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Agenda item 11(a)
**Methodological issues under the Kyoto Protocol**
**Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol**

# Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol

## Revised draft conclusions proposed by the Chair

## Addendum

## Recommendation of the Subsidiary Body for Scientific and Technological Advice

The Subsidiary Body for Scientific and Technological Advice, at its forty-third session, recommended the following draft decision for consideration and adoption by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its eleventh session:

## Draft decision -/CMP.11

# Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol including those relating to Articles 5, 7 and 8 of the

# Kyoto Protocol, part II: implications related to review and adjustments and other related issues[1]

*The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol*,

*Recalling* Articles 5, 7 and 8 of the Kyoto Protocol,

*Also recalling* decisions 2/CMP.6, 2/CMP.7, 3/CMP.7, 4/CMP.7, 1/CMP.8, 2/CMP.8 and 6/CMP.9,

*Being aware* of decisions 11/CMP.1, 13/CMP.1, 15/CMP.1, 16/CMP.1, 18/CMP.1, 19/CMP.1, 20/CMP.1, 21/CMP.1, 22/CMP.1, 23/CMP.1, 24/CMP.1, 25/CMP.1, 27/CMP.1 and 8/CMP.5,

1. *Decides* that, for the purpose of the second commitment period of the Kyoto Protocol and pending the entry into force of the Doha Amendment, contained in annex I to decision 1/CMP.8, any references in this decision to Annex A, Annex B, Article 3, paragraphs 1 bis, 1 ter, 1 quater, 7 bis, 7 ter, 8, 8 bis, 12 bis and 12 ter, and Article 4, paragraphs 2 and 3, unless otherwise specified, shall be understood as referring to those Articles and annexes as contained in the Doha Amendment, and that upon the entry into force of the Doha Amendment such references shall be read as references to the relevant Articles of the Kyoto Protocol as amended;

2. *Also decides* that, for the purpose of the second commitment period, decisions 20/CMP.1 and 22/CMP.1 shall apply mutatis mutandis, except where otherwise specified in decisions 1/CMP.8 and 2/CMP.8 and in this decision;

3. *Further decides* that, for the purpose of the second commitment period, the following changes shall apply to decisions 18/CMP.1, 19/CMP.1, 20/CMP.1 and 22/CMP.1:

(a) All references to Article 3, paragraphs 7 and 8, shall be read as references to Article 3, paragraphs 7 bis, 8 and 8 bis;

(b) All references to the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter referred to as the Revised 1996 IPCC Guidelines) as elaborated by the Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (hereinafter referred to as the IPCC good practice guidance), the IPCC Guidelines as elaborated by the IPCC good practice guidance, the IPCC Guidelines and any good practice guidance or the IPCC good practice guidance, shall be read as references to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter referred to as the 2006 IPCC Guidelines) as implemented through the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories" and the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands, as implemented in accordance with decisions 24/CP.19 and 6/CMP.9, except references in paragraph 1 of decision 20/CMP.1;

[1] Within this decision and its annexes all references to -/CMP.11 refer to the decision titled "Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part I: implications related to accounting and reporting and other related issues", proposed for adoption under agenda item 11(a) of the Subsidiary Body for Scientific and Technological Advice.

(c) All references to chapter 7 of the IPCC good practice guidance shall be read as references to chapter 4 of volume 1 of the 2006 IPCC Guidelines;

(d) All references to "source categories" shall be read as references to "categories";

(e) All references to "initial review" shall be read as references to "review of the report to facilitate the calculation of the assigned amount"; except that in paragraph 125 of the annex to decision 22/CMP.1;

(f) All references to "industrial processes, solvent and other product use" shall be read as references to "industrial processes and product use";

(g) All references to decision 13/CMP.1 shall be read as references to decision 13/CMP.1 in conjunction with decision -/CMP.11, except those in paragraphs 2 and 5 of decision 22/CMP.1 and paragraphs 85 (a) and (c), 86 (a) and (c), 87 (a) 89 (a) and 92 of the annex to decision 22/CMP.1;

(h) All references to paragraphs 6, 7 and 8 of the annex to decision 13/CMP.1 shall be read as references to paragraph 2 of and annex I to decision 2/CMP.8, except those in paragraphs 2 and 5 of decision 22/CMP.1;

(i) All references to activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, shall be read as references to activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and any elected activities under Article 3, paragraph 4;

(j) All references to decision 16/CMP.1 shall be read as references to decision 2/CMP.7 and decision 6/CMP.9;

(k) Reference to "section I of the guidelines for the preparation of the information required under Article 7" in paragraphs 50 (a) and 69 of the annex to decision 22/CMP.1 shall be read as a reference to "the guidance included in annex II to decision 2/CMP.8 and in decision 6/CMP.9";

(l) Reference to "section I.D, greenhouse gas inventory information, of the guidelines for the preparation of the information required under Article 7" in paragraph 51 of the annex to decision 22/CMP.1 shall be read as reference to "guidance included in annex II to decision 2/CMP.8 and in decision 6/CMP.9";

(m) Reference to "section I.E of the annex to decision 15/CMP.1" in paragraphs 88(a) and 93 of the annex to decision 22/CMP.1 shall be read as a reference to "guidance included in section I.E of the annex to decision 15/CMP.1 and in annex III to decision -/CMP.11";

(n) References to "section 7.3.2.2 of the Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and section 5.6 of the Good Practice Guidance for Land Use, Land-Use Change and Forestry" shall be read as references to "section 5.3 of Chapter 5 of volume 1 of the 2006 IPCC Guidelines";

(o) References to "paragraph 21 of the annex to decision 16/CMP.1" shall be read as references to "paragraph 26 of the annex to decision 2/CMP.7";

(p) Reference to " IPCC good practice guidance (chapter 7, section 7.2)" in paragraph 14(a) of the annex to decision 19/CMP.1 shall be read as reference to "chapter 4.3, volume 1, of the 2006 IPCC Guidelines";

(q) For the purpose of the second commitment period, all references to decision 15/CMP.1 in part III of the annex to decision 22/CMP.1 shall be read as references to decision 15/CMP.1 in conjunction with annex III to decision -/CMP.11;

(r) References to "as reported in accordance with paragraph 6 of the annex to decision 13/CMP.1" in paragraph 85(a) of the annex to decision 22/CMP.1 shall be read as references to "as submitted through the report to facilitate the calculation of the assigned amount of each Party included in Annex I with a commitment inscribed in the third column of Annex B to the Doha Amendment in accordance with paragraph 2 of decision 2/CMP.8";

(s) The definition of key source category in paragraph 3(d) of decision 19/CMP.1 shall be read as "Key category is one that is prioritized within the national inventory because its estimate has a significant influence on a country's total inventory of greenhouse gases in terms of the absolute level of emissions, the trend in emissions and removals, or uncertainty in emissions or removals. Whenever the term key category is used, it includes both source and sink categories";

4. *Adopts* the revisions to the "Guidelines for review under Article 8 of the Kyoto Protocol" for the second commitment period contained in annex I;

5. *Also adopts* the revisions to the "Good practice guidance and adjustments under Article 5, paragraph 2, of the Kyoto Protocol" for the second commitment period set out in annex II;

6. *Clarifies* that for the purpose of the second commitment period, the adjustments referred to in paragraph 5 above are not applicable to the Parties included in Annex I without quantified emission limitation and reduction commitments for the second commitment period;

7. *Requests* the secretariat, in view of the revision of the "Guidelines for review under Article 8 of the Kyoto Protocol", to modify the relevant information technology tools, as needed, so as to support the implementation of the review process;

8. *Recognizes* that the deadline of June 2014, set out in decision 6/CMP.9, paragraph 4, for providing the upgraded CRF Reporter to Parties in order to enable them to submit their inventories, was not met;

9. *Notes* that the December 2014 software version of the CRF Reporter was not functioning[2] in such a manner as to enable Annex I Parties to prepare their inventory submissions;

10. *Reiterates* that in 2015, Annex I Parties may submit their common reporting format tables after 15 April, but no later than the corresponding delay in CRF Reporter availability;

11. *Notes* that a delay in the submission of the common reporting format tables by a Party also delays the submission of the report to facilitate the calculation of its assigned amount referred to in decision 2/CMP.8, paragraph 2;

12. *Acknowledges* that Annex I Parties may submit the report to facilitate the calculation of the assigned amount referred to in paragraph 11 above and make the annual inventory submission after 15 April, but no later than the corresponding delay in CRF Reporter availability;

13. *Urges* Annex I Parties to submit the report to facilitate the calculation of the assigned amount referred to in decision 2/CMP.8, paragraph 2, as soon as practically possible.

