FOREST INVENTORY WORKSHOP

Application of NFI data for UNFCCC and KP reporting in Slovenia, main findings and challenges

Zagreb, Hotel Panorama, June 1-2, 2016

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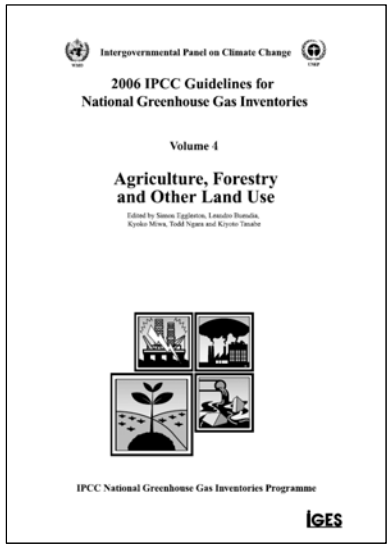
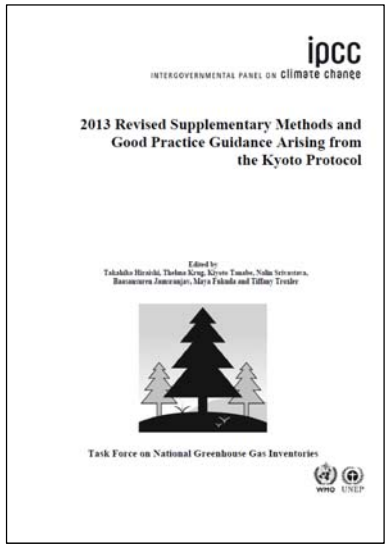
Reporting requirements for LULUCF

- At international level; UNFCCC/KP
- At EU level; Decision 529/2013/EU → NIR, CRF tables
- IPCC Guidelines
- TACCC Reporting principles:
  - ❖ transparency
  - ❖ accuracy
  - ❖ completness
  - ❖ comparability
  - ❖ consistency



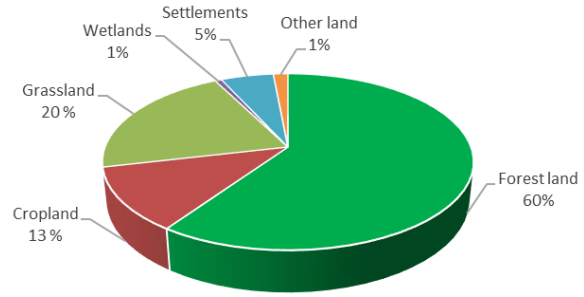


Reporting requirements for LULUCF

- pools (AGB, BGB, deadwood, litter, soil, HWP)
- IPCC categories
  - UNFCCC (FL, CL, GL, WL, SL, OL)
  - KP (ARD, FM, CM, …)

$$E = AD \times EF$$

Land use structure and GHG emission trends



Key categories in the LULUCF

		CO_2		
		Method	EF	Key category
A. Forest land	1. Forest land remaining forest land	CS,D,T1,T2,T3	CS, D	L,T
	2. Land converted to forest land	CS,D,T1,T2,T3	CS, D	L, T
B. Cropland	1. Cropland remaining cropland	D,T1,T2	CS, D	T
	2. Land converted to cropland	D,T1,T2	CS, D	T
C. Grassland	2. Land converted to grassland	D,T1,T2	CS, D	L, T
D. Wetlands	2. Land converted to wetlands	D,T1	CS, D	-
E. Settlements	2. Land converted to settlements	D,T2	CS,D	L, T
F. Other land	2. Land converted to other land	D,T2	CS,D	-
G. Harvested wood products		D, T1	D	L, T
		CH_4		
		Method	EF	Key category
A. Forest land	1. Forest land remaining forest land	D, T1	D	-
		N_2O		
		Method	EF	Key category
A. Forest land	1. Forest land remaining forest land	D, T1	D	-
B. Cropland	2. Land converted to cropland	D,T1	D	-

