# Overview of post-2012 LULUCF rules and update on IPCC work on supplementary guidance on KP-LULUCF

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# Post-2012 LULUCF rules

The LULUCF accounting rules for 2008-2012 received a number of criticisms, including:

- high complexity
- do not provide real incentives in the forest sector (the FM cap >> current sink)
- do not guarantee environmental integrity (e.g. most credits obtained without efforts, the voluntary choice of many activity may lead to an unbalanced accounting)

Overall, the current LULUCF rules reflect a compromise arising from the special circumstances at Kyoto (e.g. targets agreed before the rules) and the complexity of LULUCF (additionality, factoring out, permanence, uncertainties, etc.)

It was agreed on the need to change the rules to incentivize a more meaningful contribution of LULUCF to climate change mitigation.

# Changes in LULUCF rules (dec. 2/CMP.7):

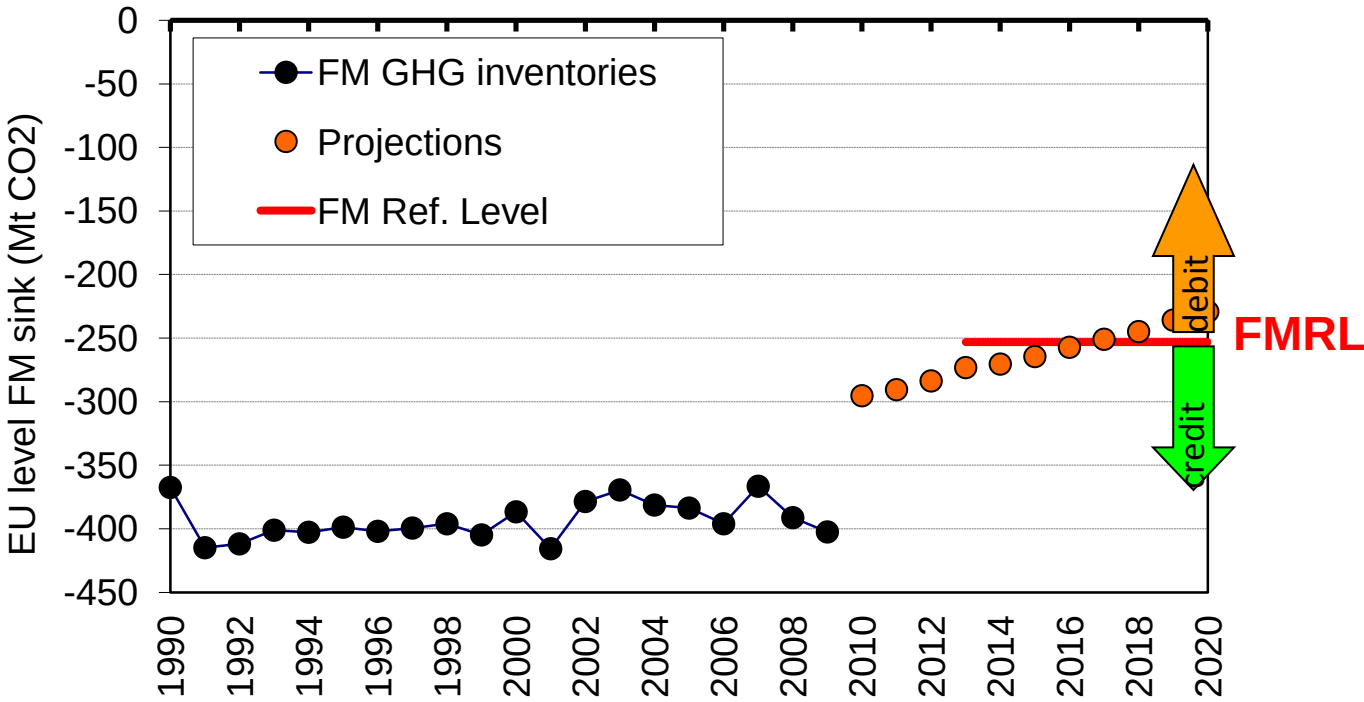
| Activity / rule | CP1 (2008-2012) | CP2 (2013-2020) |
|---|---|---|
| Afforestation/reforestation (AR) | M | M |
| Deforestation (D) | M | M |
| Forest management (FM) | V with fixed cap | M (with FM Reference Level) |
| Cropland management (CM), Grazing land management (GM), Revegetation (RV) | V | V (M if elected in CP1) |
| Wetland drainage and rewetting (WR) | - | V |
| Harvest wood products (HWP) | - | M for AR and projected FM-RL |
| Conversion of natural forest to planted forests | implicitly reported if FM elected | M (explicit under FM) |
| Natural disturbances | implicitly included in accounted activities | Emissions can be excluded from FM and AR |
| Carbon equivalent forests | - | V |

**M: mandatory, V: voluntary**

# Forest management (FM)

**Mandatory accounting**, with credits or debits generated as difference between future emissions/removals and a FM "reference level" (FMRL).

