

Northern ToSIA

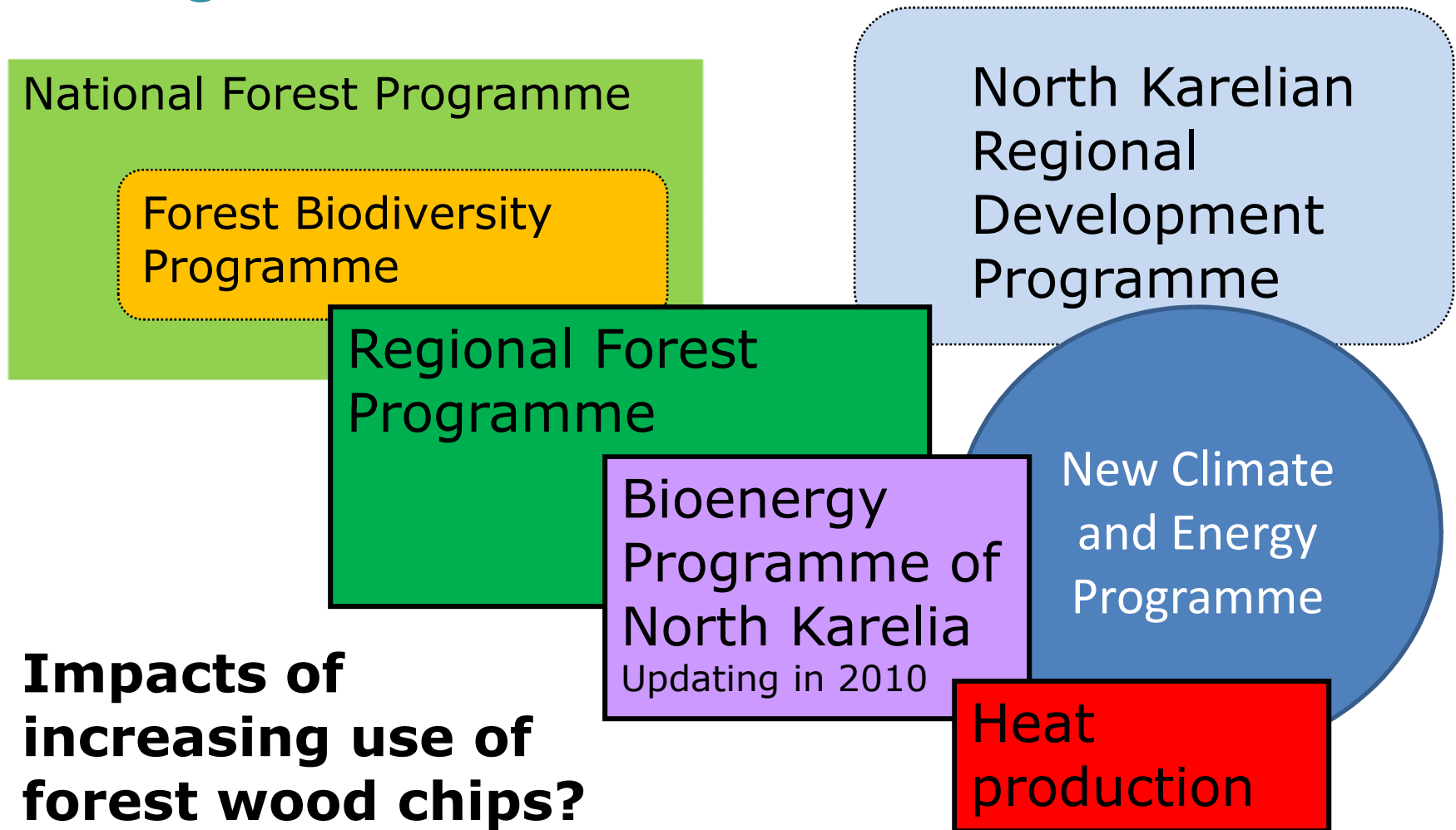
Assessing sustainability of forest based activities in rural areas of the Northern Periphery

Case study in Finland, North Karelia
Marja Kolström and Matias Pekkanen, EFI

Regional development

- Regional policy is one of the major policy areas within the European Union
- Target: more harmonised development of economy and wellbeing within the area
- Approach:
 - integrated regional development plans and strategies
 - partnership of regional and local actors