[2] Functioning software means that the data on greenhouse gas emissions/removals are reported accurately both in terms of CRF tables and Extensible Markup Language format.

# Annex I

## Revisions to the guidelines for review under Article 8 of the Kyoto Protocol

### General approach to review

1. For the purpose of the second commitment period of the Kyoto Protocol, footnote 1 to the title of the annex to decision 22/CMP.1 shall be replaced by the following footnote: "Article" in these guidelines refers to an Article of the Kyoto Protocol or an Article in the Doha Amendment to the Kyoto Protocol (annex I to decision 1/CMP.8), unless otherwise specified.

2. For the purpose of the second commitment period, footnotes 5 and 6 of the annex to decision 22/CMP.1 shall not apply.

### Review of report to facilitate the calculation of the assigned amount pursuant to Article 3, paragraphs 7 bis, 8 and 8 bis

3. For the purpose of the second commitment period, paragraphs 11 and 12 of the annex to the decision 22/CMP.1 shall be replaced by the following:

> 11. Each Party included in Annex I with a commitment inscribed in the third column of the table contained in Annex B to the Doha Amendment shall be subject to a review of the report to facilitate the calculation of its assigned amount pursuant to paragraph 2 of decision 2/CMP.8 for the second commitment period together with the inventory submission for the first year of the second commitment period.
>
> 12. The expert review team shall review the following information contained or referenced in the report to facilitate the calculation of the assigned amount referred to in paragraph 2 of decision 2/CMP.8:
>
> (a) The calculation of the assigned amount pursuant to Article 3, paragraphs 7 bis, 8 and 8 bis, in accordance with paragraph 2 of annex I to decision -/CMP.11, and the calculation of the commitment period reserve, for conformity with the modalities for the accounting of assigned amounts under Article 7, paragraph 4 of the Kyoto Protocol, in accordance with the procedures contained in part III of these guidelines;[1]
>
> (b) The information provided in accordance with paragraphs 1(f) to 1(k) in annex I to decision 2/CMP.8 related to the accounting of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol;
>
> (c) With regard to Parties included in Annex I with a commitment inscribed in the third column of the table contained in Annex B to the Doha Amendment which did not have a quantified emission limitation and reduction target in the first commitment period:

[1] References to "these guidelines" hereinafter shall be understood as referring to the guidelines contained in the annex to decision 22/CMP.1, as amended by the current decision.

(i) The national system pursuant to Article 5, paragraph 1, in accordance with the procedures contained in part IV of these guidelines;

(ii) The national registry pursuant to Article 7, paragraph 4, in accordance with the procedures contained in part V of these guidelines;

(d) This review shall replace the review of the same elements in the annual inventory review conducted in conjunction with this review. For Parties that have reached an agreement to fulfil their commitments under Article 3 jointly, in accordance with Article 4, the completeness of information referred to in paragraph 11 of decision -/CMP.11.

4. Paragraph 14 of the annex to decision 22/CMP.1 shall be replaced by the following:

14. For Parties included in Annex I with a commitment inscribed in the third column of the table contained in Annex B to the Doha Amendment which did not have a quantified emission limitation and reduction target in the first commitment period, the review of the report to facilitate the calculation of the assigned amount for the second commitment period shall be conducted as an in-country visit. For other Parties included in Annex I the review shall be conducted either as a centralized review or as an in-country visit, giving priority to in-country visits for those Parties that have not been reviewed in such a way in recent years.

## Annual review of national systems and national registries

5. For the purpose of the second commitment period, paragraphs 15 (b) (iii) and (iv) of the annex to the decision 22/CMP.1 shall be replaced by the following:

15 (b) (iii). Information provided on national systems or changes thereof in accordance with the procedures contained in part IV of these guidelines;

15 (b) (iv). Information provided on national registries or changes thereto in accordance with the procedures contained in part V of these guidelines.

6. For the purpose of the second commitment period, the following paragraph shall be inserted after paragraph 15(b)(iv) of the annex to decision 22/CMP.1:

15(b)(iv) bis. When a Party included in Annex I without a quantified emission limitation and reduction commitment for the second commitment period reports information on its national registry in accordance with decision 15/CMP.1, that information shall be reviewed.

7. Paragraph 17 of the annex to the decision 22/CMP.1 shall not apply for the purpose of the second commitment period.

8. For the purpose of the second commitment period, paragraph 97 of the annex to the decision 22/CMP.1 shall be replaced by the following:

97. The review of the national system shall be conducted in conjunction with the annual inventory review.

## Annual review of standard independent assessment reports

9. For the purpose of the second commitment period, paragraphs 86 (b) (ii) and (iii) of the annex to the decision 22/CMP.1 shall be replaced by the following:

> 86 (b) (ii) Standard independent assessment reports (SIARs) prepared by the secretariat, including information of any discrepancies or non-replacements indicated by these reports;
>
> 86 (b) (iii) Information contained in the national registry that substantiates or clarifies the issues raised in the SIAR, if the SIAR prepared by the secretariat indicates any issues related to accounting, transactions, and reporting of units under the Kyoto Protocol. In such cases Parties included in Annex I shall provide the expert review team with effective access to their national registry during the review. The relevant parts of paragraphs 9 and 10 of part I of these guidelines shall also apply to this information.

10. For the purpose of the second commitment period, the reference in paragraph 87 (c) of the annex to the decision 22/CMP.1 shall be updated as follows:

> 87 (c) The calculation of the required level of the commitment period reserve is in accordance with decision -/CMP.11.

11. For the purpose of the second commitment period, paragraph 88 (b) of the annex to the decision 22/CMP.1 shall be replaced by the following:

> 88 (b) The information contained in the SIAR identifies any issues related to accounting, transactions and reporting of units under the Kyoto Protocol, whether these issues still exist and whether recommendations from previous reviews have been implemented by the Party.

12. Paragraphs 88 (c–g), and (i) of the annex to decision 22/CMP.1 shall not apply for the purpose of the second commitment period.

13. For the purpose of the second commitment period, paragraph 88 (h) of the annex to the decision 22/CMP1 shall be replaced by the following:

> 88 (h) The required level of the commitment period reserve as reported, is calculated in accordance with decision -/CMP.11.

14. For the purpose of the second commitment period, paragraph 88 (j) (v) of the annex to the decision 22/CMP.1 shall be replaced by the following:

> 88 (j) (v) Assess whether any discrepancy has been identified in the SIAR by the transaction log relating to transactions initiated by the Party, and if so the expert review team shall:
>
> (i) Examine the cause of the discrepancy and whether the Party or Parties has or have corrected the problem that caused the discrepancy;
>
> (ii) Assess whether the problem that caused the discrepancy relates to the capacity of the national registry to ensure the accurate accounting, issuance, holding, transfer, acquisition, cancellation and retirement of ERUs, CERs, tCERs, lCERs, AAUs and RMUs, the replacement of tCERs and lCERs, and the carry-over of ERUs, CERs and AAUs, and if so, initiate a thorough review of the registry system in accordance with part V of these guidelines.

