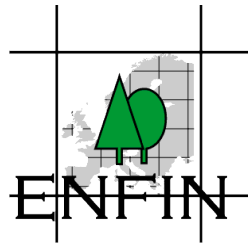




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The Life⁺- FutMon Actions C1-NFI (DK), C1-NFI (SE) Achievements



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The L2b team



a Life+ co-financed project for the "Further Development and Implementation of an EU-level Forest Monitoring System".



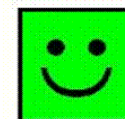
The project coordination centre is situated at the Institute for World Forestry, Hamburg, Germany.

- Need and focus on the importance of harmonisation of existing data sets to get comparable information on forests in Europe
- However, very important to maintain well-known national time series for the national-level decision making

- Builds upon the experience reached under ENFIN activities on harmonisation of variables
- An opportunity to select and further develop reference definitions for indicators of relevance at European level
- The development of 'bridging procedures' could facilitate reporting according to agreed-upon reference definitions

Reference definitions - 2010

49



29



16



5



- Support to the L2b Action
 - Yearly expert meetings/workshops
 - Representatives of the countries participating in the L2b project
 - Co-ordination of the harmonisation of the core variable assessments from the national programmes towards agreed-upon reference definitions
 - Selection of variables, development of field manual, forum for discussions, support of analyses through elaboration of methods and compilation of summary results

- Overview of forest variables with reference definition and type of bridge needed

Bridging procedures	Number
Neutral	290
Reductive	16
Expansive	31
Mixed	31
Total	368

- Overview of NFI variables where harmonisation is needed to reach reference definitions
- Parallel observations in the field or by analysis of databases and other data sources according to national definitions and reference definitions

- Tests of reference methods
- Development, test and refinement of bridging functions to be applied in NFIs leading to harmonised results on core variables

1. Firenze, March 2009
2. Hillerød, November 2009
3. Copenhagen, April 2010
3. Copenhagen, June 2010
4. Ljubiana, October 2010



- Prepare the field studies
- Clarify and coordinate the selection of the variables of each country and prepare the 2010 field work
- Compile selected variables, planning of the field studies
- For countries already starting in 2009 – a first evaluation of the activity

- Forest area
- Area of other wooded land (OWL)
- Growing stock including small trees
- Dead wood
- Above and below ground biomass





