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SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
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Agenda item 5 (b)
Methodological issues under the Convention
Common reporting format for land use, land-use change and forestry

Tables of the common reporting format for land use, land-use change and forestry

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 twenty-third session, decided to recommend the following draft decision for adoption by the Conference of the Parties at its eleventh session:

Draft decision -/CP.11
Tables of the common reporting format for land use, land-use change and forestry

The Conference of the Parties,

Recalling Article 4, paragraph 1, Article 10, paragraph 2, and Article 12, paragraph 1, of the Convention,

Further recalling its decisions 18/CP.8 and 13/CP.9,

1. *Adopts* the tables of the common reporting format and their notes, contained in the annex to this decision, for the purpose of submission of annual inventory information on land use, land-use change and forestry;

2. *Decides* that each Party included in Annex I to the Convention shall use these tables for the purpose of submission of the annual inventory due in and after 2007;

3. *Requests* the secretariat to incorporate these tables and their notes and the technical modifications resulting from decision 13/CP.9 into the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories", adopted by decision 18/CP.8, and to prepare, before the twenty-fifth session of the SBSTA (November 2006), a single document containing updated UNFCCC reporting guidelines on annual inventories.

ANNEX

Tables of the common reporting format and their notes

Notes on the common reporting format

1. The common reporting format (CRF) is an integral part of the national inventory submission. It is designed to ensure that Parties included in Annex I to the Convention (Annex I Parties) report quantitative data in a standardized format, and to facilitate the comparison of inventory data across Annex I Parties. Details regarding any information of a non-quantitative character should be provided in the national inventory report (NIR).

2. The information provided in the CRF is aimed at enhancing the comparability and transparency of inventories by facilitating, inter alia, activity data and implied emission factor (IEF) or carbon-stock-change factor cross-comparisons among Annex I Parties, and easy identification of possible mistakes, misunderstandings and omissions in the inventories.

3. As stated in these reporting guidelines, the CRF consists of summary report and sectoral report tables from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC Guidelines) plus newly developed sectoral background data tables and other tables that are consistent with the IPCC Guidelines and the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*.

4. Some sectoral background tables call for the calculation of IEFs or carbon-stock-change factors. These are top-down ratios between the Annex I Party's emissions or removals estimate and aggregate activity data. The IEFs or carbon-stock-change factors are intended solely for purposes of comparison. They will not necessarily be the emission /removals factors actually used in the original emissions estimate, unless this was a simple multiplication based on the same aggregate activity data used to calculate the IEF or the carbon-stock-change factors.

5. Consistent with the Revised 1996 IPCC Guidelines, memo items, such as emissions estimates from international marine and aviation bunker fuels, CO_2 emissions from biomass and emissions from multilateral operations, should be reported in the appropriate tables, but not included in the national totals.

6. Annex I Parties should use the documentation boxes below the tables to provide specific references to the relevant sections of the NIR where full details for a given sector/category are to be provided.

7. Annex I Parties should fill in all the cells calling for emissions or removals estimates, activity data, or emission factors. Notation keys, as described in paragraph 28 of the reporting guidelines, should be used where data have not been entered.

8. In the sectoral background tables, below the category "Other", an empty row indicates that country-specific categories may be added. These categories will automatically be included in the sectoral report tables.

9. Annex I Parties should complete the data in the additional information boxes. Where the information called for is inappropriate because of the methodological tier used by the Annex I Party, the corresponding cells should be completed using the indicator "NA".

10. Neither the order nor the notations of the columns, rows or cells should be changed in the tables as this will complicate data compilation. Any additions to the existing disaggregation of source and sink categories should be provided under "Other", if appropriate.

11. To simplify the layout of the tables and indicate clearly the specific reporting requirements for each table, only those cells that require entries by Annex I Parties have been left blank. Slight shading in cells indicates that they are expected to be filled in by software to be provided by the secretariat. However, Annex I Parties that choose not to use any software for completing the CRF would have to provide entries in those cells as well.

12. As in the current CRF, dark shading has been used in those cells that are not expected to contain any information.

13. Carbon gains and losses should be listed separately in the land use, land-use change and forestry (LULUCF) sectoral background data tables except in cases where, due to the methods used, it may be technically impossible to separate information on gains and losses.

14. Consistent with paragraph 18 of these reporting guidelines, each Annex I Party shall communicate a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol.

15. According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (–) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and by changing the sign for net CO_2 removals to be negative (–) and for net CO_2 emissions to be positive (+).

