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Reviewing KP–LULUCF activities in the 2nd CP

This presentation focuses on
reviewing the new reporting and accounting elements set in
Decisions 2/CMP.7, 2/CMP.8, 6/CMP.9 and 4/CMP.11

Focus of the presentation

- The KP reporting is a new challenge for countries and reviewers.
- Consequently, the review of the KP information should be approached with:
  - ✓ common understanding of the reasons at the basis of any identified deviation in reporting,
  - ✓ a pragmatic assessment of the consequences of any of such deviations, and
  - ✓ a focus on the impact of any of such deviations on accounted quantities

Focus of the presentation

On accounting years where adjustments may be applied to address problems that lead to:

- overestimation of emissions and underestimation of removals in the base year/FMRL
- underestimation of emissions and overestimation of removals in any CP years;

In non-accounting years each problem discussed does not impact Parties' accounting, although:

- The ERT has to include in the ARR a recommendation to address it
- if remained unresolved until last accounting year, it may become a question on the ability of the Party in implementing the reporting and accounting requirements

Outline

- ✓ Focus of the presentation
- ✓ Keeping continuity with 1st CP (3 elements)
- ✓ New reporting requirements of 2nd CP
  - Mandatory FM
  - FMRL
  - TC
  - $FMRL_{corr}$ adjustment
  - ND
  - Interannual variability
  - HWP
  - Insignificant categories/pools
  - WDR
  - Unlimited LULUCF debits
  - CEF
  - Miscellanea

Continuity with the 1st CP

I. Forest definition: same definition used in the 1st CP applies. However, because not subject to "forest use", Parties may have excluded significant treed areas from FM/AR/D. Therefore:

- The ERT must check whether the Party has
  - ✓ reported the extent of the area which meets the thresholds for forest, but which is not reported as forest,
  - ✓ described the consequences of this exclusion on reported emissions and removals
- What if the information is not reported?
  - ✓ the ERT must recommend the Party to report it
  - ✓ Any adjustment is unlikely, *although it is a question on how the Party is implementing the KP reporting requirements*

Continuity with the 1st CP

II. Once a land in, always in

- land subject in the base year only to CM or GM may be subsequently excluded:
  - ✓ It is **good practice** to report information on the impact of such exclusion on accounted quantities
- What if a country excludes a land that was accounted for during the 1st CP, or any previous year of 2nd CP?
  - ✓ If a net C stock gain was accounted for in that land in the 1st CP, then permanence is a problem (this could be subject of an adjustment)
  - ✓ In any case the impact on accounted quantities has to be assessed; and estimates recalculated/adjusted if not conservative
  - ✓ *Further, it is a question on how the Party is implementing the KP reporting requirements*

Continuity with the 1st CP

III. A pool that is not a net source may be reported as NE

- What if a Party reports as NE a C pool that was accounted for in the 1st CP, or any previous year of 2nd CP?

  - ✓ If a net C stock gain was accounted for in that pool in the 1st CP, then <u>permanence is a problem</u> (Could be subject of an adjustment)

  - ✓ In any case the impact on accounted quantities has to be assessed; and estimates adjusted, if not conservative

  - ✓ *Further, it is a question on how the Party is implementing the KP reporting requirements*

Continuity with the 1st CP

III. (con't) A pool that is not a net source may be reported as NE

- What if a Party reports as NE a C pool that was accounted for in the base year/FMRL?
  - ✓ If the C pool is a net source in the base year/FMRL, its exclusion during 2nd CP results in accounting for undue credits equivalent to the magnitude of the base year/FMRL net source, consequently the estimate is subject to an adjustment
  - ✓ If the C pool is a net sink in the base year/FMRL, its exclusion during 2nd CP is conservative
  - ✓ *Further, it is a question on how the Party is implementing the KP reporting requirements*

New reporting requirements of 2nd CP – *Forest management*

1. FM emissions and removals during the 2nd CP must be reported and accounted for against a reference level (FMRL); although credits are subject to a cap (3.5% of emissions, excluding LULUCF, in the base year)

2. Conversion of natural forest to planted forests must be identified within FM activities

   - This means that the land representation should identify and track also changes in management practices/system in forest land. The ERT should check whether the monitoring system is capable to do so

New reporting requirements of 2nd CP –

Forest Management Reference Level (FMRL)

3. FMRL is the benchmark against with results achieved by Policies and Measures (PaMs) in the forest sector can be quantified.