The use of forest data in UNFCCC/KP reporting

UNFCCC

- forest area (Agricultural Land Use Map – ALUM, MAFF)
- land use changes (ALUM 2002, 2012)
- AGB, BGB, deadwood (FECS 2000, 2007, 2012)
- soil, litter (8 x 8 km grid survey from 2006/2007)

KP

- area for FM, ARD (Annual reports on forest – SFS)

Findings - issues/gaps

- LUC matrix (main problem)
- inconsistent reporting for UNFCCC and KP
- absence of national soil inventory
- current forest sampling intensity does not allow for detailed reporting

Findings: LUC matrix issue raised by the ERT

recommendations from the previous review report for the LULUCF sector. However, the accuracy of some basic data needs to be improved. For example, Slovenia used approach 3 of the IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF) to derive data on land area using raster data for the years 2002 and 2012 and to develop the land-use change matrices. However, when comparing the data on deforestation from the matrices with data on land areas for deforestation collected from observations by the Slovenian Forest Service (SFS), the ERT identified that the land areas data in the matrices were overestimated. This finding was acknowledged by Slovenia, which had reported in the NIR that the land areas for deforestation in the matrices were up to seven times higher than that observed.

60. This finding raised serious concerns regarding the overall approach used by Slovenia to derive land areas and to develop the land-use change matrices, which are important prerequisites for the estimation of emissions and removals in the LULUCF sector. The ERT believes that improving the land-use change matrices is an area where Slovenia should put a lot of effort in future. The ERT was concerned about how this data quality issue would affect the reporting of emissions and removals related to activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol (KP-LULUCF activities). However, the ERT noted that for the reporting under the Kyoto Protocol, Slovenia used a different approach to detect deforestation and forest management based on data from observations collected by SFS (see para. 87 below). In line with the recommendation in the previous report, the ERT reiterates the recommendation that Slovenia improve the land representation data used to report LULUCF emissions and removals under the Convention by reconciling all data on areas contained in its databases, land-use maps, as well as data collected from observations.

Findings: LUC matrix (Approach 3)

		to								
	2002-2012	FL	CL_a	CL_w	GL_a	GL_w	WL	SL	OL	total [ha]
from	FL		714	1550	17852	9424	578	5841	2152	**38111**
	CL_a	1286		2899	46268	2587	229	4238	1	**57508**
	CL_w	1317	1915		11431	1791	23	2080	0	**18558**
	GL_a	19296	21891	8825		22426	750	7930	101	**81219**
	GL_w	18857	574	1217	8900		607	1451	241	**31847**
	WL	545	143	12	2167	834		719	192	**4613**
	SL	2470	1122	5160	14295	1399	217		46	**24708**
	OL	2792	6	9	5966	1495	118	107		**10493**
	total [ha]	**46563**	**26365**	**19673**	**106878**	**39956**	**2523**	**22368**	**2732**	**267057**