Tables of the common reporting format for land use, land-use change and forestry and related tables (tables Summary 2, table 8 (a) (recalculations) and table 10 (trends))

TABLE 5 SECTORAL REPORT FOR LAND USE, LAND-USE CHANGE AND FORESTRY
(Sheet 1 of 1)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO_2 emissions/ removals[1], [2]	CH_4 [2]	N_2O [2]	NO_X	CO	NMVOC
	(Gg)					
Total Land-Use Categories						
A. Forest Land						
1. Forest Land remaining Forest Land						
2. Land converted to Forest Land						
B. Cropland						
1. Cropland remaining Cropland						
2. Land converted to Cropland						
C. Grassland						
1. Grassland remaining Grassland						
2. Land converted to Grassland						
D. Wetlands						
1. Wetlands remaining Wetlands [3]						
2. Land converted to Wetlands						
E. Settlements						
1. Settlements remaining Settlements [3]						
2. Land converted to Settlements						
F. Other Land						
1. Other Land remaining Other Land [4]						
2. Land converted to Other Land						
G. Other *(please specify)* [5]						
Harvested Wood Products [6]						
Information items[7]						
Forest Land converted to other Land-Use Categories						
Grassland converted to other Land-Use Categories						

(1) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) For each land-use category and sub-category, this table sums net CO_2 emissions and removals shown in tables 5.A to 5.F, and the CO_2, CH_4 and N_2O emissions showing in tables 5(I) to 5(V).

(3) Parties may decide not to prepare estimates for these categories contained in appendices 3a.3 and 3a.4 of the IPCC good practice guidance for LULUCF, although they may do so if they wish.

(4) This land-use category is to allow the total of identified land area to match the national area.

(5) The total for category 5.G Other includes items specified only under category 5.G in this table as well as sources and sinks specified in category 5.G in tables 5(I) to 5(V).

(6) Parties may decide not to prepare estimates for this category contained in appendix 3a.1 of the IPCC good practice guidance for LULUCF, although they may do so if they wish and report in this row.

(7) These items are listed for information only and will not be added to the totals, because they are already included in subcategories 5.A.2 to 5.F.2.

Documentation box:

• Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

• If estimates are reported under 5.G Other, use this documentation box to provide information regarding activities covered under this category and to provide reference to the section in the NIR where background information can be found.

TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY

Forest Land

(Sheet 1 of 1)

Year

Submission

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA		IMPLIED CARBON-STOCK-CHANGE FACTORS						CHANGES IN CARBON STOCK						Net CO_2 emissions/ removals (7) (10)
Land-Use Category	Sub-division(1)	Area(6) (kha)	Area of organic soil(6) (kha)	Carbon stock change in living biomass per area (2) (3)			Net carbon stock change in dead organic matter per area(3)	Net carbon stock change in soils per area (3)		Carbon stock change in living biomass(2) (3)			Net carbon stock change in dead organic matter(3)	Net carbon stock change in soils (3) (9)		
				Gains	Losses	Net change		Mineral soils (8)	Organic soils	Gains	Losses	Net change		Mineral soils	Organic soils (5)	
				(Mg C/ha)						(Gg C)						(Gg)
A. Total Forest Land																
1. Forest Land remaining Forest Land																
2. Land converted to Forest Land(4)																
2.1 Cropland converted to Forest Land																
2.2 Grassland converted to Forest Land																
2.3 Wetlands converted to Forest Land																
2.4 Settlements converted to Forest Land																
2.5 Other Land converted to Forest Land																

(1) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(2) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(3) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(4) A Party may report aggregate estimates for all conversions of land to forest land when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for grassland conversion should be provided in table 5 as an information item.

(5) The value reported for organic soils is estimated as a flux. For consistency with other entries in this column, these fluxes should be expressed in the unit required in this column, i.e. in Gg C.

(6) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For Lands converted to Forest Lands report the cumulative area remaining in the category in the reporting year.

(7) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions or removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(8) Implied carbon-stock-change factors for mineral soils are calculated by dividing the C stock change estimate for mineral soil by the difference between the area and the area of organic soil.

(9) When Parties are estimating fluxes for organic soils but cannot separate these fluxes from mineral soils, these fluxes should be reported under mineral soils.