4. It therefore represents the expected emissions and removals that would occur in absence of the PaMs i.e. BAU emissions/removals

5. It may be either projected, or correspond to an historical year, or zero (0).

FMRL has been already reviewed

New reporting requirements of 2nd CP –

Forest Management Reference Level

6. In case of projected FMRL, the difference between the FMRL and FM actual estimates, i.e. the accounted quantity (AQ= FM - FMRL), needs to be explained as a deviation in PaMs. Therefore:

- The ERT must check whether the Party has reported information on:
  - ✓ Main factors responsible for a higher (or lower) sink during the CP, as compared to the FMRL and whether AQ is consistent with them
  - ✓ To show that AQ can be explained as deviations in PaMs in the CP, rather than in differences in factors/parameters not related to PaMs, including growth curves, used to construct the FMRL vs those used for FM actual estimates
  - ✓ To show that model used to calculate FM actual estimates can reproduce the historical data of FM or FL-FL used for constructing FMRL (or $FMRL_{corr}$)

New reporting requirements of 2nd CP – *Technical Correction (TC)*

7. To ensure methodological consistency between the FMRL and FM actual estimates Parties may apply a TC, if needed.

- To assess if methodological consistency is achieve the ERT must check:
  - **method/model to construct** the FMRL (or **$FMRL_{corr}$**) **vs historical data** used
    - ✓ To be checked by comparing method/model's outputs for the historical period vs historical data on FM or FL-FL used to construct FMRL (or $FMRL_{corr}$)
  - **method/model** used **to construct** the **FMRL vs new method/model** used **to prepare** the **GHG inventory** in the 2nd CP
    - ✓ To be checked comparing historical data of FM or FL-FL used for constructing the FMRL (or $FMRL_{corr}$) and the recalculated time series of FM or FL-FL data

New reporting requirements of 2nd CP – *Technical Correction*

- (con't) To assess if methodological consistency is achieve the ERT must check:
  - **historical data** used to construct the FMRL
    - ✓ If any of the data for any of the years of the time period used in the construction of the FMRL has been recalculated, a TC is needed (e.g. forest area, harvest, age-class structure, growth rates, species composition, management practices)
  - **pools/gases** included
  - treatment of **HWP**
  - treatment of **Natural Disturbances (ND)**, if selected
    - ✓ Note that the $FMRL_{corr}$ must include a level of emissions (and removals) from ND equivalent to BL

New reporting requirements of 2nd CP – *Technical Correction*

8. Note that:

- A deviation in policies/practices during the 2nd CP compared to those included in the BAU scenario must not trigger a TC
- The application of the Carbon equivalent forest (CEF) provision does not trigger a TC
  - The checklist provided in table 2.7.1 of the 2013 IPCC KP Supplement guides in assessing whether there is a methodological inconsistency that triggers the application of a TC (in addition to those problems already noted in the FMRL Technical Assessment Report (TAR))

New reporting requirements of 2nd CP – *Technical Correction*

9. The TC is a net value of emissions/removals that is added, at the time of accounting only, to the original FMRL to ensure that the accounted emissions/removals do not include the impact of methodological inconsistencies:

$$\textbf{Technical Correction (TC)} = \textbf{FMRL}_{\textbf{corr}} - \textbf{FMRL}$$

New reporting requirements of 2nd CP – *Technical Correction*

10. Information on TC and methodological consistency shall be reported annually in the NIR:

- The rationale for applying the TC
- The method/model used for calculating $FMRL_{corr}$
- The demonstration that the method/model used avoids the expectation of net credits/debits caused by inconsistencies between $FMRL_{corr}$ and FM actual estimates during the CP
  - ✓ This means that the TC should not result in an inconsistency with the method/model used to prepare GHG estimates in the 2nd CP
- If TCs have been previously applied, how these have been taken into account in the most recent TC

New reporting requirements of 2nd CP – *Technical Correction*

- What if information on TC is not reported?
  - ✓ To report information on the need of a TC and on TC is a **good practice** so any lack of information on TC must always be reported as a recommendation in the ARR.