Background elements of Case North Karelia

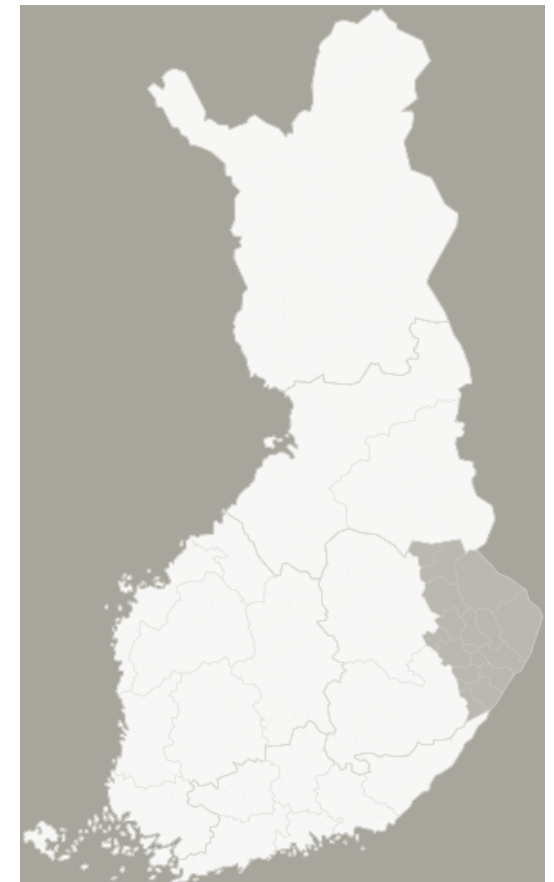


Regional development – challenges in North Karelia

- Comprehensive analysis is needed
- How to compare and combine different kind of values of goods and services (e.g. forest industry vs. nature based tourism)
- More discussion among stakeholders and decision makers
- Complex task for regional actors and decision makers
 - appropriate tools are needed

Forest bioenergy utilization in North Karelia

- Region as a pioneer in forest bioenergy utilization in Finland
- Traditionally strong status of forest industry → Experience in using forest industry by products in energy production
- Structural change in forest industries & national/international climate policies
→ Transition towards increased use of primary forest fuels



Regional Forestry Programme - some objectives -

- The average commercial removals of round wood could rise in North Karelian commercial forests to above 5 mill. m³ by 2010 (average in years 2001-2004: 4,44 mill. m³ /yr)
- Forest biodiversity programme (METSO) continues
- Taking advantage of local forestry expertise in the future

Source: Regional Forest Programme 2006-2010

Regional Bioenergy Programme - some objectives -

- In 2004 the use of forest wood chips in energy generation was about 143 000 m³ ~ 283 000 MWh
- Potential for technically-economically feasible increase at the current plants is about 170 000 MWh
- The production target for forest wood chips in North Karelia for 2010 has been set at 750.000 MWh or about 375.000 m³

Source: North Karelian Bioenergy Programme 2015



The ToSIA approach – Case North Karelia

- ToSIA approach may support regional development
- The aim is to analyse future directions in forest resource use linked with a screening of sustainability issues in the target region
- Screening the regional sustainability issues related to increased use of forest chips
- Are the recent policy decisions directing the forest biomass utilization towards more sustainable solutions?



The ToSIA approach – Case North Karelia

Regional Forest Programme (RFP)

- Define strategy for forestry, utilisation and protection of forests in the Forestry Centre territory
- Current RFP for years 2006-2010; new RFP will be prepared during years 2010-2011
- Assessment of impacts on sustainability included, but different aspects are evaluated separately

The ToSIA approach – Case North Karelia

Regional Forestry Council

- Developing sustainable forestry in the region; making initiatives in this direction
- Participating in the preparation of the regional forest programme and monitoring its implementation
- Consist of key forest sector actors and stakeholders – fine possibility for multi-stakeholder dialogue