15. For the purpose of the second commitment period, paragraph 88 (k) of the annex to the decision 22/CMP.1 shall be replaced by the following:

> 88. (k) Any non-replacement of units has been identified in the SIAR, and if so the expert review team shall:
>
> (i) Examine the cause of the non-replacement and whether the Party has corrected the problem that caused the non-replacement;
>
> (ii) Assess whether the problem that caused the non-replacement relates to the capacity of the national registry to ensure the accurate accounting, holding, transfer, acquisition, cancellation, and retirement of ERUs, CERs, tCERs, lCERs, AAUs and RMUs, and the replacement of tCERs and lCERs, and if so, initiate a thorough review of the registry system in accordance with part V of these guidelines.

## Consistency with the revised review guidelines under the Convention

16. For the purpose of the second commitment period, paragraphs 52, 55, 56 and 57 of the annex to decision 22/CMP.1 shall be replaced by the following:

> 52. Related to the organization of the inventory review in different phases and the scheduling of desk, centralized and in-country reviews, the same provisions as agreed in the "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" contained in the annex to decision 13/CP.20 shall apply.

17. For the purpose of the second commitment period, the following paragraph shall replace paragraphs 59 and 60 of decision 22/CMP.1:

> 60. The initial check shall be conducted consistent with the initial assessment included in part III of the "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" contained in the annex to decision 13/CP.20. The initial check shall in addition cover whether:
>
> (a) A Party included in Annex I to the Convention has failed to include an estimate for a source category (as defined in chapter 4 of volume 1 of the 2006 IPCC Guidelines) that individually accounted for 7 per cent or more of the Party's aggregate emissions, defined as the aggregated submitted emissions of the gases from the sources listed in Annex A to the Kyoto Protocol as contained in the Doha Amendment, in the most recent of the Party's reviewed inventories in which the source was estimated;
>
> (b) An Annex I Party has failed to provide supplementary information in accordance with Annex II to decision 2/CMP.8 and decision 6/CMP.9.

18. For the purpose of the second commitment period, paragraphs 61–63 of the annex to decision 22/CMP.1 shall be replaced by the following:

> 61. For the scope of the individual review, the same provisions as included in the "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention", contained in the annex to decision 13/CP.20 shall apply.

19. For the purpose of the second commitment period, paragraphs 65–67 of the annex to decision 22/CMP.1 shall be replaced by the following:

65. For the scope of the individual review, the same provisions as those included in the "UNFCCC Guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" included in the annex to decision 13/CP.20 shall apply. In addition, the inventory review shall:

(a) Examine the application of the requirement of the 2006 *IPCC Guidelines, the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the Wetlands Supplement* as adopted by the COP/MOP and the "UNFCCC Guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" contained in the annex to decision 13/CP.20 and relevant decisions of the Conference of the Parties on those requirements, and identify any divergence from these requirements;

(b) Assess whether the functions of the national system have been established to facilitate the continuous improvement of the greenhouse gas inventory and whether Quality Assurance/Quality Control procedures in accordance with guidelines for national systems in accordance with decision 19/CMP.1 have been implemented;

(c) Assess the completeness and transparency of supplementary information in accordance with reporting under Article 7 of the Kyoto Protocol;

(d) Assess whether the supplementary information reported for activities under Article 3, paragraph 3, forest management under Article 3,paragraph 4 and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol has been estimated, reported and accounted in line with 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol, decision 2/CMP.7, annex II to decision 2/CMP.8 and decision 6/CMP.9."

20. For the purpose of the second commitment period, paragraph 69(d) (i) of the annex to decision 22/CMP.1 shall be read as "Gaps in the inventory estimates for source categories or gases for which methods are provided in the IPCC guidelines, and the Wetlands Supplement, for Parties that have elected to account for wetland drainage and rewetting".

# Annex II

## Revisions to the good practice guidance and adjustments under Article 5, paragraph 2, of the Kyoto Protocol

1. Paragraphs 1 and 2 of decision 20/CMP.1 shall not apply for the purpose of the second commitment period of the Kyoto Protocol.

2. For the purpose of the second commitment period, paragraph 11 of decision 20/CMP.1 shall be replaced by the following:

> 11. Decides that an Annex I Party may submit a revised estimate for a part of its inventory of a year of the commitment period to which an adjustment was previously applied, provided that the revised estimate is submitted, at the latest, in conjunction with the inventory for the final year of the commitment period. Subject to a review under Article 8 and the acceptance of the revised estimate by the expert review team, the revised estimate shall replace the adjusted estimate. In the event of a disagreement between the Annex I Party and the expert review team regarding the revised estimate, the issue will be forwarded to the Compliance Committee, which will resolve the disagreement in accordance with the procedures and mechanisms on compliance. The option for an Annex I Party to submit a revised estimate for a part of its inventory to which an adjustment was previously applied should not prevent Annex I Parties from making their best efforts to correct the problem at the time it was initially identified and in accordance with the time frame set forth in the guidelines for review under Article 8.

3. For the purpose of the second commitment period, the following paragraph shall be inserted after paragraph 11 of decision 20/CMP.1:

> 11 bis. *Further decides*, that Parties included in Annex I without quantified emission limitation and reduction commitments for the second commitment period may submit a revised estimate for a part of their inventory or a single year during the review process, noting that the application of the adjustments is not applicable to such Parties. Subject to a review under Article 8 of the Kyoto Protocol and the acceptance of the revised estimate by the expert review team, the revised estimate shall replace the previous estimate. The option for a Party to submit a revised estimate for a part of its inventory should not prevent such a Party from making its best efforts to correct the problem at the time it was initially identified and in accordance with the time frame set forth in the guidelines for review under Article 8 of the Kyoto Protocol.

4. Footnote 3 in paragraph 4 of the annex to decision 20/CMP.1 shall not apply for the purpose of the second commitment period.

5. For the purpose of the second commitment period, paragraph 13 (c) of the annex to decision 20/CMP.1 shall be replaced by the following:

> 13. (c) For cropland management, grazing land management, revegetation and wetland drainage and rewetting under Article 3, paragraph 4, any adjustment to the emissions or removals in the base year resulting from these activities should be considered and applied according to the choice made by a Party regarding the periodicity of accounting of these activities (e.g. annually or at the end of the commitment period). In the case that the Party has chosen to account annually for these activities and submits recalculated estimates, adjustments may be

applied retroactively for the base year, provided these recalculated estimates have not yet been subject to review and the provisions of paragraph 4 above apply to these recalculated estimates.

6. For the purpose of the second commitment period, the following paragraph shall be inserted after paragraph 13 of the annex to decision 20/CMP.1:

> 13. bis Adjustments shall be applied to technical corrections to forest management reference levels when reported data on forest management or forest land remaining forest land used to establish the reference level are recalculated, and the recalculations have not resulted in a technical correction to the reference level which ensures methodological consistency between the corrected forest management reference level and the reported estimates for forest management. The methods and conservativeness factors shall be applied to adjustments to technical corrections for forest management using the guidance in the attachment. When an adjustment to a forest management emission/removals estimate also results in an adjustment to the technical correction, conservativeness factors should not be applied to the technical correction.

7. For the purpose of the second commitment period, paragraph 17 of the annex to decision 20/CMP.1 shall be replaced by the following:

> 17. If the expert review team finds that an estimate submitted by a Party leads to an underestimation of emissions or overestimation of removals in the base year or in the forest management reference level after any technical correction, or an overestimation of emissions or underestimation of removals in a year of the commitment period or forest management reference level after any technical correction, an adjustment calculated in accordance with paragraph 54 below should not be applied.