New reporting requirements of 2nd CP – *Technical Correction*

11. Additional information on TC and methodological consistency shall be reported for TC of projected FMRL:

- showing that the method/model used to calculate $FMRL_{corr}$ is capable to reproduce the historical data of FM or FL-FL used for the construction of the FMRL, as reported in the FMRL submission, or a justification, if it is not the case

- What if historical data and methods/model outputs do not match each other?

  - ✓ See next slide ☺

New reporting requirements of 2nd CP – *Technical Correction*

- What if a methodological consistency is identified and a new run of the FMRL model, or the recalculation of the FMRL with a new method/model applied for FM actual estimates, cannot be applied?
- or if applied it does not address the inconsistency among historical data and FMRL?
  - The use of IPCC methods for ensuring time-series consistency *(e.g. overlap with historical data)* is to be recommended

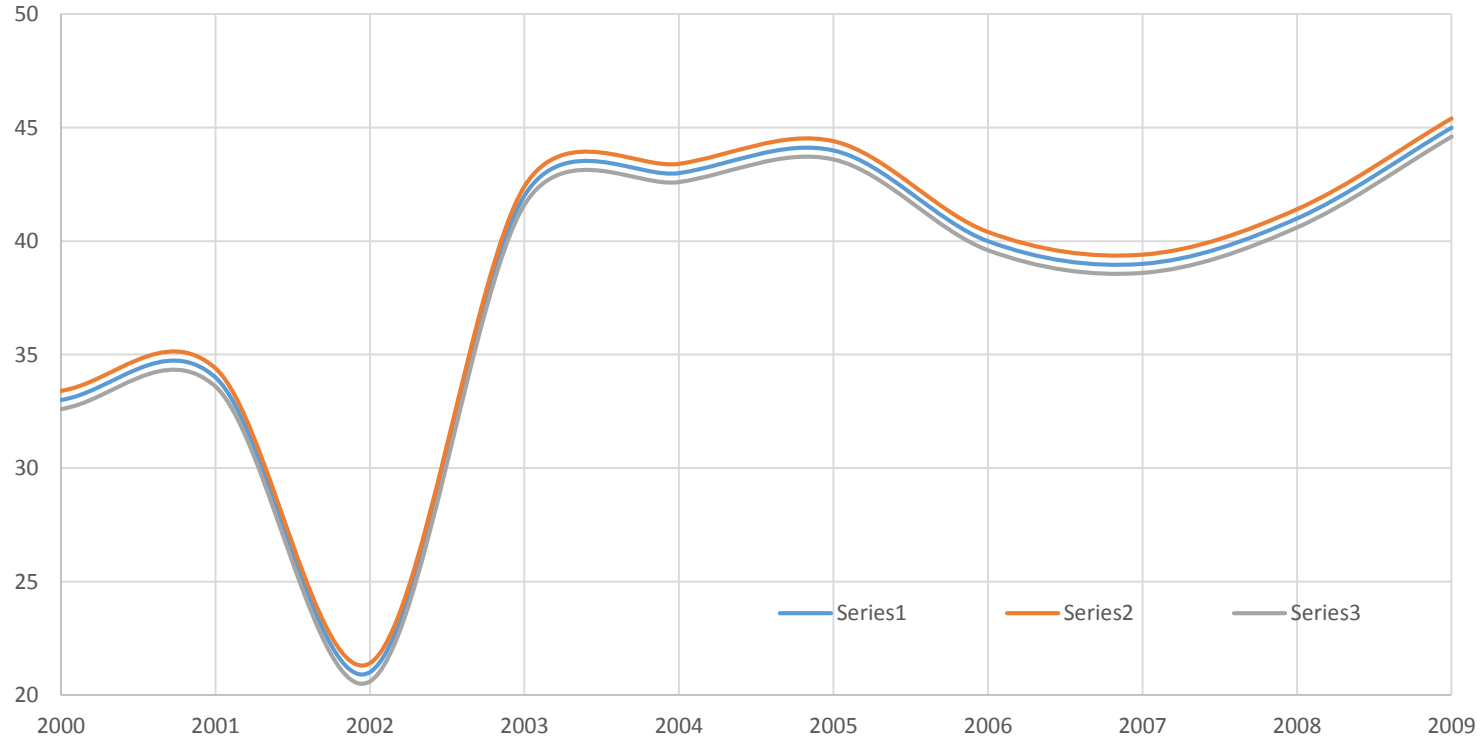
New reporting requirements of 2nd CP – *Technical Correction*

