Abstract template for the conference "A century of national forest inventories – informing past, present and future decisions"

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Abstract title:		NFI data – a proper source for policy analysis of future forest management?
Take-home message:		NFI data should be used with care when it comes to simulating the impact of forest policies due to idiosyncrasies in forest owner behaviour and forest owner property structure; policies may appear more efficient than reality can hold.
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General topic, see website: (please double click on the check box and activate the relevant one)	☐	Improving future NFIs by learning from the past
	☒	NFIs today and in the future
	☐	Cutting edge and futuristic inventory techniques and technologies
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NFI data – a proper source for policy analysis of future forest management?

Ljusk Ola Eriksson, Vilis Brukas, Isak Lodin

We are familiar of policy assessments based on national forest inventory (NFI) data, not the least in the Nordic countries. You find them on a rather regular bases in the form of assessment of silvicultural prescriptions in the so called SKA reports in Sweden, in sector analyses in Norway with the partial equilibrium model NorFor, and in the harvest scheduling model MELA in Finland. NFI data holds in most respects excellent quality and is indispensable for analyzing the current state of the forest and its development trend. Still, you may ask if it is an appropriate data source for analyzing the impact of future forest management. There are at least two reasons, both of which have been discussed at length, to be cautious.

NFI data is in the form of plots and management tend in most cases to be performed in stands. The plot-stand problem is generally understood as management being too perfect or too optimal compared with what you can realize in practice; stands are not as homogeneous as plots. Different approaches have been devised to get around the problem, like introducing "irrational" management.

NFI data lacks forest holdings. This is or could be a serious problem where the ownership is fragmented. In some cases you could imagine that land parcels are so small that effective management becomes almost impossible. Some rule set are applicable only on the individual property. For instance, most certification schemes operate on this level. And the forest holding has an owner (or several) that may have different objectives, motivations and abilities.

This study compares the outcomes of simulating the development with NFI plot data and with forest properties as the basis, respectively. In both cases, NFI data forms the description of the basic forest unit, however in the latter case aggregated into stands. Forest owner behavior is simulated on the forest properties, whereas the NFI approach instead puts restrictions on what kind of management should be performed. Growth and yield projections are done with the Heureka system and the forest management problems are formulated with AIMMS modelling tool. The exercise covers the 650,000 ha of forest of the Kronoberg county in Sweden.

The general conclusion from the study is that the impact of policies are overstated with a "naïve" application of NFI plot data. For instance, regulating forestry through the Forestry Act gives less response with the property based approach and certification has less impact on biodiversity.

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