the everyday work of reindeer herders is already apparent.

A study project would clarify how to best ensure the continuation and profitability of this traditional northern way of life by using digital technologies such as GIS and GPS.

Objectives

The project aimed to:

- Attract young people to enter and rejuvenate reindeer husbandry;
- Map best practices of using GIS and spatial data to support reindeer husbandry;
- Map the use of digital tools for work safety;
- Define the digital tools that could best support reindeer management in the field;
- Define the digital tools that could best manage and reduce the predator risks;
- Survey the horizontal and vertical communication and information exchange policies in reindeer husbandry; and
- Make recommendations for further steps that develop digital tools for reindeer herding in the final report.

Activities

The project was implemented by the Arctic Centre of the University of Lapland in cooperation with the Sámi

Education Institute. Kemi-Sompio, Näkkälä and Poikajärvi Reindeer Grazing Associations were the local level partners on the territory where the study was conducted.

The study was divided into five measures that were all bottom up and looking at the issues from a reindeer herder's perspective. The first one interviewed young full-time reindeer herders on business attractiveness and profitability. The second measure surveyed the level of GIS/GPS application in today's reindeer husbandry. It also included the development of a mobile GSM coverage measuring unit as well as the respective field measurements and survey on the Kemi-Sompio wilderness area. The third measure focused on digital applications for reindeer management in field conditions and the fourth on reducing the risk of predator damages. The fifth measure was interviewing young reindeer herders on their social networks, horizontal and vertical communication and information exchange.

Main results

Five recommended steps for developing the use of digital tools in reindeer herding were included in the final report:

- 1. Coordination of field work.** Here the reindeer herders saw the biggest opportunities. GPS-marked reindeer herds can be easily found even in the large territory. A major bottleneck, however, is the low coverage of the existing mobile phone networks. The use of satellite data was considered expensive, so the recommendation is to build a new data transfer network based on radio waves.
- 2. Work safety.** The further development of smart clothing was considered very promising in this field. The clothing could have more sensors than now, reacting to temperature, light, speed, quick stops etc. The digital applications should be concentrated on one or two devices, otherwise the simultaneous use of several devices while driving a snow mobile, for example, becomes a risk itself.
- 3. Digital accounting and reporting systems.** Also the reindeer herders' office work and accounting systems have been quickly turning digital. However, these applications are numerous and their features are scattered, so there is need for coordinated development. The systems should work both on desk computers and mobile devices. Mobile reporting of predator damages and submitting subsidy applications should also be made possible.

- 4. Utilisation of GPS data.** There are vast data reserves on reindeer movements, tracks and behaviour based on GPS. These can be utilised through software like QGIS that is also available in Finnish. The bottleneck is the accessibility to the data. Reindeer herding is a sensitive business sometimes conflicting with other uses of nature, but it should also follow general data openness and other 'big data' trends. So the recommendation is to develop usability and accessibility of the reindeer herding's GPS data from the herder's level through to all the steps of other stakeholders, including public authorities.
- 5. Training and information exchange.** There is a growing need for training and horizontal information and good practice exchange between the reindeer herders. The training institutions in Lapland should continue this focusing, especially the use of GPS data which has a great potential. Other platforms like the

'Reindeer Man' magazine are important too and new digital platforms could be created.

Key lessons

The readiness and eagerness of reindeer herders to adopt new technologies was unexpected, and researchers were a bit surprised that so many digital applications and device were already in use.

But there is a need for more coordinated development and sharing of good practices in order to ensure that modern technologies serve all reindeer herders.

Based on the recommendations of the project, the University of Lapland plans to launch the implementation phase of the development project. Balanced integration of different interests of reindeer herding, tourism, forestry and nature conservation will be one of the focus points.

"All of us have that little spark and interest, we want to see if these new ways can make our lives a bit easier and help us do our business even better. I always try at least, one shouldn't be too much stuck to old routines".

reindeer herder