12. In summary, consistency among FMRL/$FMRL_{corr}$ and FM actual estimates is checked by ERT through comparison of historical data:

- As reported in the FMRL submission
- As recalculated by the method/model applied for calculating $FMRL_{corr}$
- As recalculated by the method/model applied for preparing FM actual estimates

New reporting requirements of 2nd CP – *Technical Correction*

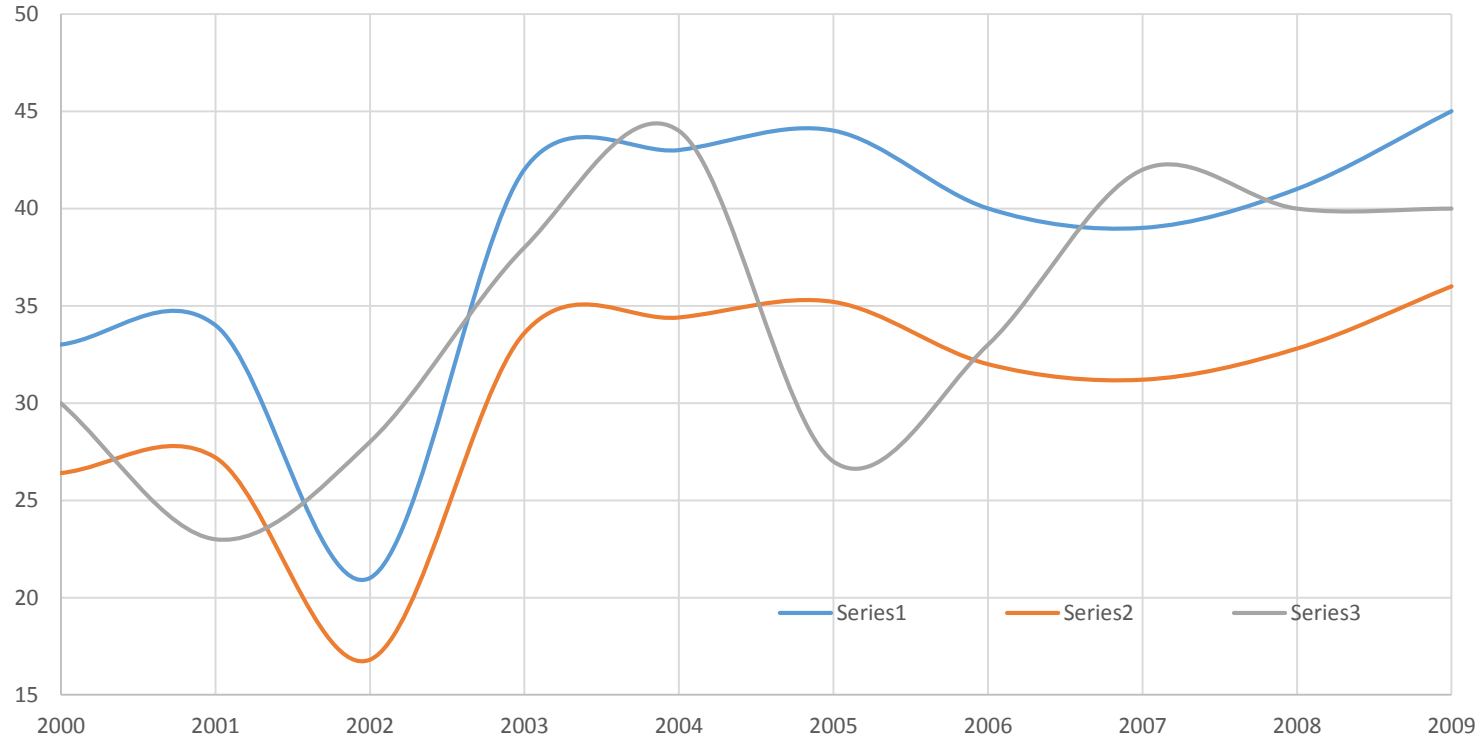
- Consistency among historical data as calculated by the model applied for FMRL calculation, for $FMRL_{corr}$ calculation and for FM actual estimates



