



## Swedish Case Study for the Northern ToSIA project

Within the Northern Periphery, forestry is one of the basic industries for the development of the society in remote areas. However, the land use in the area changes over time and new interest groups come and go. 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 sustainably be able to keep reindeer husbandry in the area, large areas of grazing land is needed. A continual increase of other land use activities, competing with Sami economy, might put the survival of the Sami village at risk. As the utilization of the area for other purposes increases one has to ask how much encroachment a Sami village can stand to be able to survive.

The forestry personnel and enterprises in the forestry sector in this area operate with the insight that modern forest management can cause negative impacts on the long-term sustainability of the Sami village. However, the experience of inter- and counteracting have raised socioeconomic issues rooting in land use. Several problematic interfaces are present both of economic and cultural origin. Therefore, it is a need for striking a better balance of mutual benefit to both interests. The Northern ToSIA project, which is supported by the EU's Northern Periphery Programme, has been created to address these issues.

We intend to evaluate the possibilities to increase the sustainable utilization of the forests in the area with the help of an innovative tool (ToSIA, i.e. Tool for Sustainability Impact Assessment of the Forest-wood chain in terms of social, economic and environmental indicators) and to apply it on the regional development within the Northern Periphery.

The Swedish case study, i.e. the Municipality of Malå, is one of three case studies formed within the project (Figure 1). In Malå, the Malå Sami village has most of its activities (Figure 2). The aim of the case study is to evaluate effects of changes in forestry measures on the utilization of the forests and the grazing land for the reindeers in the area. Three different scenarios that affect forest management in the area are planned:

1. Nature conservation (key habitats and protective areas)
2. Reindeer husbandry
3. The synergies between reindeer husbandry and forest conservation.



Figure 1: The location of the Municipality of Malå in the County of Västerbotten.

The reasons for choosing this area for our case study were i) that the probability to collect relevant data is good, and ii) that the members of the Sami village, which keep their reindeers mainly within the Municipality all year round, are positive to participate in the study. In 2006 there were approximately 11 reindeer husbandry companies in the Malå Sami village. The Municipality of Malå has an area of 1 600 km<sup>2</sup>, and the number of inhabitants is about 3500.

Within of the Municipality the scenarios within this case study will examine potential management changes in the forests and demand from industry. The impact of these changes on the forestry-wood chain, dependent enterprises, and the Sami village will then be evaluated. To do this, the structure and proportion of Forest Management Alternatives (FMAs) from establishment of increased areas of Forest Nature Reserve to Intensive Even-aged Forestry within Malå will be established and evaluated. Furthermore, to evaluate effects of changed management regimes a new set of economical, biodiversity and social indicators has to be introduced into ToSIA. We have decided that the following economic indicators; Gross value added, Production cost and Total production, the environmental indicators; Greenhouse gas emissions, Biodiversity, Forest resources, Energy use, Water use, and Generation of waste, and the social indicators; Employment and Wages and salaries should be used in the analyses.

To make relevant comparisons possible for the reindeer herding business, several indicators and items of economic importance for them was identified. The following would be possible to introduce in the study, i.e. amount of lichens/reindeer/year, height of lichens, accessible amount of lichens, amount of Wavy hair grass (*Deschampsia Flexuosa*), area of winter grazing land, reindeer husbandry value/year/ha, production cost for the reindeer, Income indicators as taxes to the municipality, transport cost/reindeer/year, and helicopter transport cost.