8. For the purpose of the second commitment period, paragraph 18 of the annex to decision 20/CMP.1 shall be replaced by the following:

> 18. Similarly, if the expert review team finds that an estimate submitted by a Party leads to an underestimation of removals resulting from any activity under Article 3, paragraph 3, or any elected activity under Article 3, paragraph 4, in a year of the commitment period, or an overestimation of removals in the base year for any elected activity under Article 3, paragraph 4 (cropland management, grazing land management, revegetation and wetland drainage and rewetting), the adjustment calculated in accordance with paragraph 54 below should not be applied if such a calculation would result in an adjusted estimate that is less conservative than the original estimate submitted by the Party.

9. Reference to "paragraph 21 of the annex to decision 16/CMP.1" in paragraph 21 of the annex to decision 20/CMP.1 shall be read as a reference to "paragraph 26 of the annex to decision 2/CMP.7".

10. For the purpose of the second commitment period, paragraph 28 of the annex to decision 20/CMP1 shall be replaced by the following:

> 28. In the case where none of the basic adjustment methods listed in table 1 is suitable for a given adjustment case, expert review teams may use other adjustment methods. If adjustment methods other than those included in this technical guidance are applied, expert review teams should report the reason for not using any of the basic adjustment methods of this technical guidance and should justify why they consider the method chosen as appropriate.

11. For the purpose of the second commitment period, paragraph 34 (a) of the annex to decision 20/CMP.1 shall be replaced by the following, including the additional footnote:

> 34. (a) IPCC default values from the 2006 *IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines), the, *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (hereinafter referred to as the Wetlands Supplement)[1] or other recommended international data sources included in the inventory review resources listed in appendix I to that document, and consistent with the IPCC good practice guidance. If emission factors or other inventory parameters from other international data sources are used, the expert review team should, in the review report, justify and document the reason for their use.

12. For the purpose of the second commitment period, paragraph 38 of the annex to decision 20/CMP.1 shall be replaced by the following:

> 38. When using an average inventory parameter from a cluster of countries, assumptions made in choosing the cluster should be documented, as should how the given inventory average parameter compares with the default parameter or range provided in the 2006 *IPCC Guidelines, the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the Wetlands Supplement, as applicable*, where available. Similarly, when clustering is related to the use of a driver (application of an average driver-based emission or removal rate) from a cluster of countries, assumptions made for the composition of the cluster and the established relationship with the driver should be documented.

13. For the purpose of the second commitment period, paragraph 42 of the annex to decision 20/CMP.1 shall be replaced by the following:

> 42. This basic adjustment method refers to tier 1 methods in the 2006 *IPCC Guidelines, the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol and the Wetlands Supplement*. The Wetlands Supplement should be consulted only in cases where the Party has elected the activity wetland drainage and rewetting and in cases where the Party applies methods from the Wetlands Supplement on a voluntary basis. This adjustment method will be applicable only if activity data are available from national sources in accordance with paragraph 29 above or from international data sources as described in paragraph 31 above, or are obtained as described in paragraph 33 above. An emission factor or other inventory parameter as required by the method and obtained as described in paragraph 34 above should be used.

14. Paragraphs 61, 64, 68, and 74 of the annex to decision 20/CMP.1 shall not apply for the purpose of the second commitment period.

15. For the purpose of the second commitment period, paragraph 63 of the annex to decision 20/CMP.1 shall be replaced by the following paragraph:

> 63. If adjusting hydrofluorocarbon (HFC), perfluorocarbon (PFC), nitrogen trifluoride ($NF_3$) and sulphur hexafluoride ($SF_6$) estimates from the consumption

[1] *When wetland drainage and rewetting has been elected, the Wetlands Supplement should have the highest order of preference for applicable categories.*

of halocarbons, $NF_3$ and $SF_6$, consideration should be given to the uncertainty of sales figures (e.g. for sales of these chemicals to the foam blowing industry) and other parameters (such as the composition of the mix in coolants) as given in the 2006 IPCC Guidelines.

16. For the purpose of the second commitment period, paragraph 69 of the annex to decision 20/CMP.1 shall be replaced by the following:

> 69 Estimates of emissions and removals in the LULUCF sector and from LULUCF activities may be based not on annual data but on extrapolations and may be recalculated at a later stage. For this reason, the application of an adjustment to the base year of cropland management, grazing land management, revegetation and wetland drainage and rewetting through an extrapolation should be done with care, given that data may not be reported for the years between the base year and the commitment period. If an extrapolation is needed for the base year of these activities, the expert review team could use as a driver the time series for the LULUCF sector included in the annual inventory submission under the Convention.

17. For the purpose of the second commitment period, sub paragraph 1(a) of appendix III to the annex to decision 20/CMP.1 shall be replaced by the following:

> 1. (a) For Annex A sources, one for use in the calculation of adjustments for an base year emission estimate and a commitment period recovery estimate (e.g. landfill gas recovery) and one for the calculation of adjustments of emissions for a year of the commitment period and base year's recovery estimates.

18. For the purpose of the second commitment period, paragraph 3 of appendix III to the annex to decision 20/CMP.1 shall be replaced by the following:

> 3. When a given category is not covered in the table, the provision of paragraph 55 of the technical guidance applies, such as for categories "other" under energy, industrial processes and other product use, agriculture, LULUCF and waste.

## Procedures for adjustments under Article 5, paragraph 2, of the Kyoto Protocol

19. For the purpose of the second commitment period, paragraph 80(b) of the annex to decision 22/CMP.1 shall be replaced by the following:

> 80(b) The adjustment procedure should only commence after the Party has had an opportunity to correct a problem and if the expert review team finds that the Party has not adequately corrected the problem through the provision of an acceptable revised estimate, within the time frames set out in paragraphs 74 and 76 above and if the expert review team assumes that the change resulting from the adjustment will be above the threshold given in paragraph 37 of the annex to decision 24/CP.19.

20. For the purpose of the second commitment period, tables 1 to 4b in appendix III to the annex to decision 20/CMP.1 shall be replaced by the tables in the appendix.