The ToSIA approach – Case North Karelia

Use of forest wood chips

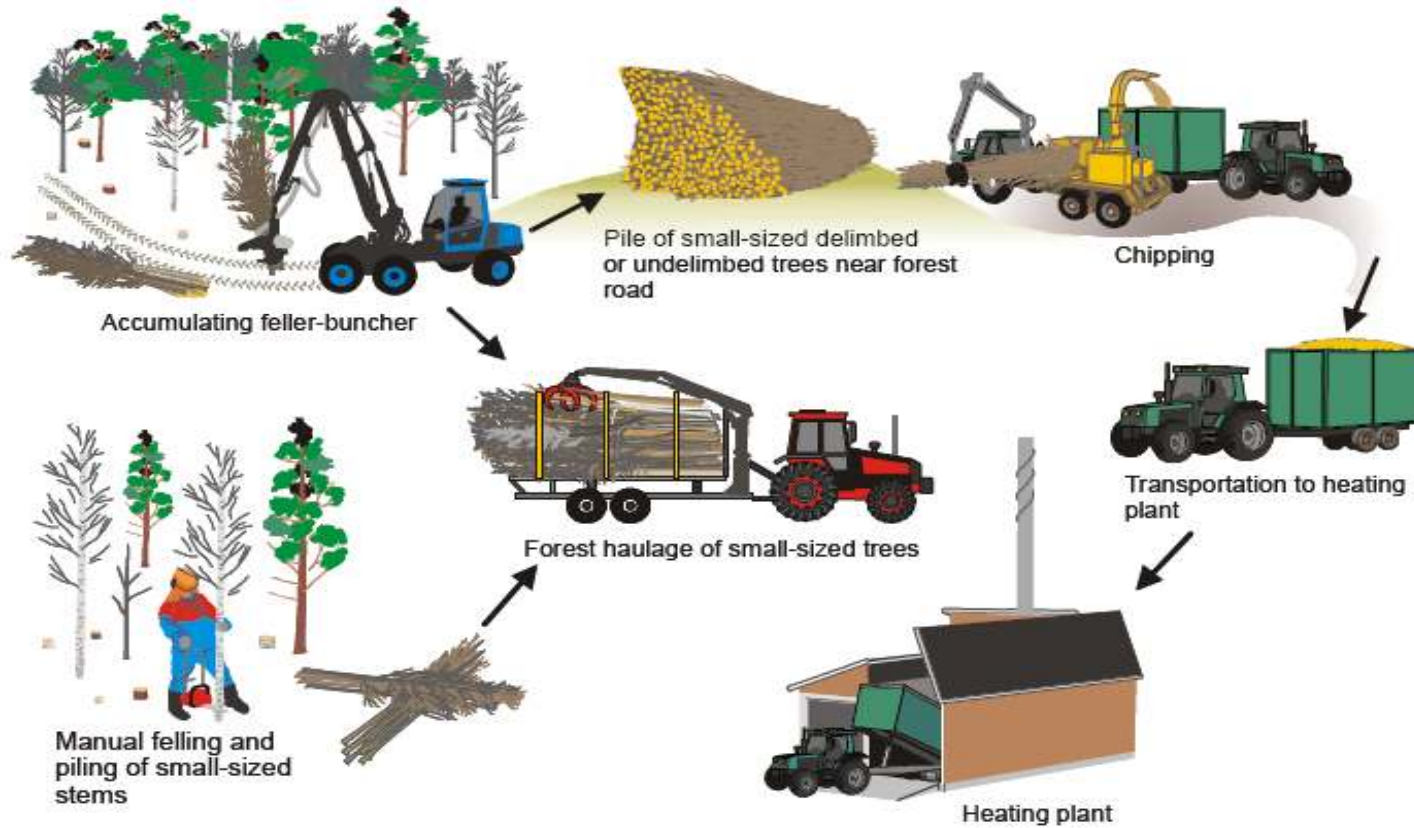
- Sustainability impact assessment of forest-wood-chains in centralized and distributed forest bioenergy utilization
- Two example cases of forest bioenergy utilization
 - Tuupovaara Energy Co-operative
 - Outokumpu Energy Oy

Tuupovaara Energy Co-operative



- Small scale DHP in the village of Tuupovaara
- Two separate boilers 0,5 MW and 0,6 MW
- Fuels: forest chips and sawmilling residues
- Co-operative is responsible of fuel procurement and operating the DHP
- Annual heat production ca. 3300 MWh
- In fuel procurement co-operative makes contracts with local forest owners and chipping entrepreneurs

Forest fuel supply chain – Tuupovaara Energy Co-operative



Kallio & Leinonen, 2005

Outokumpu Energy Inc.



- Medium scale DHP
- 10 MW and 7 MW boilers for solid fuels
- Activity almost fully automated
- Provides heat for over 200 customers in the area
- Main fuels forest chips and sawmilling by-products
- Energy sales in 2008: 53 000 MWh

Forest fuel supply chain: road side chipping – Outokumpu Energy



Kallio & Leinonen, 2005

Expert team of case study in North Karelia

- The team is an advisory group for the case study
- Members of the expert team:
 - Heikki Karppinen (Forestry Centre of North Karelia)
 - Anssi Niskanen (University of Eastern Finland)
 - Asko Puhakka (North Karelia University of Applied Sciences)
 - Jouko Parviainen (WENET)
 - Lauri Sikanen (University of Eastern Finland)
 - Pekka Leskinen (Finnish Environment Institute)
 - Pasi Pitkänen (Regional Council of North Karelia)