New reporting requirements of 2nd CP – *Technical Correction*

- Inconsistency among historical data as calculated by the model applied for FMRL calculation, for $FMRL_{corr}$ calculation and for FM actual estimates

  (A bias between red and blue and a grey totally inconsistent)



New reporting requirements of 2nd CP – *Forest Management adjustment*

13. Note that:

- FMRL cannot be subject to adjustment
- **TC can be adjusted only if historical data of FM or FL-FL used to construct the FMRL are recalculated and the recalculation has not resulted in a TC to the FMRL that ensures methodological consistency between the FMRLcorr and FM actual estimates**
- Adjustment is applied only if the inconsistency determines the issuance of more credits or less debits than a consistent accounting would have been determined (conservativeness)

New reporting requirements of 2nd CP – *Forest Management adjustment*

14. Note that:

- The general principle is to calculate the adjusted estimates using the methods given in the table 1 in the Technical Guidance for Adjustments (annex to decision 20/CMP.1) and multiply the estimate with a conservativeness factor:
  - ✓ Conservativeness factors for LULUCF activities are given in tables 3, 4, 5 and 6 of Annex II to Decision 4/CMP.11
  - ✓ Tables 3 and 4 are for the review of the initial report (calculation of AA) and tables 5 and 6 are for estimates of Base Year, FMRL and CP years

New reporting requirements of 2nd CP – *Technical Correction*

- What if a methodological consistency is identified and a new run of the FMRL model, or the recalculation of the FMRL with a new method/model applied for FM actual estimates, cannot be applied?
- or if applied it does not address the inconsistency among historical data and FMRL?
  - The use of IPCC methods for ensuring time-series consistency *(e.g. overlap with historical data)* is to be recommended

New reporting requirements of 2nd CP – *Natural Disturbances (ND)*

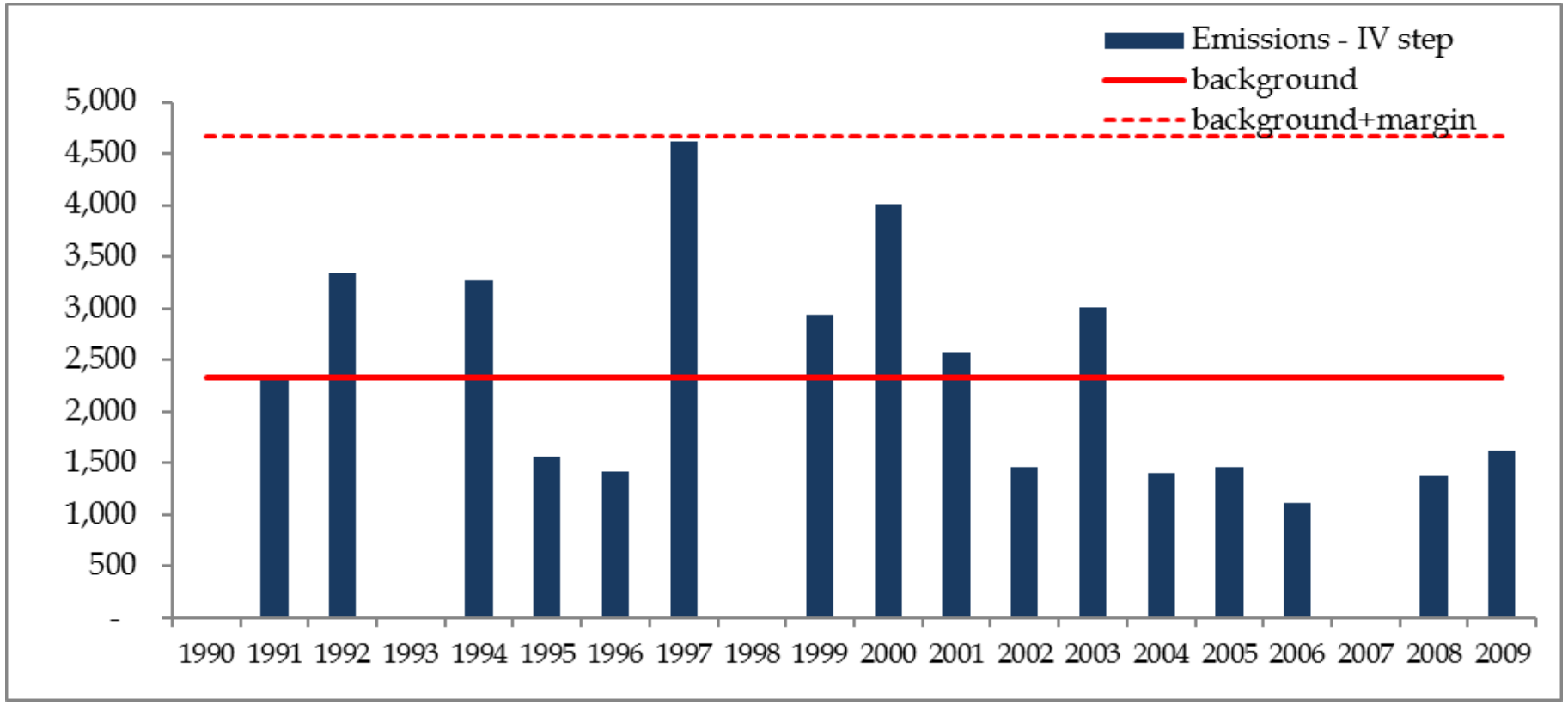
15. Parties may exclude from accounting of AR and FM, emissions and removals associated with those ND that are beyond the control of, and not materially influenced by, a Party