# Appendix

## Tables of conservativeness factors

Table 1

**Conservativeness factors for adjustments to emission estimates in the base year or recovery estimates in the commitment period (for sources in Annex A to the Kyoto Protocol)**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CO2 | CH4 | N2O | HFCs | PFCs | SF6 | NF3 | | CO2 | CH4 | N2O | HFCs | PFCs | SF6 | NF3 |
| 1. Energy | | | | | | | | | | | | | | | |
| A. Fuel combustion (sectoral approach) | | | | | | | | | | | | | | | |
| 1. Energy industries | 0.98 | 0.82 | 0.73 | | | | | 0.98 | 0.94 | 0.82 | 0.73 | | | | |
| 2. Manufacturing industries and construction | 0.98 | 0.82 | 0.73 | | | | | 0.94 | 0.94 | 0.73 | 0.73 | | | | |
| 3.a Domestic aviation and navigation | 0.98 | 0.89 | 0.82 | | | | | 0.82 | 0.82 | 0.73 | 0.73 | | | | |
| 3.b-c Road transport and railways | 0.98 | 0.89 | 0.82 | | | | | 0.94 | 0.94 | 0.89 | 0.73 | | | | |
| 4. Other sectors | 0.98 | 0.82 | 0.73 | | | | | 0.94 | 0.94 | 0.73 | 0.73 | | | | |
| 5. Other | 0.98 | 0.82 | 0.73 | | | | | 0.82 | 0.94 | 0.73 | 0.73 | | | | |
| Biomass (all fuel combustion sources) | | 0.82 | 0.82 | | | | | 0.82 | | 0.73 | 0.73 | | | | |
| Off-road vehicles | 0.98 | 0.73 | 0.73 | | | | | 0.89 | 0.82 | 0.73 | 0.73 | | | | |
| Fuel combustion (reference approach) | 0.98 | | | | | | | 0.98 | 0.98 | | | | | | |
| B. Fugitive emissions from fuels | | | | | | | | | | | | | | | |
| 1. Solid fuels | 0.73 | 0.73 | | | | | | 0.98 | 0.73 | 0.73 | | | | | |
| 2. Oil and natural gas | 0.73 | 0.73 | 0.73 | | | | | 0.98 | 0.73 | 0.73 | 0.73 | | | | |
| C. $CO_2$ Transport and storage | 0.82 | | | | | | | 0.98 | 0.73 | | | | | | |
| 2. Industrial processes and product use | | | | | | | | | | | | | | | |
| A. Mineral industry | 0.94 | | | | | | | 0.94 | 0.94 | | | | | | |
| B. Chemical industry | 0.98 | 0.73 | 0.89 | 0.89 | 0.82 | 0.82 | 0.82 | 0.94 | 0.94 | 0.73 | 0.89 | 0.89 | 0.73 | 0.73 | 0.73 |
| C. Metal industry | 0.98 | 0.82 | | 0.98 | 0.82 | 0.82 | | 0.98 | 0.94 | 0.73 | | 0.94 | 0.82 | 0.82 | |
| D. Non-energy products from fuels and solvent use | 0.89 | | | | | | | 0.94 | 0.82 | | | | | | |
| E. Electronics industry | | | | | 0.73 | 0.73 | 0.73 | 0.94 | | | | | 0.73 | 0.73 | 0.73 |
| F. Product uses as substitutes for ozone depleting substances | | | | 0.82 | 0.82 | | | 0.82 | | | | 0.82 | 0.82 | | |
| G. Other product manufacture and use | | | 0.98 | | 0.89 | 0.89 | | 0.89 | | | 0.94 | | 0.82 | 0.82 | |
| H. Other | | | | | | | | | | | | | | | |
| 3. Agriculture | | | | | | | | | | | | | | | |
| A. Enteric fermentation | | 0.89 | | | | | | 0.98 | | 0.89 | | | | | |
| B. Manure management | | 0.89 | 0.82 | | | | | 0.98 | | 0.89 | 0.82 | | | | |
| C. Rice cultivation | | 0.89 | | | | | | 0.94 | | 0.89 | | | | | |
| D. Agricultural soils | | | 0.73 | | | | | 0.82 | | | 0.73 | | | | |
| E. Prescribed burning of savannas | | 0.94 | 0.94 | | | | | 0.82 | | 0.82 | 0.82 | | | | |
| F. Field burning of agricultural residues | | 0.94 | 0.94 | | | | | 0.82 | | 0.82 | 0.82 | | | | |
| G. Liming | 0.98 | | | | | | | 0.94 | 0.94 | | | | | | |
| H. Urea application | 0.89 | | | | | | | 0.94 | 0.82 | | | | | | |
| I. Other | | | | | | | | | | | | | | | |
| 5. Waste | | | | | | | | | | | | | | | |
| A. Solid waste disposal | 0.89 | 0.89 | | | | | | 0.82 | | 0.73 | | | | | |
| B. Biological treatment of solid waste | | 0.73 | 0.73 | | | | | 0.94 | | 0.73 | 0.73 | | | | |
| C. Incineration and open burning of waste | 0.89 | 0.82 | 0.89 | | | | | 0.82 | 0.73 | 0.73 | 0.73 | | | | |
| D. Wastewater treatment and discharge | | 0.89 | 0.89 | | | | | 0.98 | | 0.82 | 0.82 | | | | |
| E. Other | | | | | | | | | | | | | | | |

Table 2

**Conservativeness factors for adjustments to emission estimates in the commitment year or recovery estimates in the base year (for sources in Annex A to the Kyoto Protocol)**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CO2 | CH4 | N2O | HFCs | PFCs | SF6 | NF3 | | CO2 | CH4 | N2O | HFCs | PFCs | SF6 | NF3 |
| 1. Energy | | | | | | | | | | | | | | | |
| A. Fuel combustion (sectoral approach) | | | | | | | | | | | | | | | |
| 1. Energy industries | 1.02 | 1.21 | 1.37 | | | | | 1.02 | 1.06 | 1.21 | 1.37 | | | | |
| 2. Manufacturing industries and construction | 1.02 | 1.21 | 1.37 | | | | | 1.06 | 1.06 | 1.37 | 1.37 | | | | |
| 3.a Domestic aviation and navigation | 1.02 | 1.12 | 1.21 | | | | | 1.21 | 1.21 | 1.37 | 1.37 | | | | |
| 3.b-c Road transport and railways | 1.02 | 1.12 | 1.21 | | | | | 1.06 | 1.06 | 1.12 | 1.37 | | | | |
| 4. Other sectors | 1.02 | 1.21 | 1.37 | | | | | 1.06 | 1.06 | 1.37 | 1.37 | | | | |
| 5. Other | 1.02 | 1.21 | 1.37 | | | | | 1.21 | 1.06 | 1.37 | 1.37 | | | | |
| Biomass (all fuel combustion sources) | | 1.21 | 1.21 | | | | | 1.21 | | 1.37 | 1.37 | | | | |
| Off-road vehicles | 1.02 | 1.37 | 1.37 | | | | | 1.12 | 1.21 | 1.37 | 1.37 | | | | |
| Fuel combustion (reference approach) | 1.02 | | | | | | | 1.02 | 1.02 | | | | | | |
| B. Fugitive emissions from fuels | | | | | | | | | | | | | | | |
| 1. Solid fuels | 1.37 | 1.37 | | | | | | 1.02 | 1.37 | 1.37 | | | | | |
| 2. Oil and natural gas | 1.37 | 1.37 | 1.37 | | | | | 1.02 | 1.37 | 1.37 | 1.37 | | | | |
| C. $CO_2$ Transport and storage | 1.21 | | | | | | | 1.02 | 1.37 | | | | | | |
| 2. Industrial processes and product use | | | | | | | | | | | | | | | |
| A. Mineral industry | 1.06 | | | | | | | 1.06 | 1.06 | | | | | | |
| B. Chemical industry | 1.02 | 1.37 | 1.12 | 1.12 | 1.21 | 1.21 | 1.21 | 1.06 | 1.06 | 1.37 | 1.12 | 1.12 | 1.37 | 1.37 | 1.37 |
| C. Metal industry | 1.02 | 1.21 | | 1.02 | 1.21 | 1.21 | | 1.02 | 1.06 | 1.37 | | 1.06 | 1.21 | 1.21 | |
| D. Non-energy products from fuels and solvent use | 1.12 | | | | | | | 1.06 | 1.21 | | | | | | |
| E. Electronics industry | | | | | 1.37 | 1.37 | 1.37 | 1.06 | | | | | 1.37 | 1.37 | 1.37 |
| F. Product uses as substitutes for Ozone Depleting Substances | | | | 1.21 | 1.21 | | | 1.21 | | | | 1.21 | 1.21 | | |
| G. Other product manufacture and use | | | 1.02 | | 1.12 | 1.12 | | 1.12 | | | 1.06 | | 1.21 | 1.21 | |
| H. Other | | | | | | | | | | | | | | | |
| 3. Agriculture | | | | | | | | | | | | | | | |
| A. Enteric fermentation | | 1.12 | | | | | | 1.02 | | 1.12 | | | | | |
| B. Manure management | | 1.12 | 1.21 | | | | | 1.02 | | 1.12 | 1.21 | | | | |
| C. Rice cultivation | | 1.12 | | | | | | 1.06 | | 1.12 | | | | | |
| D. Agricultural soils | | | 1.37 | | | | | 1.21 | | | 1.37 | | | | |
| E. Prescribed burning of savannas | | 1.06 | 1.06 | | | | | 1.21 | | 1.21 | 1.21 | | | | |
| F. Field burning of agricultural residues | | 1.06 | 1.06 | | | | | 1.21 | | 1.21 | 1.21 | | | | |
| G. Liming | 1.02 | | | | | | | 1.06 | 1.06 | | | | | | |
| H. Urea application | 1.12 | | | | | | | 1.06 | 1.21 | | | | | | |
| I. Other | | | | | | | | | | | | | | | |
| 5. Waste | | | | | | | | | | | | | | | |
| A. Solid waste disposal | 1.12 | 1.12 | | | | | | 1.21 | | 1.37 | | | | | |
| B. Biological treatment of solid waste | | 1.37 | 1.37 | | | | | 1.06 | | 1.37 | 1.37 | | | | |
| C. Incineration and open burning of waste | 1.12 | 1.21 | 1.12 | | | | | 1.21 | 1.37 | 1.37 | 1.37 | | | | |
| D. Wastewater treatment and discharge | | 1.12 | 1.12 | | | | | 1.02 | | 1.21 | 1.21 | | | | |
| E. Other | | | | | | | | | | | | | | | |

