



## The Malå Case Study, Northern Sweden

**Malå municipality** is located in the county of Västerbotten in Northern Sweden. Forestry is one of the basic industries for the development of the society in this area. Today, forestry thrives together with electric power plants, active outdoor life, mining industry, car testing, tourism, entrepreneurs, etc. Alongside these activities, reindeer husbandry has been present in the area for centuries. To be able to keep a sustainable reindeer husbandry in the area, large areas of grazing land suitable for reindeers is needed.

The objectives of the case study were to analyse:

- How competing land use (reindeer husbandry, forestry and nature considerations) affect sustainability for forestry and the Malå Sami village.
- If there are possibilities to a better balance and identify mutual benefits to forestry, nature considerations and reindeer husbandry.

The decision support tool **ToSIA** (Tool for Sustainability Impact Assessment) analyses environmental, economic and social impacts of changes in forest and reindeer husbandry value chains.





## The Malå Case study

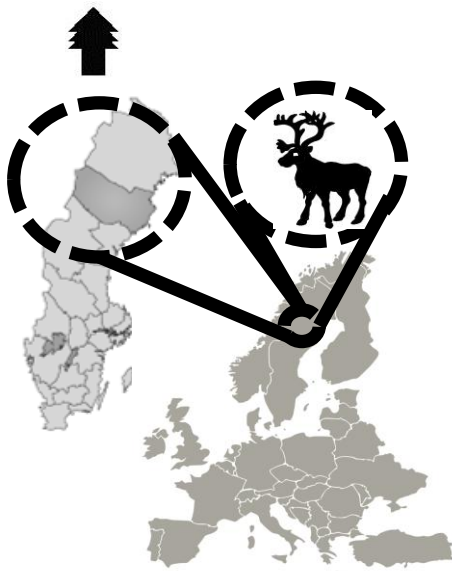
### Northern ToSIA case studies

The project included four regional case studies and these aimed to explore two types of ToSIA applications:

1. Public bodies engaged in regional development strategies can employ the tool in a multi-stakeholder setting to explore options for the most suitable sustainable development scenarios in the region.
2. Stakeholders using forest resources can adapt the tool to their sustainability assessment routines. This enables them to improve corporate social responsibility, as a part of the forest value chain, operating in the remote conditions of the Northern Periphery region.

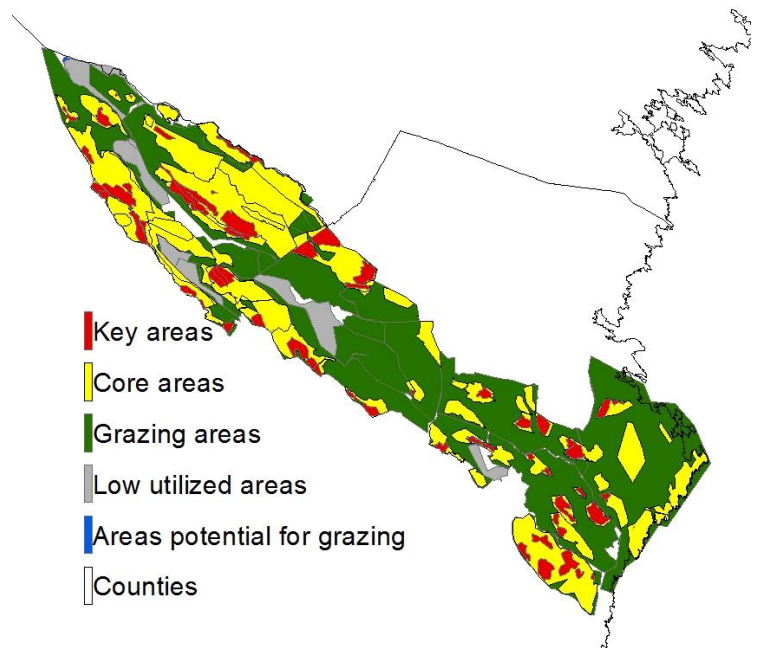
### Important questions for the Malå case study

- What impacts does different forest management practices have on forestry and reindeer husbandry?
- Is it possible to identify mutual benefit to both forestry and reindeer husbandry?



### Case study characterization

The area of the Malå Sami village is about 750 000 ha of which 530 000 ha is productive forest. The Sami Village is allowed to have about 6200 adult reindeers during winter. The use and importance of the forest land for reindeer husbandry vary from low (grey) to high (red), see figure below.



About half of the forest area is owned by small private owners and half by companies and the state. The forest sector is important for the local economy in the area. The annual cuttings in the village area is about 1,3 mill. m<sup>3</sup>.



## Forestry, reindeer husbandry and nature considerations

### Forestry

The Forestry Act sets out the demands placed upon forest owners by society. These include the wood production levels that must be attained and the considerations that must be shown for conservation of nature and the cultural heritage. Forest management practices with the objective to get a high and valuable production can cause negative impacts on the long-term sustainability of Reindeer husbandry. Therefore, large forest owners are obliged to have consultations with Sami villages before making large clear-cuttings and building roads.