For EU countries, the FMRLs are based on "business-as-usual" (BAU) projections (expected net emissions considering policies up to July 2009).



• All FMRLs have been subject to a **technical assessment** by expert reviewers, aimed at ensuring transparency in assumptions used and consistency with GHG inventories.

• A **cap equal to 3.5% of base year emissions** applies to FM credits; contrary to the previous cap, this new cap is likely to keep the full incentive for most countries.

• Countries must demonstrate **methodological consistency** between the FMRL and FM reporting during the 2nd CP, and **technical corrections** may be needed for this purpose.

# Harvested wood products (HWP)

Changes in the harvested wood products (HWP) pools must be accounted using one of the following methods:

- instantaneous oxidation
- the IPCC first-order decay function, with default half-lives of two years for paper, 25 years for wood panels and 35 years for sawn wood
- country-specific data to replace the default half-lives
- other methodologies in the most recently adopted IPCC guidelines.

Instantaneous oxidation must be the method used for deforestation, while it cannot be applied to projected FMRLs.

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# Natural disturbances

- Countries have the possibility to exclude the emissions from natural disturbances on FM and afforestation/reforestation (AR) lands above a country-specific “background level”.
- A default method to estimate this background level is provided, but countries may also apply alternative approaches as long as transparency, consistency and comparability are ensured.
- All approaches must avoid the expectation of net credits during the commitment period.

## **“CEFC provision”** (C Equivalent Forest Conversion)

(or “flexible land use provision”)

Allows some plantation forests to be cleared as long as a forest of equivalent area and carbon stock is established elsewhere, with all lands accounted for as Forest Management.

## **Wetland drainage and rewetting**

New voluntary activity to be accounted as net-net compared to base year.

# Information on the status of IPCC's "2013 Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol"

Need to update and extent the existing Chapter 4 of the IPCC Good Practice Guidance on LULUCF (KP LULUCF), to take account of the 2006 IPCC Guidelines, the new LULUCF rules (decision 2/CMP.7), other relevant UNFCCC decisions, new scientific literature and methods

http://www.ipcc-nggip.iges.or.jp/home/2013KPSupplementaryGuidance_inv.html

About 70 authors were selected by the IPCC, **grouped in 4 "Clusters"**

- • Cluster 1 – General Guidance
- • Cluster 2 – HWP and Disturbance
- • Cluster 3 – Forest
- • Cluster 4 – Elected Activities

## Schedule:

| | | |
|---|---|---|
| **LA1** | **24 Sep 2012** | **30 Sep 2012** |
| *Authors prepare 0 Order Draft* | 01 Oct 2012 | 11 Nov 2012 |
| **LA2** | **12 Nov 2012** | **18 Nov 2012** |
| *Authors prepare 1st Order Draft* | 19 Nov 2012 | 06 Jan 2013 |
| **Expert Review** | **07 Jan 2013** | **03 Feb 2013** |
| *Authors prepare preliminary 2nd Order Draft* | 04 Feb 2013 | 03 Mar 2013 |
| **LA3** | 04 Mar 2013 | 10 Mar 2013 |
| *Authors prepare 2nd Order Draft* | 11 Mar 2013 | 21 Apr 2013 |
| **Government/Expert Review** | **22 Apr 2013** | **02 Jun 2013** |
| *Authors prepare preliminary Final Draft* | 03 Jun 2013 | 14 Jul 2013 |
| **LA4** | **15 Jul 2013** | **21 Jul 2013** |
| *Authors prepare Final Draft* | 22 Jul 2013 | 01 Sep 2013 |
| **Government Consideration** | **02 Sep 2013** | **29 Sep 2013** |
| *Authors prepare Draft for Approval* | 30 Sep 2013 | 13 Oct 2013 |
| *IPCC Panel Adoption/Acceptance* | 14 Oct 2013 | 20 Oct 2013 |

**--> 2000 comments**

# Experience in use of IPCC GPG-LULUCF

The considerations presented here are a (quick!) brain-storming based on:

- Experience in assisting EU countries in using GPG-LULUCF for KP-LULUCF forest activities
- Experience during the review of KP-LULUCF activities and discussions held during Lead Reviewers meetings

Issues include (not-exhaustive!) examples of:

1) Common challenges (i.e. difficulties, different interpretations) experienced by countries in implementing IPCC guidance: can IPCC guidance be improved in clarity?
2) Potential conflicts between IPCC and UNFCCC decisions: should IPCC guidance be "updated" on very specific issues?