Table 3

**Conservativeness factors for net emissions for adjustments to the land use, land-use change and forestry sector during the initial review for the purpose of establishing a Party's assigned amount under Article 3, paragraphs 7 and 8, of the Kyoto Protocol[a]**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| 4. Land use, land-use change and forestry | | | | | | | | | | | | | | | |
| A.1. Forest land remaining forest land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | **0.89** | | | | | | | **0.98** | **0.89** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[b] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| A.2. Land converted to forest land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| B.1. Cropland land remaining cropland | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in dead organic matter | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[b] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| B.2. Land converted to crop land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[b] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| C.1. Grassland remaining grass land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | | | | | | | | | | | | | | | |
| (Root-to-shoot ratio) | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| (All other parameters) | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in dead organic matter | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[b] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| C.2. Land converted to grassland | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | | | | | | | | | | | | | | | |
| (Root-to-shoot ratio) | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| (All other parameters) | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead organic matter | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[b] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| D.1. Wetlands remaining wetlands | | | | | | | | | | | | | | | |
| D.1.1 Peat extraction remaining peat extraction | | | | | | | | | | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.82 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.82 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.73 | | 0.89 | | | | | 0.82 | 0.73 | | 0.73 | | | | |
| Net carbon stock change in soils: organic soils | 0.73 | | 0.89 | | | | | 0.82 | 0.73 | | 0.73 | | | | |
| D.1.2 Flooded land remaining flooded land[c] | | | | | | | | | | | | | | | |
| D.2. Land converted to wetlands | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Net carbon stock change in soils: organic soils | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| D.2.1 Lands converted to peat extraction | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 0.73 | | | | | | | 0.82 | 0.73 | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.82 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.82 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.73 | | 0.89 | | | | | 0.82 | 0.73 | | 0.73 | | | | |
| Net carbon stock change in soils: organic soils | 0.73 | | 0.89 | | | | | 0.82 | 0.73 | | 0.73 | | | | |
| D.2.2 Land converted to flooded land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 0.82 | | | | | | | 0.89 | 0.82 | | | | | | |
| Carbon stock change in dead organic matter | NA | | | | | | | 0.89 | | | | | | | |
| Carbon stock change in litter | NA | | | | | | | 0.89 | | | | | | | |
| Net carbon stock change in soils: mineral soils | NA | | | | | | | 0.89 | | | | | | | |
| Net carbon stock change in soils: organic soils | NA | | | | | | | 0.89 | | | | | | | |
| E.1. Settlements remaining settlements | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass[d] | 0.89 | | | | | | | 0.89 | 0.82 | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.98 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.98 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.82 | | | | | | | 0.98 | 0.82 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 0.82 | | | | | | | 0.98 | 0.82 | | | | | | |
| E.2. Land converted to settlements | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass[d] | 0.89 | | | | | | | 0.89 | 0.82 | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.98 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.98 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.82 | | | | | | | 0.98 | 0.82 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 0.82 | | | | | | | 0.94 | 0.82 | | | | | | |
| F.1. Other land remaining other land[c] | | | | | | | | | | | | | | | |
| F.2. Land converted to other land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 0.89 | | | | | | | 0.89 | 0.82 | | | | | | |
| Carbon stock change in dead organic matter | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Carbon stock change in litter | 0.73 | | | | | | | 0.94 | 0.73 | | | | | | |
| Net carbon stock change in soils: mineral soils | 0.82 | | | | | | | 0.94 | 0.82 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 0.82 | | | | | | | 0.94 | 0.82 | | | | | | |
| Cross-cutting categories | | | | | | | | | | | | | | | |
| Direct N2O emissions from N inputs to managed soils | | | 0.73 | | | | | 0.94 | | | 0.73 | | | | |
| Emissions and removals from drainage and rewetting and other management of organic and mineral soils | | | | | | | | | | | | | | | |
| Drained organic soils[e] | 0.73 | 0.73 | 0.73 | | | | | 0.94 | 0.73 | 0.73 | 0.73 | | | | |
| Rewetted organic soils | 0.73 | 0.73 | NA | | | | | 0.94 | 0.73 | 0.73 | | | | | |
| Direct N2O emissions from N mineralization/immobilization associated with loss/gain of soil organic matter | | | 0.73 | | | | | 0.94 | | | 0.73 | | | | |
| Indirect N2O emissions from managed soils | | | 0.73 | | | | | 0.94 | | | 0.73 | | | | |
| Biomass burning | 0.82 | 0.82 | 0.82 | | | | | 0.89 | 0.73 | 0.73 | 0.73 | | | | |
| Harvested wood products | 0.89 | | | | | | | 0.89 | 0.82 | | | | | | |

*Note*: Entries are marked "NA" because Parties are either not required to report this category in the greenhouse gas inventories or are not required to include it in their national totals.

*Abbreviation:* NA = Not applicable.

[a] Net emissions include net decreases in carbon stocks in individual carbon pools.

[b] In accordance with the Intergovernmental Panel on Climate Change (IPCC) *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (chapter 2), the uncertainty for drained organic soils is 20 per cent, and conservativeness factors are 0.94. The uncertainty for carbon dioxide CO2 emissions is higher than 150% for drained and rewetted inland organic soils (conservativeness factors of 0.73) as presented in this table under "emissions and removals from drainage and rewetting".

[c] No methodologies are available in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (hereinafter the 2006 IPCC Guidelines).

[d] In accordance with the 2006 IPCC Guidelines, the activity data for this subcategory (living biomass) is not land area but crown area or number of trees depending on the methodology.

[e] Information on $CO_2$ is also included here, although emissions/removals may be reported in the land use remaining in the same category and land converted to a new land use category.

