

Challenges in the KP reporting - Finland

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Reporting requirements for KP

- Land-use change since 1990, areas
- Emissions from those lands, occurring 2008 ->
- All five pools / verify that a pool is not a source

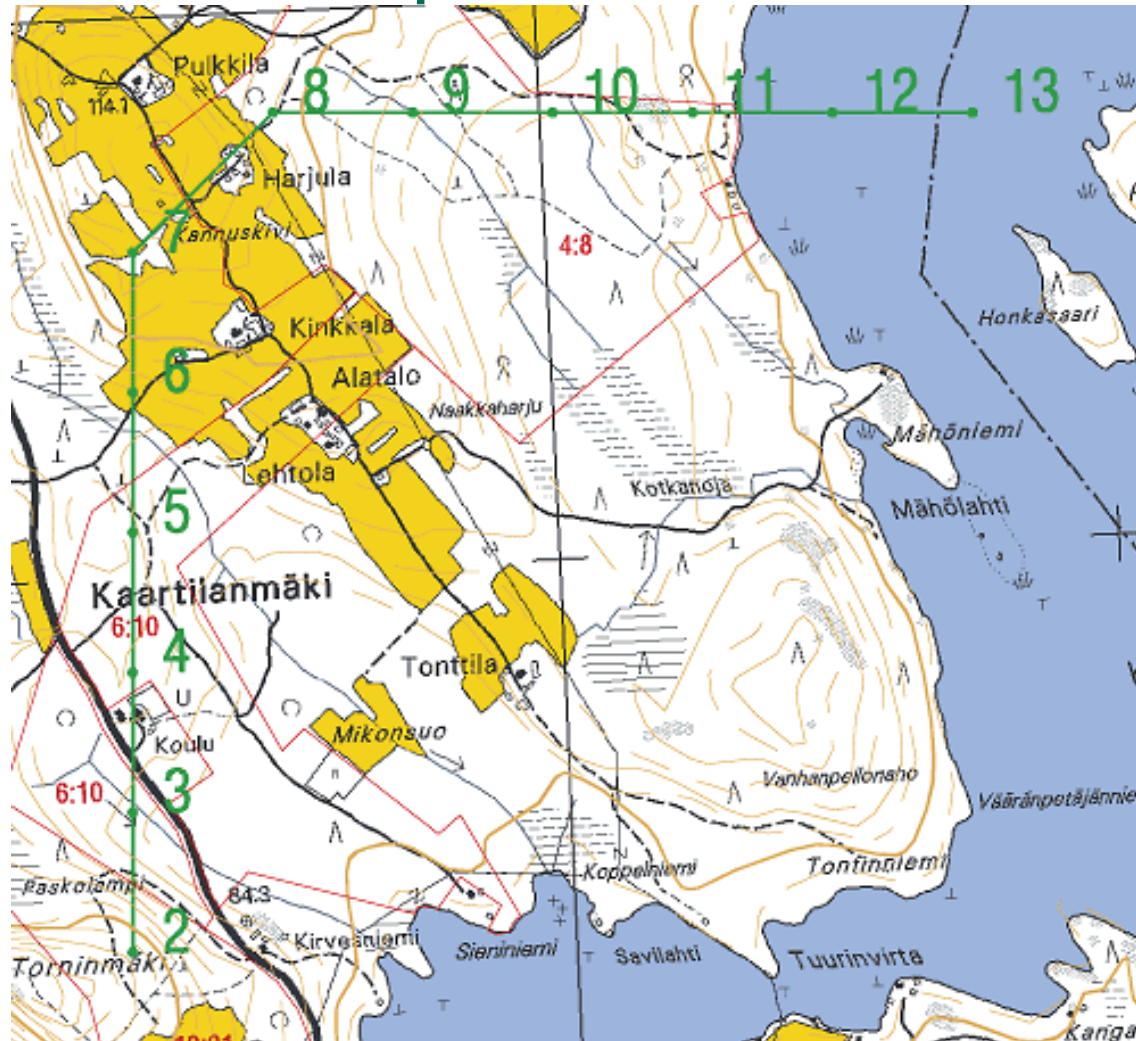
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Finnish case