# 1. Challenges in implementing IPCC on forest activities

## a) Identification and tracking of lands

An overview of Annex I NIRs indicates that the amount and quality of information related to land representation varies considerably (but situation is improving).
The vast majority of countries use Reporting Method 1 for identifying the geographical locations and approach 2/3 for land representations.

For KP-LULUCF activities, lands must be identified and tracked over time or geo-referenced OR statistical techniques, i.e. approach 3 should be used or approach 2 + supplementary information.

Possible improvements of IPCC guidance:

- Highlight the importance of completeness and consistency of land information, e.g. the sum of total reported areas match the official statistics (within the confidence limits) and is constant over time.
- Examples could be provided on pragmatic ways to fulfil the mandatory (and challenging) requirement of land identification and tracking !

## Which is the rationale for lands to be IDENTIFIED and TRACKED?

Primarily, the need to associate the correct EF to the relevant AD, to avoid double counting and confusing lands among them, and because “once Kyoto land, always Kyoto land”. e.g.:

- if a Party reports 100 ha of deforestation, but without providing any additional information, the risk is that the Party then associates an incorrect EF to that area*, and also that it will not be able to report emissions from this land in the future.
- if a country has unmanaged forests and a large forest fire occurs, the Party should be able to identify the land affected by that fire which belongs to the managed land and which belongs to the unmanaged land.

The above (and others) arguments could be included more explicitly

* the loss of C from soil following a deforestation event clearly depends also on the subsequent land use: the failure to provide information on subsequent land use (which can be done even on a statistical basis) may mean risk of underestimating the reported emissions.

## b) Demonstration that not accounted C pools are not sources

From the discussion among EU countries and among lead reviewers, an overall message emerged: the "not a source" provision was introduced in KP reporting to *facilitate* the Parties. Based on the existing IPCC guidance (GPG chapter 4.2.3.1), the demonstration of "not a source" should use one or more elements which, although not enough to quantify accurately a sink estimate, strongly suggest that the pool is not a source (i.e. they show the most likely sign).

Some question could be further clarified (e.g. the "not a source" can be applied also to merged pools? )

Examples of defensible reasoning/assumptions could be provided.

New scientific evidence available?

Criteria to suggest countries to prioritize efforts ? (e.g. research on the impact of high harvest rates on soil C)

Decision tree?

# Pools to be reported under KP-LULUCF: example of decision tree (EU countries)

**1.Are available data/estimates (from sampling and/or models) "robust" enough to be used in reporting/accounting?**

- Is the sampling/modeling representative of country?
- Are the methods used well documented and transparent?
- Are relationships used meaningful and statistically significant?
- Have the results been somehow verified?
- Uncertainty analysis available?

→ **YES** (to all questions) → **Data may be used to KP reporting**

↓ **NO** (to any of the questions)

Provide additional information:

2. **Reasoning based on sound knowledge of likely system responses** (examples)

3. **Survey of relevant peer-reviewed literature** (possible criteria)

↓

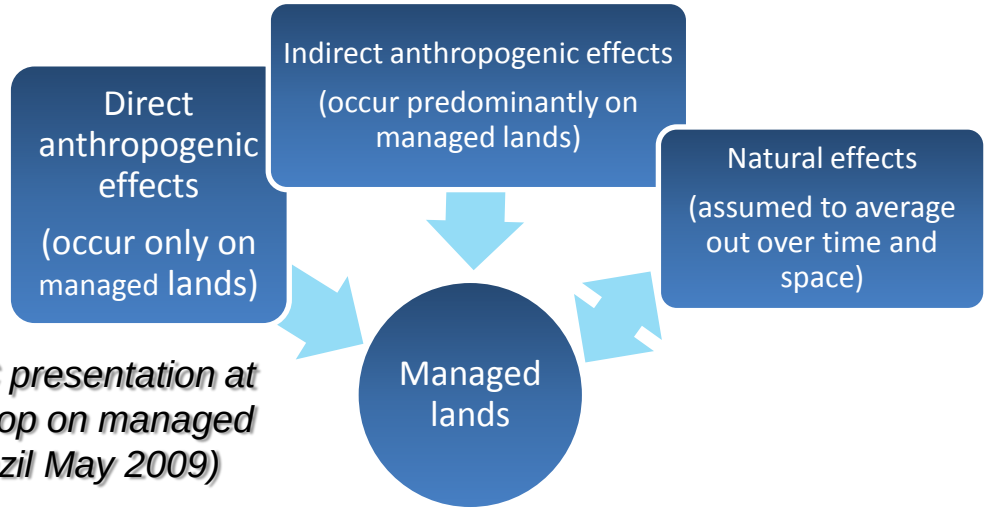
Does **available information** under 1 to 3 above clearly supports the "not a source" notion? (examples)

