

Forest

Knowledge

Know-how

METLA

Well-being

Broad scale applicability of the method (Climforisk)

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www.metla.fi/life/climforisk



LIFE09 ENV/FI/000571

Climate change induced drought effects on forest growth and
vulnerability (Climforisk, www.metla.fi/life/climforisk)



Content

- The history of the National Forest Inventories (case Finland)
- Current information needs
- Data needs for adaptation and mitigation

The history of the Finnish NFI

1st NFI 1921 – 1924: line survey

2nd NFI 1936 – 1938

3rd NFI 1951 – 1953

4th NFI 1961 – 1963: continuous organization

5th NFI 1964 – 1970: clustered plots, systematic sampling

6th NFI 1970 – 1976: use of aerial photos to generalize plot data

7th NFI 1977 – 1984:

8th NFI 1986 – 1994: forest damages, satellite images/MS-NFI

9th NFI 1996 – 2003: biodiversity, dead wood, permanent plots

10th NFI 2004 – 2008: carbon monitoring, continuous inventory

11th NFI 2009 – 2013: carbon monitoring, land-use change detection

12th NFI ????????

Information needs

- Future climate in Finland is warmer and precipitation distribution alters ?
 - soils are getting drier → more damages
 - where will we have those damages ?
- Carbon in ecosystems gets a monetary value?
 - where, how much, with what precision we have that carbon (analog to REDD+ initiative)

Current information needs I

- Carbon stock change at national level -> regional level -> management unit level ?
(this means trees, soils, dead wood and litter)
- Carbon stock change due to land use change
- Soil types (e.g. organic vs. mineral) for GHG estimation (+other stratifications)

Current information needs II

- Repeated soil sampling for C and (at least for model testing)
- Soil water holding capacity (soil depth and soil texture)
- Forest damage observations
- Real time spatial weather data

Data needs for adaptation and mitigation

1. Soil map, complemented with additional soil data
 2. Forest inventory
 3. Weather data
 4. Simple models
 5. EO data
- data to facilitate means to adapt and mitigate climate change at local level by local land managers

Conclusions

- NFIs have been often optimized for timber estimation
 - is this the way that NFI data is used in future?
 - what would be sampling to facilitate both REDD+ and mitigation and adaptation needs ?
- Surprisingly, different ground based data exists and is more freely available → these sources of information should be combined and used to map areas that most vulnerable under climate change

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KNOWLEDGE

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Thank you

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