Table 4

**Conservativeness factors for net removals for adjustments to the land use, land-use change and forestry sector during the initial review for the purpose of establishing a Party's assigned amount under Article 3, paragraphs 7 and 8, of the Kyoto Protocol[a]**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| 4. Land use, land-use change and forestry | | | | | | | | | | | | | | | |
| A.1. Forest land remaining forest land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.12 | | | | | | | 1.02 | 1.12 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| A.2. Land converted to forest land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| B.1. Cropland land remaining cropland | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| B.2. Land converted to crop land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| C.1. Grassland remaining grass land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | | | | | | | | | | | | | | | |
| (Root-to-shoot ratio) | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| (All other parameters) | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| C.2. Land converted to grassland | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | | | | | | | | | | | | | | | |
| (Root-to-shoot ratio) | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| (All other parameters) | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| D.1. Wetlands remaining wetlands | | | | | | | | | | | | | | | |
| D.1.1 Peat extraction remaining peat extraction | | | | | | | | | | | | | | | |
| Carbon stock change (carbon stock change) in dead organic matter | 1.37 | | | | | | | 1.21 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.21 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.37 | | 1.12 | | | | | 1.21 | 1.37 | | 1.37 | | | | |
| Net carbon stock change in soils: organic soils | 1.37 | | 1.12 | | | | | 1.21 | 1.37 | | 1.37 | | | | |
| D.1.2 Flooded land remaining flooded land[c] | | | | | | | | | | | | | | | |
| D.2. Land converted to wetlands | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net carbon stock change in soils: organic soils | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| D.2.1 Lands converted to peat extraction | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.37 | | | | | | | 1.21 | 1.37 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.21 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.21 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.37 | | 1.12 | | | | | 1.21 | 1.37 | | 1.37 | | | | |
| Net carbon stock change in soils: organic soils | 1.37 | | 1.12 | | | | | 1.21 | 1.37 | | 1.37 | | | | |
| D.2.2 Land converted to flooded land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.21 | | | | | | | 1.12 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | NA | | | | | | | 1.12 | | | | | | | |
| Carbon stock change in litter | NA | | | | | | | 1.12 | | | | | | | |
| Net carbon stock change in soils: mineral soils | NA | | | | | | | 1.12 | | | | | | | |
| Net carbon stock change in soils: organic soils | NA | | | | | | | 1.12 | | | | | | | |
| E.1. Settlements remaining settlements | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass[d] | 1.12 | | | | | | | 1.12 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| E.2. Land converted to settlements | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass[d] | 1.12 | | | | | | | 1.12 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| F.1. Other land remaining other land[c] | | | | | | | | | | | | | | | |
| F.2. Land converted to other land | | | | | | | | | | | | | | | |
| Carbon stock change in living biomass | 1.12 | | | | | | | 1.12 | 1.21 | | | | | | |
| Carbon stock change in dead organic matter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[b] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Cross-cutting categories | | | | | | | | | | | | | | | |
| Direct N2O emissions from N inputs to managed soils | | | 1.37 | | | | | 1.06 | | | 1.37 | | | | |
| Emissions and removals from drainage and rewetting and other management of organic and mineral soils | | | | | | | | | | | | | | | |
| Drained organic soils[e] | 1.37 | 1.37 | 1.37 | | | | | 1.06 | 1.37 | 1.37 | 1.37 | | | | |
| Rewetted organic soils | 1.37 | 1.37 | NA | | | | | 1.06 | 1.37 | 1.37 | | | | | |
| Direct N2O emissions from N mineralization/immobilization associated with loss/gain of soil organic matter | | | 1.37 | | | | | 1.06 | | | 1.37 | | | | |
| Indirect N2O emissions from managed soils | | | 1.37 | | | | | 1.06 | | | 1.37 | | | | |
| Biomass burning | 1.21 | 1.21 | 1.21 | | | | | 1.12 | 1.37 | 1.37 | 1.37 | | | | |
| Harvested wood products | 1.12 | | | | | | | 1.12 | 1.21 | | | | | | |

*Note*: Entries are marked "NA" because Parties are either not required to report this category in the greenhouse gas inventories or are not required to include it in their national totals.

*Abbreviations:* NA = Not applicable.

[a] Net removals include net decreases in carbon stocks in individual carbon pools.

[b] In accordance with the Intergovernmental Panel on Climate Change (IPCC) *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (chapter 2), the uncertainty for drained organic soils is 20%, and conservativeness factors are 1.06. The uncertainty for CO2 emissions is higher than 150% for drained and rewetted inland organic soils (conservativeness factors of 1.37) as presented in this table under "emissions and removals from drainage and rewetting".

[c] No methodologies are available in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter the 2006 IPCC Guidelines).

[d] In accordance with the 2006 IPCC Guidelines, the activity data for this subcategory (living biomass) is not land area, but crown area or number of trees depending on the methodology.

[e] Information on $CO_2$ is also included here, although emissions/removals may be reported in the land use remaining in the same category and land converted to a new land use category.

Table 5

**Conservativeness factors for adjustments to land use, land-use change and forestry activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol: Conservativeness factors for removals[a] in a year of the commitment period/emissions[a] in the base year[b]**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| Afforestation and reforestation (total) | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in below-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net carbon stock change in soils: organic soils[c] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| (Land subject to natural disturbances)[d] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in below-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| Deforestation (total)[e] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass[f] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in below-ground biomass | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in litter | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| Forest management (total)[g] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.89** | | | | | | | **0.98** | **0.89** | | | | | | |
| Carbon stock change in below-ground biomass | **0.89** | | | | | | | **0.98** | **0.89** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| (Newly established forest(CEF-ne))[g] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in below-ground biomass | **0.89** | | | | | | | **0.94** | **0.89** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock at harvesting[h] | | | | | | | | | | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| (Harvested and converted forest plantations (CEF-hc))[i] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in below-ground biomass | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in litter | **0.73** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| Forest management (Land subject to natural disturbances)[g,l] | **0.73** | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Carbon stock change in below-ground biomass | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in dead wood | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.89** | | | | | | | **0.94** | **0.82** | | | | | | |
| Harvest wood products | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| Technical correction[l] | | | | | | | | | | | | | | | |
| Cropland management[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in below-ground biomass | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Grazingland management[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in below-ground biomass | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Revegetation[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Carbon stock change in below-ground biomass | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.98** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.82** | | | | | | | **0.98** | **0.82** | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.82** | | | | | | | **0.94** | **0.82** | | | | | | |
| Wetland drainage and rewetting[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in below-ground biomass | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in litter | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Carbon stock change in dead wood | **0.73** | | | | | | | **0.94** | **0.73** | | | | | | |
| Net Carbon stock change in soils: mineral soils | **0.73** | **0.73** | **0.73** | | | | | **0.94** | **0.73** | **0.73** | **0.73** | | | | |
| Net Carbon stock change in soils: organic soils[c] | **0.73** | **0.73** | **NA** | | | | | **0.94** | **0.73** | **0.73** | | | | | |
| Harvest wood products | | | | | | | | | | | | | | | |
| From afforestation/reforestation | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| From deforestation | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| From forest management | **0.89** | | | | | | | **0.82** | **0.73** | | | | | | |
| Cross-cutting categories | | | | | | | | | | | | | | | |
| Direct and indirect N2O emissions from N fertilization | | | **0.73** | | | | | **0.94** | | | **0.73** | | | | |
| CH4 and N2O emissions from drained and rewetted organic soils[l] | | | | | | | | | | | | | | | |
| Drained organic soils[l] | **0.73** | **0.73** | **0.73** | | | | | **0.94** | **0.73** | **0.73** | **0.73** | | | | |
| Rewetted organic soils[l] | **0.73** | **0.73** | **NA** | | | | | **0.94** | **0.73** | **0.73** | | | | | |
| N2O emissions from N mineralization/immobilization due to carbon loss/gain associated with land-use conversions and management change in mineral soils | | | **0.73** | | | | | **0.94** | | | **0.73** | | | | |
| Greenhouse gas emissions from biomass burning (CO2, CH4, N2O) | **0.82** | **0.82** | **0.82** | | | | | **0.89** | **0.73** | **0.73** | **0.73** | | | | |

*Note*: Entries are marked "NA" because Parties are either not required to report this category in the greenhouse gas inventories or are not required to include it in their national totals.

*Abbreviations:* NA = Not applicable.

[a] Net emissions and removals include net increases and net decreases in carbon stocks in individual carbon pools (in a year during the commitment period and in the base year, respectively).

[b] For the base year, conservativeness factors given in this table apply to cropland management, grazing land management, wetland drainage and rewetting and revegetation under Article 3, paragraph 4, of the Kyoto Protocol.

[c] In accordance with the Intergovernmental Panel on Climate Change (IPCC) *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (chapter 2)*, the uncertainty for drained organic soils is 20%, and conservativeness factors are 0.94/1.06. The uncertainty for CO2 emissions is higher than 150% for drained and rewetted inland organic soils (conservativeness factors of 0.73/1.37) as presented in this table under "emissions and removals from drainage and rewetting".