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Bridging procedures



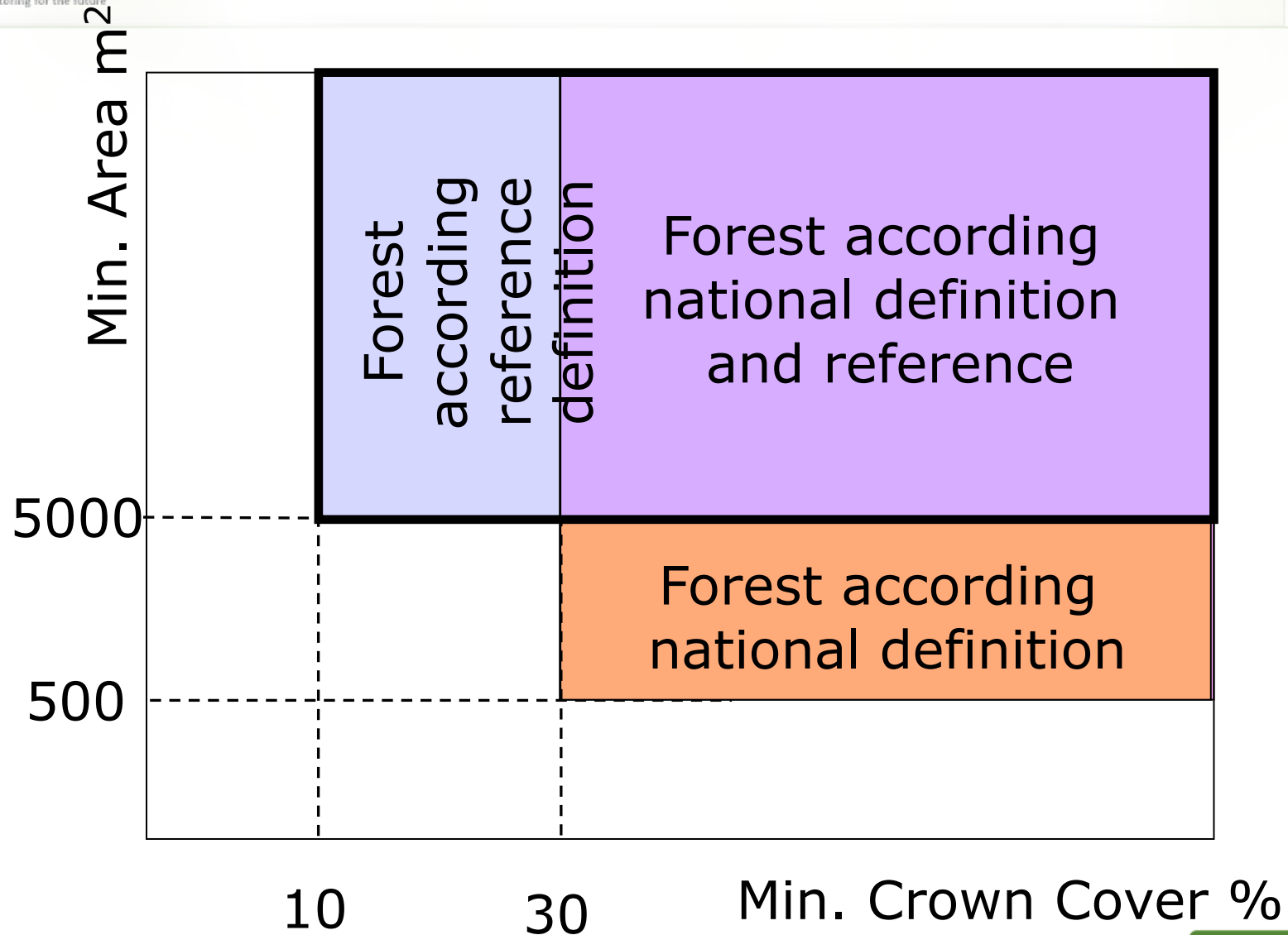
Variables /Bridging	Expansive	Neutral	Reductive	Mixed
Deadwood	5	-	2	1
Forest area	2	-	2	1
Growing stock	2	1	1	1
OWL	2	1	2	1
Small trees	4	-	-	1
Grand Total	15	2	7	5

- As a result of the NFI field studies, bridging function are applied on NFI data
- Methodologies and guidelines are presented in a joint report
- Some examples of the process....



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Forest Area (Gschwanner & Schadauer, 2010)