→ YES → Use "**NR**" (not reported) in table KP-NIR-1 and provide adequate supporting documentation in the NIR text.
In tables 5(KP-I) "NE" may be used, but an explanatory comment in the cell and in the documentation box is necessary

↓ NO

The available information provides contradictory messages, or it is considered not robust enough: the Party should use "**NE**" (not estimated) in table KP-NIR-1

## Basis for managed land as a proxy for anthropogenic effects




*(from IPCC presentation at the workshop on managed land, Brazil May 2009)*

It is clear that "**managed land**" includes both **direct** and **indirect** anthropogenic effects

IPCC suggests to use the "**managed land**" concept as *proxy* for **REPORTING** anthropogenic net emissions (**direct** + **indirect**).
What the 16/CMP.1 and 15/CMP.1 require is to *restrict* the **ACCOUNTING** only to direct emission/removals.

## c) Demonstration that AR lands are “directly human-induced”

Different interpretations among countries / reviewers (“broad” interpretation more common)

Some country distinguishes areas of forest expansion not directly human-induced (reported under Convention as L-FL, but not under KP). Other countries report all forest expansion as AR including one or more among these arguments:

a) any abandonment of a “managed land” is a direct human activity;

b) the explicit protection of existing forests by law means protecting the source seeds for natural regeneration (from which forest expansion started);

c) the forest expansion in a given area has been explicitly planned (and thus forest has been protected from the very beginning).

EU-25: 9 countries reporting AR<L-FL, 16 countries AR=L-FL

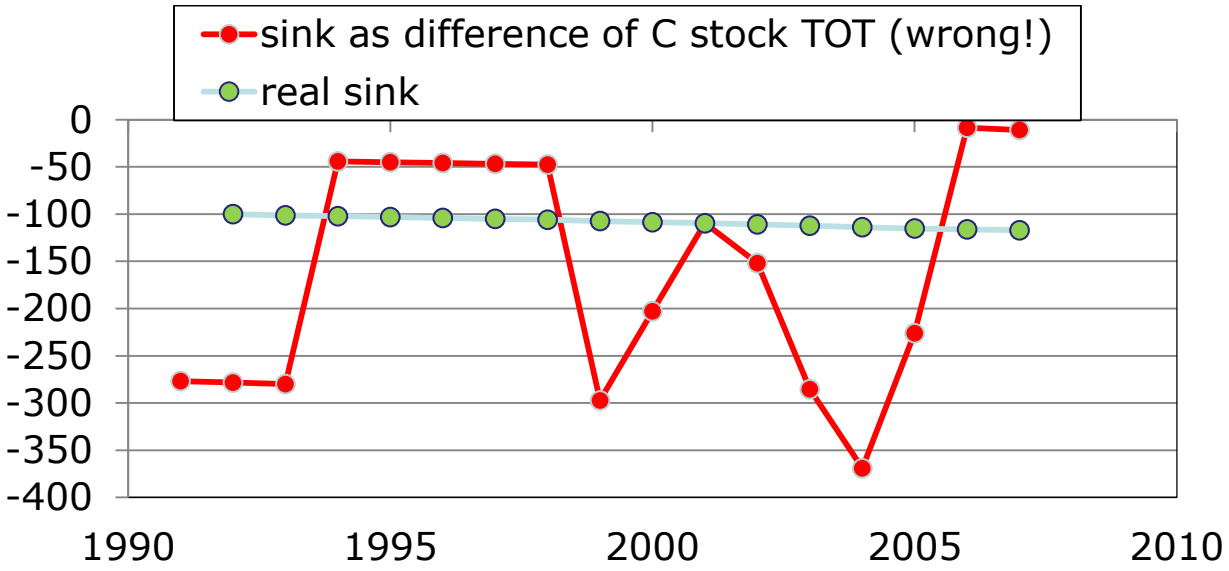
Further guidance and good practice examples would be useful

## d) Wrong implementation of the C stock change method

IPCC GPG 4.2.3.2: To ensure that actual C stock changes are reported, and not artefacts resulting from changes in area over time, the calculations of C stock changes should be implemented in the following sequence: For each land, the C stock change should first be calculated for the year of interest, and these stock changes should then be summed for all areas. The inverse sequence, i.e., first summing up the C stocks across all areas at times t1 and t2 and then calculating the difference in C stocks, can result in errors if the area at times t1 and t2 is not the same, and thus is not recommended.