- To do so, the Party needs to calculate a BL of emissions from those ND that are within the control of, and not materially influenced by, the Party, as well as an application margin of the BL

- According to the default method the BL is the average amount of emissions associated with ND calculated from a distribution that does not contain any value outside its 95% Confidence Interval and (i.e. without extraordinary events) whose original values are taken from a historical period of at least 1990-2009

- In a year, emissions from ND above the BL are excluded from accounting when total emissions from ND exceed the application margin

New reporting requirements of 2nd CP – *Natural Disturbances (ND)*



Note that it is unlikely that the margin may be zero, since it would mean that a priori any variability in ND emissions/removals may not be the results of a failure of the "ND control system of the Party" while it is always caused by reasons out of human control

New reporting requirements of 2nd CP – *Natural Disturbances*

15. The BL and the margin must ensure that the application of the ND provision determines the expectation of neither net credits nor net debit. Note that:

- ✓ In general there is an expectation of net credits, if the amount of emissions included in the BL/FMRL is higher (and the amount of removals is lower) than that expected during the 2nd CP
- ✓ However, the overestimated BL and margin may also cause the trigger to be positive, less frequently than it should be to ensure no expectation of net debits
- ✓ Therefore the ERT must always check if a demonstration that the BL and margin do not result in expectation of net credits/debits is reported. It must also check its correctness

New reporting requirements of 2nd CP – *Natural Disturbances*

16. The ERT has to check whether lagged emissions from ND have been included in the BL and margin calculation.

- If they have been included, the ERT should carefully assess how lagged emissions impact the expectation of net credits/debits. Noting that the annual average amount of lagged emissions in the historical period is very likely to be higher than that expected in the accounting period

- Note that the exclusion of lagged emissions from BL, and margin, avoids the problem; while their and a projected FMRL would reduce to zero the expectation of net credits/ debits from lagged emissions

New reporting requirements of 2nd CP – *Natural Disturbances*

17. To calculate the BL and margin, Parties need to identify what types of ND are included in their BL. Consequently, the BL and margin apply to the total emissions (and removals) from those types only.

- What if emissions (and removals) from another type of ND are included when applying the ND provision?