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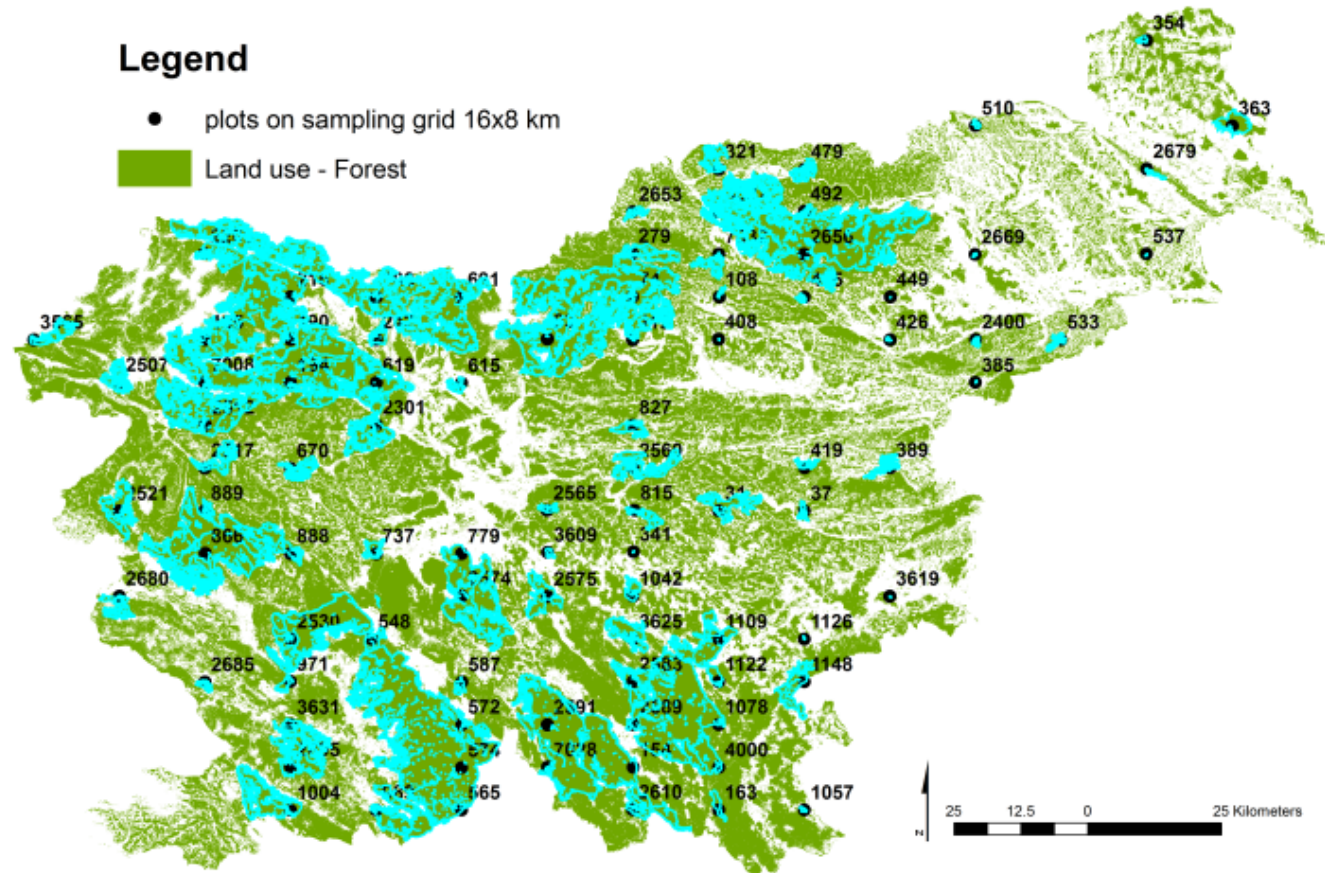
Forest Area: Kovac et al., 2011



Legend

● plots on sampling grid 16x8 km

■ Land use - Forest



- Small fixed area sample plot, $r = 1\text{m}$
- Number of sample plots: 2,460
- Plots with small trees: 474
- *dbh*-classes; $< 2.5\text{ cm}$; $2.5 - 4.9\text{ cm}$
- Number of counted trees: 1,843