[d] In cases where adjustments are calculated for other variables related to this category in common reporting format (CRF) table 4(KP-I)A.1.1, the conservativeness factor for the specific pool should be applied. This applies, in particular, to the areas subject to natural disturbances in the year that it was first reported: background levels, margins,

the emissions in the inventory that can be excluded and subsequent removals in the inventory year. For salvage logging, the conservativeness factors for harvest wood products should apply.

[e] In cases where adjustments are calculated for other variables related to this category in CRF table 4(KP-I)A.2, the conservativeness factor for the specific pool should be applied. This applies, in particular, to the areas subject to natural disturbances in the year that it was first reported: background levels, margins, the emissions in the inventory that can be excluded, and subsequent removals in inventory year. For salvage logging, the conservativeness factors for harvest wood products should apply.

[f] The same conservativeness factors apply for deforested land previously reported under afforestation/reforestation and forest management and subject to natural disturbances.

[g] In cases where adjustments are calculated for other variables related to this category in CRF tables 4(KP-I)B.1, 4(KP-I)B.1.1 and 4(KP-I)B.1.2, the conservativeness factor for the specific pool should be applied.

[h] For all these cases, assume the uncertainties for the specific pool that are being adjusted.

[i] The conservativeness factors for deforestation were assumed for this activity.

[j] In cases where adjustments are calculated for the technical correction, the conservativeness factor for the specific pool should be applied.

[k] The uncertainty for activity data for the base year is 50%, and the conservativeness factors are 0.89/1.12.

[l] Information on $CO_2$ is also included here, although emissions/removals may be reported in the land use remaining in the same category and land converted to a new land-use category.

Table 6

**Conservativeness factors for adjustments to land use, land-use change and forestry activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol: Conservativeness factors for removals[a] in a year during the commitment period/emissions[a] in the base year[b]**

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| Afforestation and reforestation (total) | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in below-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net carbon stock change in soils: organic soils[c] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| (Land subject to natural disturbances)[d] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in below-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| Deforestation (total)[e] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass[f] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in below-ground biomass | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| Forest management (total)[g] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.12 | | | | | | | 1.02 | 1.12 | | | | | | |
| Carbon stock change in below-ground biomass | 1.12 | | | | | | | 1.02 | 1.12 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| (Newly established forest(CEF-ne))[g] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in below-ground biomass | 1.12 | | | | | | | 1.06 | 1.12 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock at harvesting[h] | | | | | | | | | | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| (Harvested and converted forest plantations (CEF-hc))[i] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in below-ground biomass | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |

| | Emission factors | | | | | | | Activity data | Emission estimates | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ | | $CO_2$ | $CH_4$ | $N_2O$ | HFCs | PFCs | $SF_6$ | $NF_3$ |
| Forest management (Land subject to natural disturbances)[g,j] | 1.37 | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Carbon stock change in below-ground biomass | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in dead wood | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.12 | | | | | | | 1.06 | 1.21 | | | | | | |
| Harvest wood products | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| Technical correction[l] | | | | | | | | | | | | | | | |
| Cropland management[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in below-ground biomass | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Grazingland management[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in below-ground biomass | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Revegetation[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Carbon stock change in below-ground biomass | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.02 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.21 | | | | | | | 1.02 | 1.21 | | | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.21 | | | | | | | 1.06 | 1.21 | | | | | | |
| Wetland drainage and rewetting[k] | | | | | | | | | | | | | | | |
| Carbon stock change in above-ground biomass | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in below-ground biomass | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in litter | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Carbon stock change in dead wood | 1.37 | | | | | | | 1.06 | 1.37 | | | | | | |
| Net Carbon stock change in soils: mineral soils | 1.37 | 1.37 | 1.37 | | | | | 1.06 | 1.37 | 1.37 | 1.37 | | | | |
| Net Carbon stock change in soils: organic soils[c] | 1.37 | 1.37 | NA | | | | | 1.06 | 1.37 | 1.37 | | | | | |
| Harvest wood products | | | | | | | | | | | | | | | |
| From afforestation/reforestation | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| From deforestation | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| From forest management | 1.12 | | | | | | | 1.21 | 1.37 | | | | | | |
| Cross-cutting categories | | | | | | | | | | | | | | | |
| Direct and indirect N2O emissions from N fertilization | | | 1.37 | | | | | 1.06 | | | 1.37 | | | | |
| CH4 and N2O emissions from drained and rewetted organic soils[l] | | | | | | | | | | | | | | | |
| Drained organic soils[l] | 1.37 | 1.37 | 1.37 | | | | | 1.06 | 1.37 | 1.37 | 1.37 | | | | |
| Rewetted organic soils[l] | 1.37 | 1.37 | NA | | | | | 1.06 | 1.37 | 1.37 | | | | | |
| N2O emissions from N mineralization/immobilization due to carbon loss/gain associated with land-use conversions and management change in mineral soils | | | 1.37 | | | | | 1.06 | | | 1.37 | | | | |
| Greenhouse gas emissions from biomass burning (CO2, CH4, N2O) | 1.21 | 1.21 | 1.21 | | | | | 1.12 | 1.37 | 1.37 | 1.37 | | | | |

*Note*: Entries are marked "NA" because Parties are either not required to report this category in the greenhouse gas inventories or are not required to include it in their national totals.

*Abbreviations:* NA = Not applicable.

[a] Net missions and removals include net increases and net decreases in carbon stocks in individual carbon pools (in a year during the commitment period and in the base year, respectively).

[b] For the base year, conservativeness factors given in this table apply to cropland management, grazing land management, wetland drainage and rewetting, and revegetation under Article 3, paragraph 4, of the Kyoto Protocol.

[c] In cases where adjustments are calculated for other variables related to this category in common reporting format (CRF) table 4(KP-I)A.1.1, the conservativeness factor for the specific pool should be applied. This applies, in particular, to the areas subject to natural disturbances in the year that it was first reported: background levels, margins, the emissions in the inventory that can be excluded and subsequent removals in the inventory year. For salvage logging the conservativeness factors for harvest wood products should apply.

[d] The same conservativeness factors apply for deforested land previously reported under afforestation/reforestation and forest management and subject to natural disturbances.

[e] In case where adjustments are calculated for other variables related to this category in CRF table 4(KP-I)A.2, the conservativeness factor for the specific pool should be applied. This applies, in particular, to the areas subject to natural

disturbances in the year that it was first reported: background levels, margins, the emissions in the inventory that can be excluded, and subsequent removals in the inventory year. For salvage logging the conservativeness factors for harvest wood products should apply.

[f] In accordance with the Intergovernmental Panel on Climate Change (IPCC) *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (chapter 2)*, the uncertainty for drained organic soils is 20%, and conservativeness factors are 0.94/1.06. The uncertainty for $CO_2$ emissions is higher than 150% for drained and rewetted inland organic soils (conservativeness factors of 0.73/1.37) as presented in this table under "emissions and removals from drainage and rewetting".

[g] In cases where adjustments are calculated for other variables related to this category in CRF table 4(KP-I)B.1, the conservativeness factor for the specific pool should be applied.

[h] For all these cases, assume the uncertainties for the specific pool that are being adjusted.

[i] The conservativeness factors for deforestation were assumed for this activity. In cases where adjustments are calculated for other variables related to this category in CRF table 4(KP-I)B.1, the conservativeness factor for the specific pool should be applied.

[j] In case that adjustments are calculated for the technical correction, the conservativeness factor for the specific pool should be applied.

[k] The uncertainty for activity data for the base year is 50%, and the conservativeness factors are 0.89/1.12.

[l] Information on $CO_2$ is also included here, although emissions/removals may be reported in the land use remaining in the same category and land converted to a new land-use category.