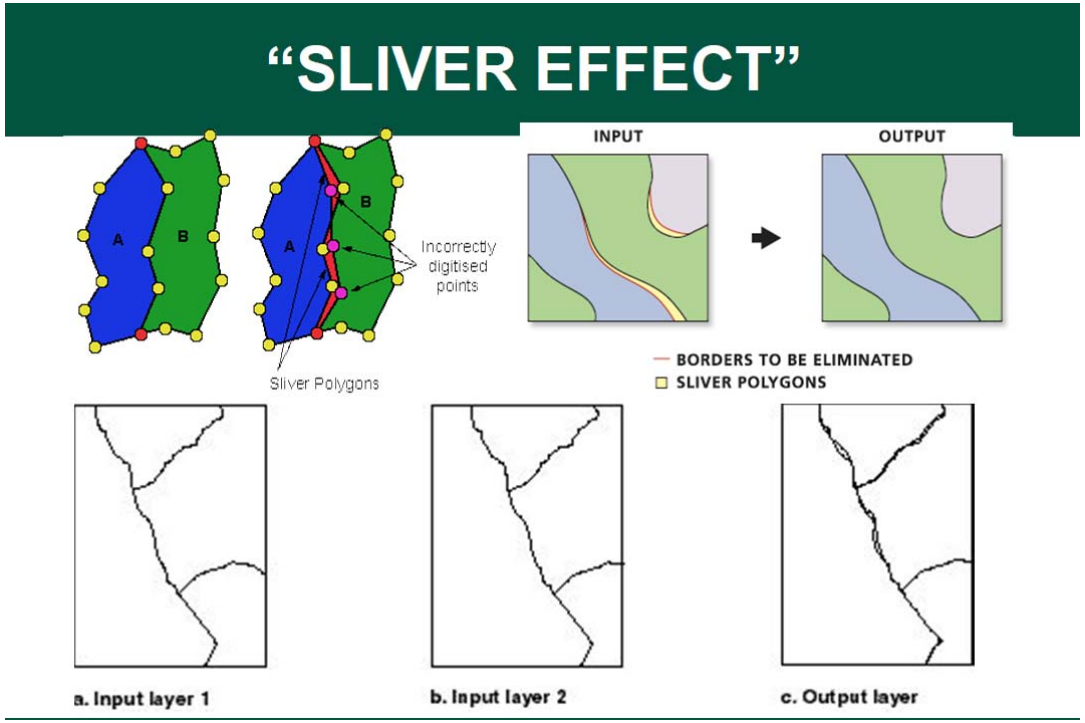
→ 3,2 %

→ 13,2 %

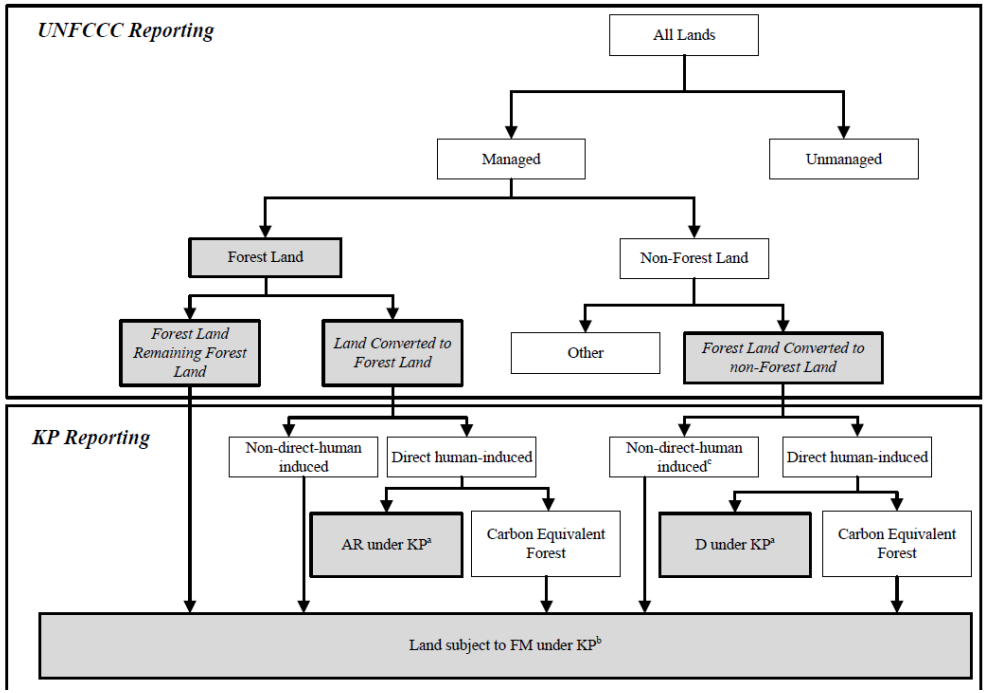
ALUM = 3811 ha per year

SFS ≅ 500 ha per year

LUC matrix issue: reasons



Findings: inconsistent reporting for UNFCCC and KP



(Source: IPCC, 2014)

FF ≠ FM
Difference in area estimation was almost 100.000 ha!