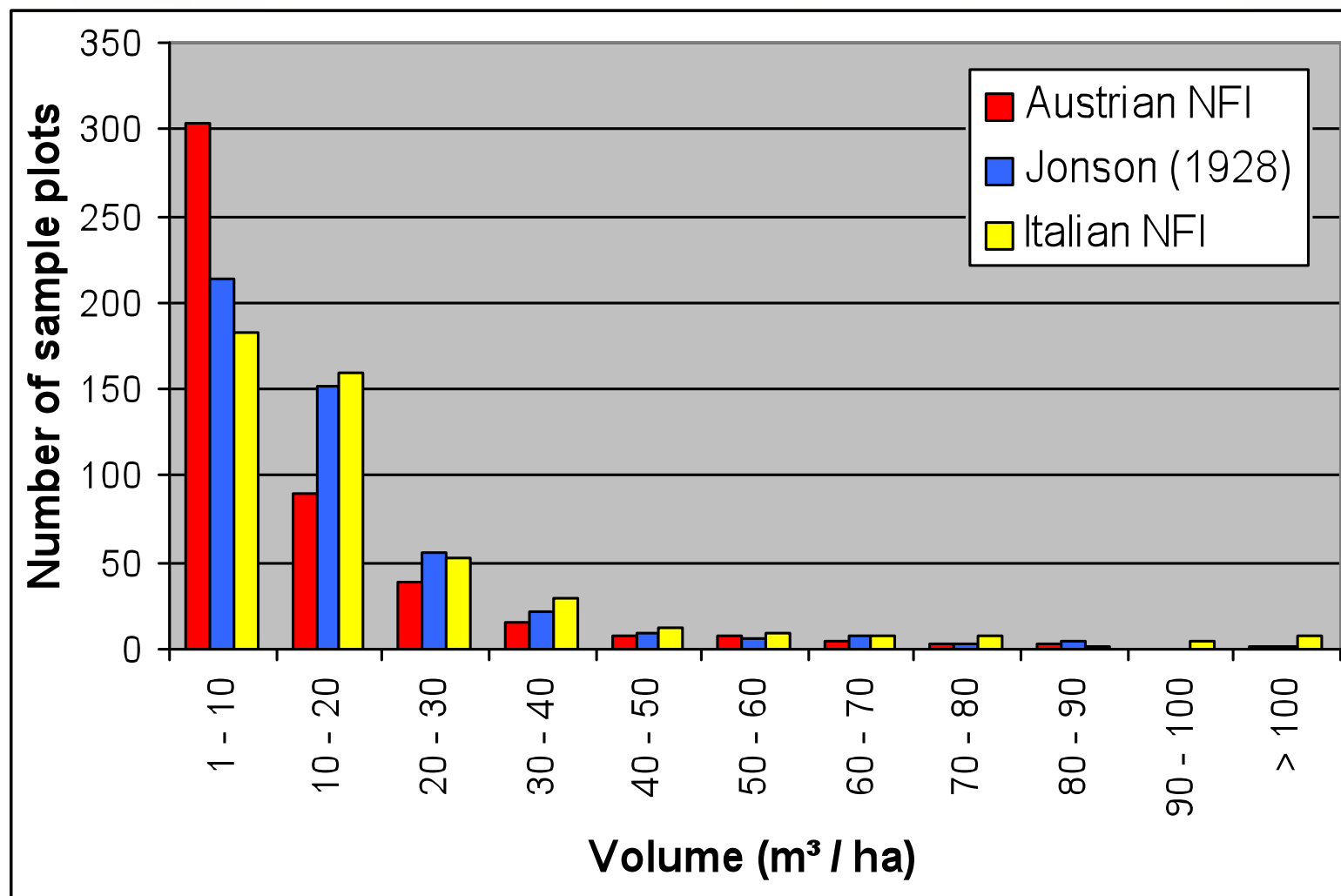
Volume equation	Volume (m ³ / ha)	
	Mean	Stddev.
Italian NFI	3.64	13.89
Jonson (1928)	2.72	11.14
Austrian NFI	2.30	9.90

Standing volume ($dbh \geq 5$ cm): 325 m³/ha



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Represented Volume per ha of plots with small trees



ACTION L2b

Italian NFI bridging needs for harmonized results: **GROWING STOCK BELOW 5 cm**

Approach one: what we did

small trees volume has been determined in laboratory by DBH class



Samplings were sectioned and bundled...



...immersed in water



leaves (or needles) were taken away from the samples before immersion

- Promising results, relevant and important process, a first step in the right direction for harmonisation...
- 1 bridging procedure per variable per country
- Resource demanding: need for detailed analysis of each variable, especially for expansive bridging
- In this study straightforward procedures – neutral, reductive, and expansive
- In the future based at plot level using regressions

- Definitions – clarifications needed
- Methodologies
 - Common approach
 - Common manuals
 - Training of field crew
- Sharing of experiences
 - New data → time and money.
 - Share experiences on impacts of bridging procedures on the results of each variable → optimal outcome of the work.
 - Provision of knowledge, different sampling techniques, additional equations → enhanced options for optimised bridge building.

Thanks for your attention

Acknowledgments

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