### Reindeer Husbandry

The National Association of Swedish Sami has worked out a forest policy with proposals of adjustment of current forest management practices for large forest owners. Examples are more careful soil scarification, less lodgepole pine, stronger cleaning and thinnings, less fertilisation and more old-growth. Preferably, the adjustments should be concentrated on areas with high value for reindeer husbandry, such as key areas with lichens for grazing during winter.



### Nature consideration

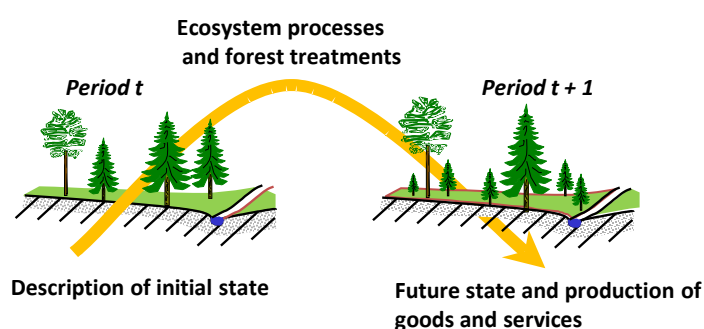
Increased considerations to nature are important to keep the biodiversity in the forest landscape. Important measures are larger set-aside areas, leaving border zones around water and mires, larger proportion of old growth and more old trees.



### Scenarios

Four scenarios with different forest management practices were forecasted with the regional forest simulator RegWise using data from Swedish National Forest Inventory and the Malå reindeer husbandry plan:

1. Business as usual - Current forest management practices
2. Reindeer husbandry – Forest management practices as suggested by National Association of Swedish Sami
3. Nature consideration – Increased considerations (set-aside areas and less intensive forest management)
4. Combined - A combination of Nature consideration and Reindeer husbandry





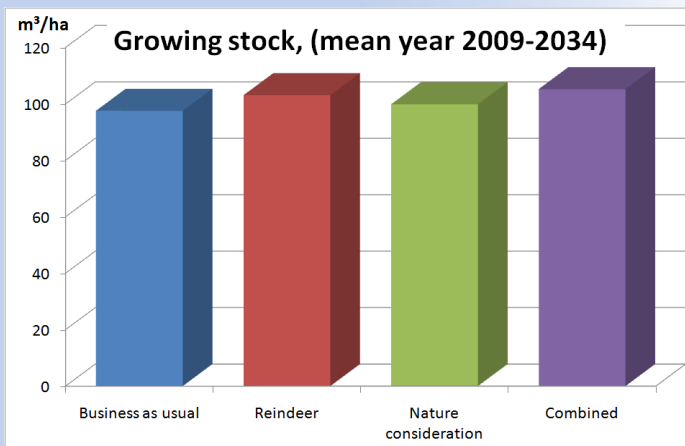
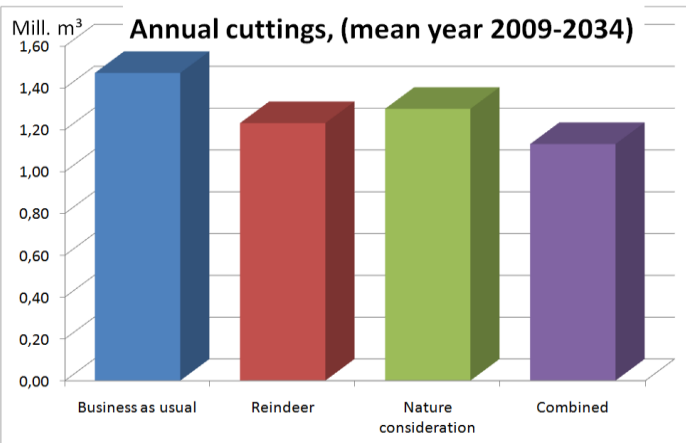


## Results and conclusions

### Forestry

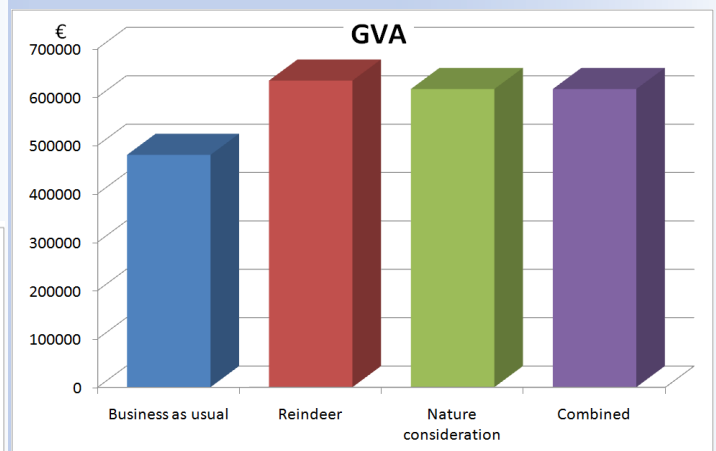
Adjustments of forest practices for reindeer husbandry and nature considerations gives;

- lower annual cuttings
- higher growing stock
- longer rotation periods with more old growth



### Reindeer husbandry

- Gross Value Added (GVA) is highly dependant on the number of reindeers slaughtered.



- Production costs are high for energy (transport), equipment (vehicles) and winter feeding.
- Crucial for reindeer husbandry is losses of calves by predators and complementary winter feeding.