Several countries follow the wrong sequence, with potentially huge impact on the GHG inventory

More emphasis to be given to this issue



## calculation of forest sink if C stock change method is used

**Imagine that a new area of mature forest (with same characteristics) enter the statistics**

| | Year X-1 | Year X | Year Y |
|---|---|---|---|
| **area (ha)** | 100 | 100 | 100**+ 1=101** |
| **C stock/ha (t C/ha)** | 99 | 100 | 101 |
| **C sink/ha (t C/ha/yr)** *with stock difference method* | | 100-99=1 | 101-100=1 |
| **C stock tot** | 9900 | 10000 | 10100 **+101=10201** |
| **C sink tot (t C/yr):** *With stock difference method* | | 10000-9900= 100 **WRONG<-** | **10201-10000 = 201** |

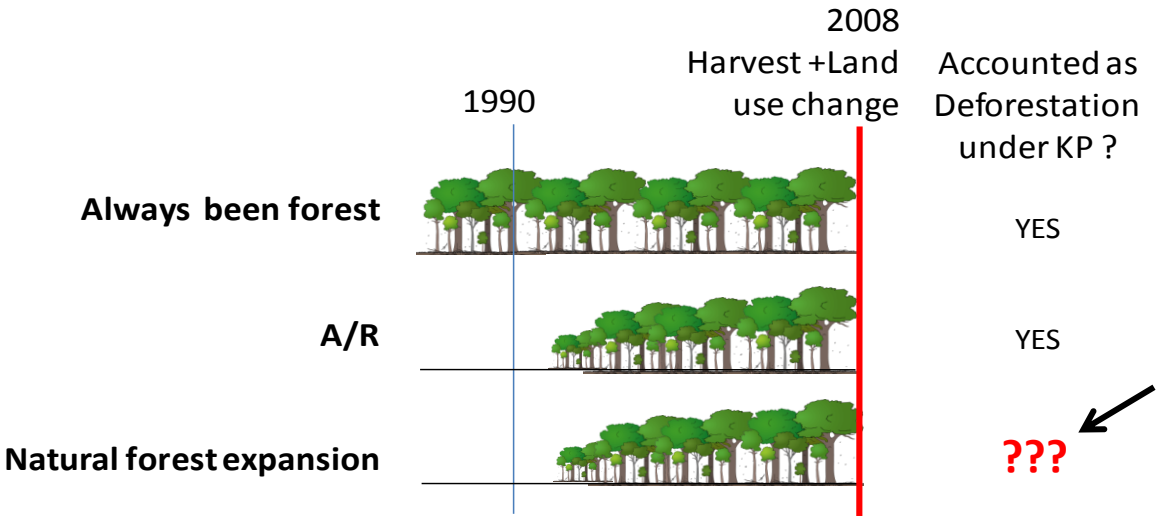
The correct sink with the new area is 101 (area*sink/ha = 101*1=101)

If, under FM, you add (or remove) forest area to that present before, make sure the calculation of the sink is done correctly (see also examples in IPCC-GPG LULUCF p. 4.31)

# 2) Potential conflicts between IPCC and UNFCCC decisions

## a) Deforestation of "natural forest expansion" after 1990

Forest expansion in managed lands after 1990 can be classified as either AR (if the requirement of "direct-human induced" is met) or not (in this case, this "not-direct-human-induced forest expansion" is reported under the Convention as L-FL, but is not reported under KP). How to consider an area of "not-direct-human-induced forest expansion" which is subsequently deforested?




Text and current decision trees from IPCC GPG for LULUCF indicate "NO"

To be fixed!

## Example of possible technical correction

FM projections "calibrated" on FL-FL data for 2000-2008. If recalculations of emissions and removals FL-FL for the period 2000-2008 will be carried out in any future submission of annual GHG inventories, the FM projections could be re-calibrated as follows