  - ✓ Noting that not including a type of ND in the BL corresponds to assume as zero (0) its contribution to BL, if the FMRL does not include any emissions/removals from that type of ND, then the application of ND provision to that type would not result in net credits/debits and therefore should not be considered as a problem

New reporting requirements of 2nd CP – *Natural Disturbances*

18. The ERT has to check whether and how subsequent removals have been excluded from accounting.

- In general removals should be excluded till the C stock of disturbed land gains its pre-disturbance level

- In case of projected FMRL only, the difference within the actual post-disturbance removals and the removals included for that area in the FMRL is to be considered consequent to the ND

❑ What if subsequent removals are included in the calculation of the BL and margin?

In this case, removals in subsequent years need not to be excluded, since they are excluded altogether with emissions in the years in which the ND provision is applied, and the ERT has to assess such inclusion just in terms of no expectation of net credits/debits

New reporting requirements of 2nd CP – *Natural Disturbances*

19. To exclude the impact of area trends in AR, and where needed in FM, it is **good practice** to calculate a per hectare BL and margin

20. Trends in ND may occur in historical data. In such a case the ERT may note that:

- To minimize the impact of trends, the BL may be recalculated across time by applying a, every time, longer time series of historical data
- A longer time series of historical data may also be used to verify whether there is a long term trend or a casual apparent trend

New reporting requirements of 2nd CP – *Natural Disturbances*

21. Disturbed areas need to be tracked across time to ensure that the areas are not converted to other use of land.

22. Therefore, compared to 1st CP, national monitoring systems need to be improved

23. Consequently, ERT should focus on the capacity of the national monitoring system to identify and track, across time, disturbed areas (noting that anyhow, reporting method 1 and 2 are equally valid)

New reporting requirements of 2nd CP – *Interannual variability*

24. It is **good practice** to exclude from accounting the impact of variability not associated with changes in human activities (KP Supplement, section 2.3.5):

- ❑ What if a Party uses long-term averages of emissions and removals to represent the base year when environmental conditions in the base year (e.g. 1990) caused major deviations in emissions and removals from their longer-term averages (e.g. 5-year)?
- ➢ This is a good practice
- ❑ What if empirical growth and yield functions are used to estimate stand growth?
- ➢ the potential impact of interannual variability in environmental conditions has to be assessed as per good practice

New reporting requirements of 2nd CP – *Interannual variability*

24. (con't) It is **good practice** to exclude from accounting the impact of variability not associated with changes in human activities (KP Supplement, section 2.3.5):

- ❑ What if the periodic (e.g. 5-year) increment is consistently under-or over-predicted?

- ➢ It is **good practice** to adjust growth estimates accordingly, and to incorporate the new data in updated empirical functions.

- ❑ What if a Party uses same environmental and climate data, to calculate both the FMRL and the FM actual estimates applying methods/models responsive to environmental variability?

- ➢ it is **good practice**

New reporting requirements of 2nd CP – *Interannual variability*

24. (con't) It is **good practice** to exclude from accounting the impact of variability not associated with changes in human activities (KP Supplement, section 2.3.5):

   - Further, countries that use process-based models to simulate annual variability in stand growth and other stock changes need to evaluate these predictions against measurements of periodic stock changes on permanent sample plots and adjust the predictions, and underlying models, where necessary (*model vs actual*).

New reporting requirements of 2nd CP – *Harvested Wood Products*

25. HWP new pool to be accounted for

- In AR, D and FM activities
  - ✓ The inclusion of HWP from ARD activities within the FM actual estimates and FMRL has a conservative impact. There is therefore no need for the ERT to recommend countries to apportion total HWP to the three land types (AR, D, FM), since it would just increase the uncertainty of the accounted quantities.
- In AR, D and FM with historical FMRL, with instantaneous oxidation or other higher tier methods
- In FM with projected FMRL, with default method or higher tier methods
  - ✓ Default method implements the production approach (HWP produced from domestic sources of wood only)

New reporting requirements of 2nd CP – *Harvested Wood Products*

26. The ERT should check whether the HWP pool excludes each of the following:

- Bioenergy feedstocks [not included in HWP production data]
- Wood from deforestation events [to be excluded from HWP production by using equation 2.8.3 – KP Supplement]
- Wood from non-forest land [to be excluded from HWP production by using equation 2.8.3 – KP Supplement]
- Imported feedstock [to be excluded from HWP production by using equations 2.8.1, 2.8.2, 2.8.4 – KP Supplement]
- Imported HWP [not included in HWP production data]
- HWP in SWDS [implicitly accounted as instantaneously oxidized according to the half-life value applied]

New reporting requirements of 2nd CP – *Harvested Wood Products*

27. When applying the IPCC default methodology, the HWP pool does not include HWP produced in other countries with exported domestic wood. However, a higher tier method may include it; the ERT should therefore allow its inclusion.

