Cost-efficiency and Quality in Silvicultural Operations

– Research & Development Programme

2007-2011
General information

- Duration five years (2007 – 2011)
- Includes 8-10 research projects
- 6-8 researchers + 1-2 man-years by assisting staff
- Approx. 50 % of financing comes outside METLA

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Homepage: www.metla.fi/ohjelma/mkl/index-en.htm
Silviculture in Finland – some points

- Planting area (95 000 ha) is approx. 70% of the area of regeneration fellings.
- Typical planting density is 1800 seedlings per hectar.
- Approx. 70% of planted seedlings are Norway spruce.
- Share of mechanized planting is 2-3% of total plantings.
- Pre-commercial thinnings (256000 ha) cover 1.3% of forest land area (20.1 million ha) annually.
- Share of mechanized pre-commercial thinnings is less than 1%.
Premisses for the programme

- Silvicultural operations determine the quality and amount of wood that forest owners and forest industry will have in the future.

- Improvements in cost-efficiency not only activate forest owners to manage their forests but also bring more wood available to industrial buyers.

- In general, cost-efficiency and quality in primary production are important because cost and quality based losses are cumulated in further refining processes.

- Therefore, technology and businesses related to wood production and silvicultural operations are a solid part of the forest cluster.
Challenges to Finnish forestry

- Long-term trend has been increasing in silvicultural costs and decreasing in price of round wood.
- Lack of labour available and willing to forest work will expand in the near future.
- Forest owners are getting older, are more often women, live outside their forest estate, and altogether grow away from forestry.
- There is pressure to reduce or at least re-direct public finance for forestry – services for private forest owners are still strongly subsidized by the state.
- Altogether, we need to improve cost-efficiency (productivity of work) in planning and implementation of silvicultural operations.
Aim of the programme

- Turn the cost-trend of silvicultural operations downwards and improve the quality of work.

Source: Finnish Statistical Yearbook of Forestry, METLA
Main research themes

- Mechanization of silvicultural operations
- Service production related to silvicultural operations
- Management of regeneration chains from soil preparation to first commercial thinning
Mechanization of silvicultural operations

It is possible to get significant cost-savings in tree planting.

There is also promising devices for pre-commercial thinnings.
Management of regeneration chain

- The cheapest method is not usually the most cost-efficient from the standpoint of whole regeneration chain.

- Investment in good soil preparation, for instance, pays back before the first commercial thinning.
Thank you.