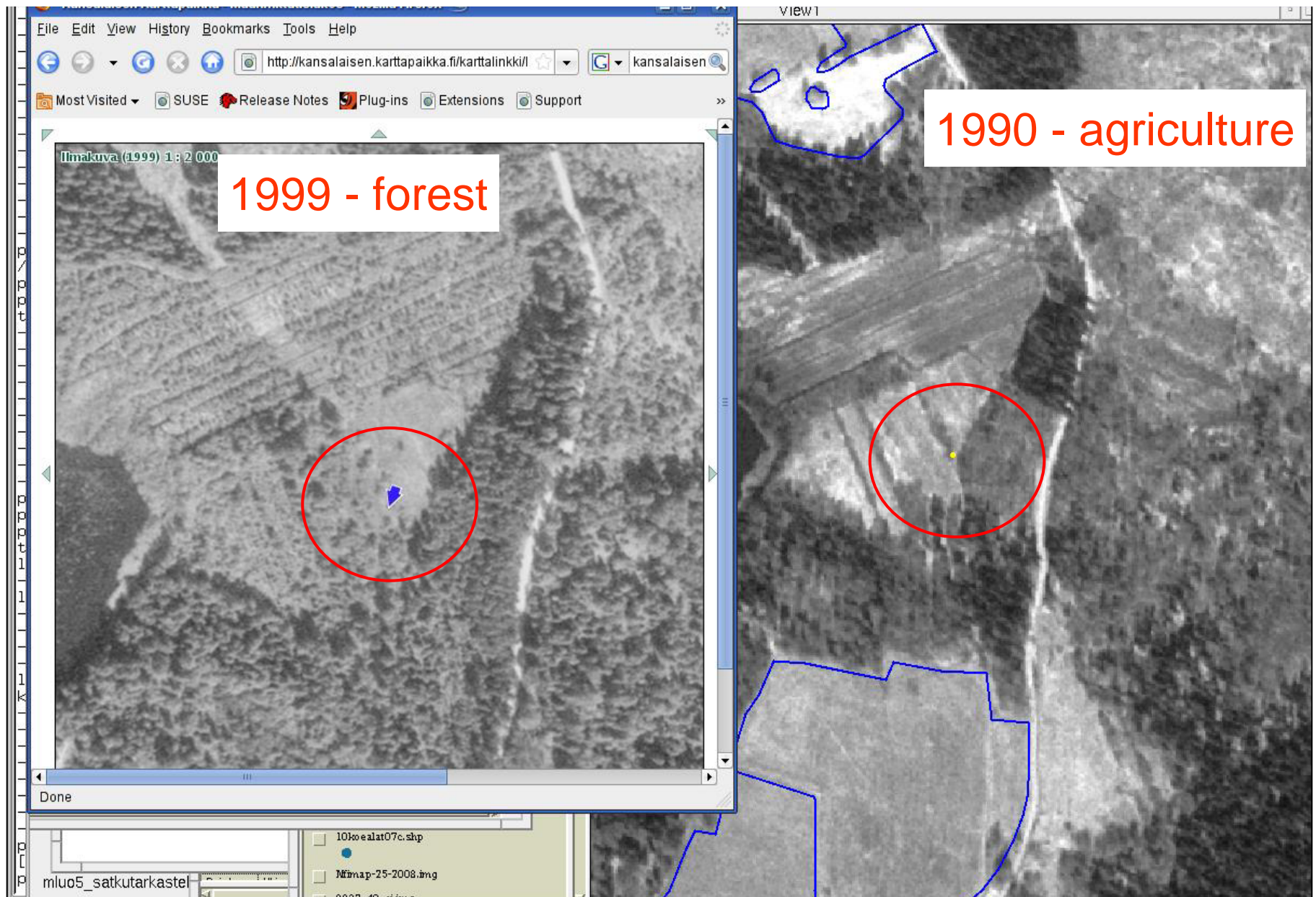
- Primary data source: National Forest Inventory
 - Mostly temporary sample plots (~60000 plots)
 - Takes 5 y to complete a full round
 - Field team measures:
 - Trees (dimensions, increment, ...)
 - Location
 - Soil characteristics, fertility,
 - **Land-use**
 - **Current**
 - **Previous**
 - **Time of change if any**

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A NFI cluster of plots



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Results - afforestation & reforestation

Table 11.4-2 Comparison of reported afforestation and reforestation areas to the statistics.

Year	AR of cropland and grassland	AR total	Afforestation of arable land in Metla statistics
1990	8.8	11.6	8.5
1991	8.0	9.7	10.5
1992	12.4	15.2	17.1
1993	10.3	13.4	17.7
1994	6.8	10.4	8.8
1995	6.4	9.7	4.1
1996	9.7	13.1	9.0
1997	7.2	9.6	9.3
1998	8.2	12.4	7.1
1999	5.9	7.5	6.2
2000	6.3	11.2	5.8
2001	1.9	4.3	6.0
2002	2.9	3.7	2.7
2003	3.3	3.7	2.0
2004	2.1	2.7	2.4
2005	2.1	2.7	2.3
2006	2.1	2.7	2.3
2007	2.1	2.7	3.1
2008	2.1	2.7	3.5
All	108.6	149.2	128.4

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Results - deforestation

Table 11.4-3 Comparison of reported deforestation areas to the statistics.

Year	Deforestation	Deforestation in Metla statistics	Difference
1990	6.2	4.1	2.1
1991	4.6	3.7	0.9
1992	6.0	4.6	1.4
1993	12.2	8.0	4.2
1994	4.6	13.7	-9.1
1995	6.7	5.7	1.0
1996	6.7	5.1	1.6
1997	12.4	5.0	7.4
1998	15.7	6.1	9.6
1999	9.3	4.8	4.5
2000	12.7	8.3	4.4
2001	11.8	11.2	0.6
2002	17.1	11.6	5.5
2003	23.3	11.1	12.2
2004	15.4	14.7	0.7
2005	15.4	8.8	6.6
2006	15.4	9.6	5.8
2007	15.4	9.7	5.7
2008	15.4	10.7	4.7
All	226.6	156.5	70.1

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Challenges (I)

- Sampling based approach for land-use and land-use change (NFI)
 - + unbiased estimates
 - + possibility to estimate uncertainties
 - + uniform data source (hosted by Metla)
 - computationally demanding (need of resources for analysis)
 - annual sample (~12000) limited
 - need for validation with aerial photos, e.g. land-use change early 1990s

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Challenges (II)

- Estimating land-use for 2009, based on the NFI plots measured 2009
 - The probability of land-use change that has occurred 2009 is low (note ~12000 plots annually)
-> solution, averaging over 2004-2008
 - The estimates for areas and biomass increment of those ARD lands highly uncertain -> estimates of areas, biomass, soil carbon and dead organic matter are also highly uncertain

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An aerial photograph of a forest landscape. The image is overlaid with green and red colors, likely representing different types of vegetation or land use. The green areas are more prominent in the upper left and lower right, while the red areas are more prominent in the upper right and lower left. The overall texture is grainy, typical of an aerial photograph.

Thank you !

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