28. HWP produced in the 1st CP should be excluded from HWP pool

- However, the KP Supplement notes that HWP was not listed among the pools to be accounted in 16/CMP.1, i.e. in CP1 there was no HWP accounting.

- In any case, their inclusion is not a problem, because it has either a conservative (for ARD and historical FMRL) or neutral (for projected FMRL) impact on accounting, while their exclusion causes an inconsistency in the trend (which should be noted in the ARR)

New reporting requirements of 2nd CP – *Harvested Wood Products*

29. In case of projected FMRL, Parties may exclude all HWP produced before the 2nd CP. However:

- ➢ Such provision is inconsistent with the Convention's methods. Consequently, where applied, it may cause a large deviation of KP accounted quantities with Convention's
- ✓ Therefore, the ERT should note this in the ARR together with a quantification of its impact on total emissions and removals accounted for

New reporting requirements of 2nd CP – *insignificant categories/pools*

30. Note that also for KP-LULUCF activities, a category or subcategory (e.g. a C pool) can be reported as NE if proven to be insignificant (decision 24/CP.19, para 37(b)), even if it is a net source

- This should be done consistently across time series:
  - ✓ across the 2nd CP, including base year/FMRL
  - ✓ between 1st and 2nd CP
- Otherwise same considerations made for "not a source" rule apply

New reporting requirements of 2nd CP –

All LULUCF debits must be accounted for

31. Debits are not subject to any limit:

- The deforestation debit rule does not apply to 2nd CP
- The FM cap is not anymore symmetric; it only limits credits' issuance

New reporting requirements of 2nd CP – *Carbon Equivalent Forest (CEF)*

32. The CEF provision applies to forest plantation and:

- 1 January 1990 the land should be a non-forest or be a forest plantation younger than 31 years old
  - ✓ this means that CEF_{hc} was not older than Y – 1990 + 30 years
    (Y is the year in which the forest plantation is harvested and cleared)
- The area reported as CEF_{ne} must be at least equivalent to the area of CEF_{hc}
- Within the normal harvesting cycle of CEF_{hc} the C stock in the CEF_{ne} should achieve a level at least equivalent to that contained in the CEF_{hc}
  - ✓ Otherwise a debit, equivalent to the difference should be accounted for (in case of projected FMRL the debit would be embedded in the amount of debits/credits resulting from the comparison of actual GHG estimates for FM and its FMRL)

No countries have applied CEF provision so far

New reporting requirements of 2nd CP – *Wetlands drainage and Rewetting*

33. Lower hierarchical level among voluntary activities

34. If elected, both drained and rewetted organic soils must be reported

35. Base year area and CP area must coincide

36. It may cover:
    a) areas drained and rewetted since 1 January 1990 only, or
    b) all areas already drained and rewetted at 1 January 1990 plus all those drained and rewetted thereafter
    - Note that because of the net-net accounting the quantities accounted for with approach a) or approach b) are identical

37. Methods and factors provided in the 2013 IPCC Wetlands Supplement must be applied

New reporting requirements of 2nd CP – *Miscellanea*

39. Background table 4(KP-II)3, neither limits reporting to direct N_2O emissions nor refers to indirect N_2O emissions

   - Therefore, considering that indirect N_2O emissions associated with SOM mineralization are reported under the Convention GHG inventory, these emissions shall also be reported under KP-LULUCF activities (unless already included under Agriculture)

40. The use of the 2013 IPCC Wetlands Supplement must be encouraged in the ARR

41. CM and GM lands may be reported altogether under a single activity (CM)

   - Although, the use of proper methods and factors for the actual use of land has to be ensured

Thanks

Questions and Comments are most welcome

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