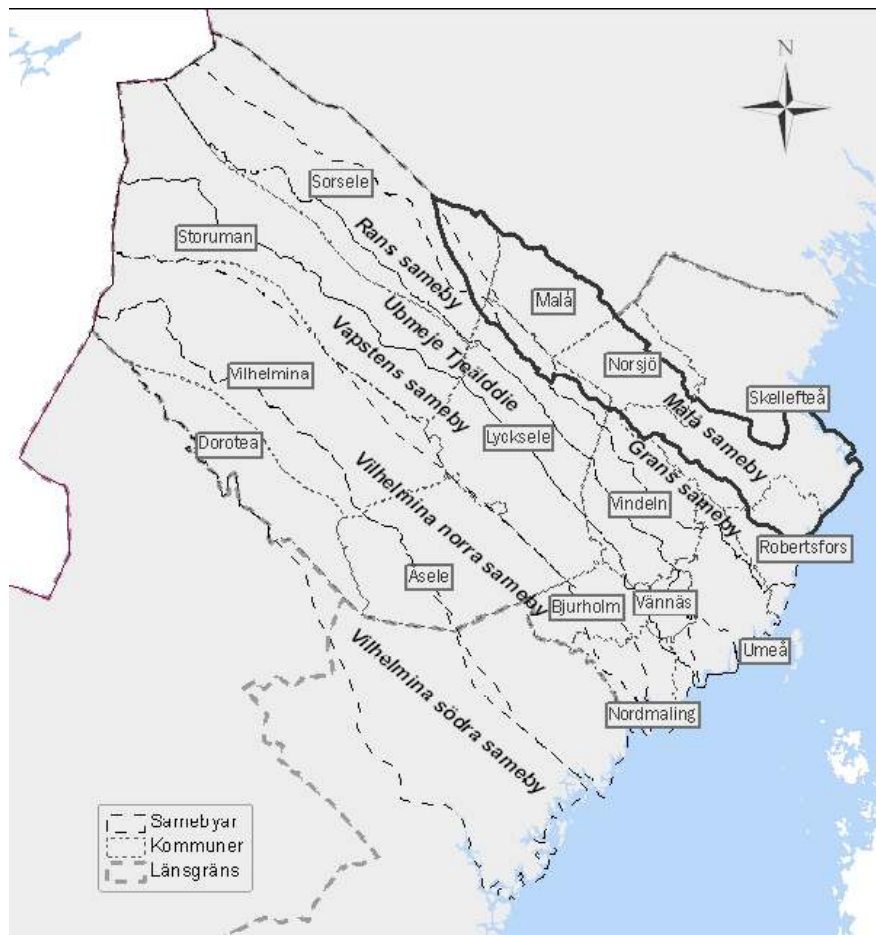


Figure 2: The location of Malå Sami village.

A number of processes was also identified that would constitute the reindeer chain (RC) similar to the FWC. The processes so identified were reindeer calving, grazing and slaughtering. These processes would need indicators for transport work, costs, and spent resources as protection and process activities. Products would be defined as reindeer unit (a reindeer) and kg of merchantable meat. This process and indicators are straightforward and easy to express if data are available.

A suggested RC chain with appropriate indicators will be developed within this case study. Other items to consider are social cohesion and local tax dividends. There have been efforts in order to find data that support the indicators discussed together with representatives from the municipality, the Sami village, and local stakeholders. The positive discussions with the stakeholders on the possibility to sample/collect reliable data for the respective indicator have led to concerns about how much time the respective data should take to sample, and who should spend that time.

The implication of this stakeholder engagement is that they being invited to contribute at all stages in the project (Figure 3), including case study selection, indicator and scenario development, interpretation of ToSIA outputs, and dissemination of results. To secure the aims of the case study the participation of the involved associate partners National Association of Swedish Sami, SCA, Sveaskog, Norra skogsägarna, is a prerequisite.



*Figure 3: The outline of the interaction between the different Work Packages (WP).*

Once the forest and regional analyses are complete, the indicator results will be presented to various groups representing the range of industrial, environmental, recreational and community enterprises and interests. A methodology will be created to perform a multi-criteria analysis from the viewpoint of each stakeholder group. This will allow for a comprehensive review on how the same changes in forest management will affect the diverse priorities of each group.

The application of ToSIA as a regional development tool will allow the decision makers at regional level to explore alternative regional development strategies and assess their impacts on environmental, social and economic sustainability.

The Northern ToSIA project will run for 36 months (2008 – 2011). The majority of the case study forest and regional analyses will be completed by late-2010 and will be followed by the stakeholder engagement until mid-2011. An important step in case study development was the workshop in Umeå in August 2009. It enabled discussions on case study development planning between representatives from the forest sector, local stakeholders and project partner.