Concerns about the issue raised by the ERT in AR reports several times

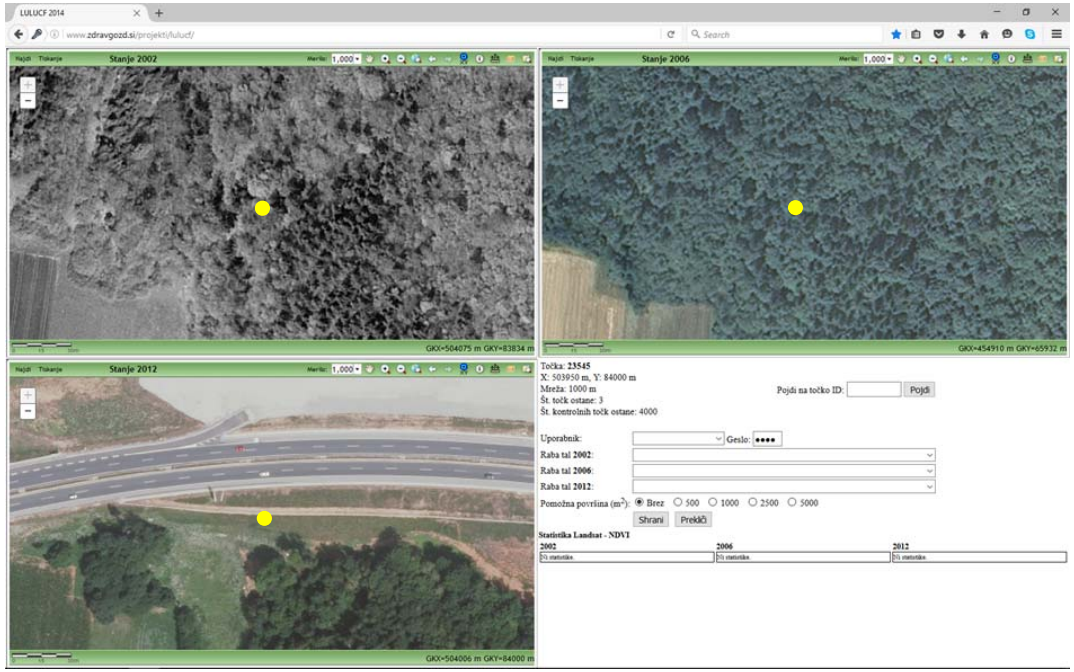
Findings: absence of national soil inventory

- able to report stock, but not the changes in time
- defending the use of „not a source" approach for litter and soil
- verification needed (e.g. comparison with older soil data at the same locations, use of Yasso07 model, scientific articles …)

Findings: current forest sampling intensity

- poses a standard error of about 4 %
- does not allow for reporting at lower spatial levels (e.g. NUTS3, stratification)
- does not allow for use of forest modelling
- development of country specific BEFs or allometric functions is not possible

Results from the Targeted Research Project



Results from the Targeted Research Project (Approach 2)

2006-2012	FL	CL_a	CL_w	GL_a	GL_w	WL	SL	OL	$Total_{2006}$
FL	1201650	100	300	1900	1100	400	1100	200	1206750
CL_a		205450	100	7500			1800		214850
CL_w		700	51050	4100	200		300		56350
GL_a		2400	1000	292050	8400	100	2300		306250
GL_w	4700	400	400	6700	75050		800		88050
WL						13850			13850
SL			100	200	100		108750		109150
OL	100							31950	32050
$Total_{2012}$	1206450	209050	52950	312450	84850	14350	115050	32150	2027300

850 ha per year

Challenges

- to harmonize forest data where possible (e.g. min forest width)
- to increase the quality of MRV
- to improve forest data (e.g. on areas of Land converted to Forest land, for update of the FMRL)
- to fill gaps in the future (e.g. litter, soil)
- to built capacities and to enhance cooperation between different LULUCF related sectors and within the forest sector
- to convince policy makers that sample-based NFI is needed


Where my best ideas usually come from
IDEAS
SITTING IN MY OFFICE
DOING THE DISHES
WALKING TO LUNCH
TALKING TO SOMEONE
TAKING A SHOWER
DOING TWO OR MORE OF THESE THINGS AT THE SAME TIME
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Thank you!