(10) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY

Year

Cropland

Submission

(Sheet 1 of 1)

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA		IMPLIED CARBON-STOCK-CHANGE FACTORS						CHANGES IN CARBON STOCK						Net CO_2 emissions/ removals (9) (12)
				Carbon stock change in living biomass per area (2) (3)			Net carbon stock change in dead organic matter per area(3)	Net carbon stock change in soils per area (3)		Carbon stock change in living biomass(2), (3), (4)			Net carbon stock change in dead organic matter(3) (5)	Net carbon stock change in soils (3)(11)		
Land-Use Category	Sub-division (1)	Area(8) (kha)	Area of organic soil (kha)(8)	Gains	Losses	Net change		Mineral soils (10)	Organic soils	Gains	Losses	Net change		Mineral soils	Organic soils (7)	
				(Mg C/ha)						(Gg C)						(Gg)
B. Total Cropland																
1. Cropland remaining Cropland																
2. Land converted to Cropland(6)																
2.1 Forest Land converted to Cropland																
2.2 Grassland converted to Cropland																
2.3 Wetlands converted to Cropland																
2.4 Settlements converted to Cropland																
2.5 Other Land converted to Cropland																

(1) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(2) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(3) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(4) For category 5.B.1 Cropland remaining Cropland this column only includes changes in perennial woody biomass.

(5) No reporting on dead organic matter pools is required for category 5.B.1. Cropland remaining Cropland.

(6) A Party may report aggregate estimates for all land conversions to cropland, when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for forest land and grassland conversion should be provided in table 5 as an information item.

(7) The value reported for organic soils is estimated as a flux. For consistency with other entries in this column, these fluxes should be expressed in the unit required in this column, i.e. in Gg C.

(8) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For Lands converted to Croplands report the cumulative area remaining in the category in the reporting year.

(9) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions or removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(10) Implied carbon-stock-change factors for mineral soils are calculated by dividing the C stock change estimate for mineral soil by the difference between the area and the area of organic soil.

(11) When Parties are estimating fluxes for organic soils but cannot separate these fluxes from mineral soils, these fluxes should be reported under mineral soils.

(12) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY

Year

Grassland

Submission

(Sheet 1 of 1)

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA		IMPLIED CARBON-STOCK-CHANGE FACTORS						CHANGES IN CARBON STOCK						Net CO_2 emissions/ removals (9) (12)
Land-Use Category	Sub-division (1)	Area (8) (kha)	Area of organic soil (kha) (8)	Carbon stock change in living biomass per area (2) (3)			Net carbon stock change in dead organic matter per area (2)	Net carbon stock change in soils per area (2)		Carbon stock change in living biomass (2) (3) (4)			Net carbon stock change in dead organic matter (2) (5)	Net carbon stock change in soils (2) (11)		
				Gains	Losses	Net change		Mineral soils (10)	Organic soils	Gains	Losses	Net change		Mineral soils	Organic soils (7)	
				(Mg C/ha)						(Gg C)						(Gg)
C. Total Grassland																
1. Grassland remaining Grassland																
2. Land converted to Grassland (6)																
2.1 Forest Land converted to Grassland																
2.2 Cropland converted to Grassland																
2.3 Wetlands converted to Grassland																
2.4 Settlements converted to Grassland																
2.5 Other Land converted to Grassland																

(1) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(2) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(3) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(4) For category 5.C.1 Grassland remaining Grassland this column only includes changes in perennial woody biomass.

(5) No reporting on dead organic matter pools is required for category 5.C.1 Grassland remaining Grassland.

(6) A Party may report aggregate estimates for all land conversions to grassland, when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for forest land conversion should be provided in table 5 as an information item.

(7) The value reported for organic soils is estimated as a flux. For consistency with other entries in this column, these fluxes should be expressed in the unit required in this column, i.e. in Gg C.

(8) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For lands converted to Grasslands report the cumulative area remaining in the category in the reporting year.

(9) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(10) Implied carbon-stock-change factors for mineral soils are calculated by dividing the C stock change estimate for mineral soil by the difference between the area and the area of organic soil.

(11) When Parties are estimating fluxes for organic soils but cannot separate these fluxes from mineral soils, these fluxes should be reported under mineral soils.

(12) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box: Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year

Wetlands Submission

(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED CARBON-STOCK-CHANGE FACTORS					CHANGES IN CARBON STOCK					Net CO_2 emissions/ removals [7] [8]
Land-Use Category	Sub-division [2]	Area [6] (kha)	Carbon stock change in living biomass per area [3] [4]			Net carbon stock change in dead organic matter per area [4]	Net carbon stock change in soils per area [4]	Carbon stock change in living biomass [3] [4]			Net carbon stock change in dead organic matter [4]	Net carbon stock change in soils [4]	
			Gains	Losses	Net change			Gains	Losses	Net change			
			(Mg C/ha)					(Gg C)					(Gg)
D. Total Wetlands													
1. Wetlands remaining Wetlands [1]													
2. Land converted to Wetlands [5]													
2.1 Forest Land converted to Wetlands													
2.2 Cropland converted to Wetlands													
2.3 Grassland converted to Wetlands													
2.4 Settlements converted to Wetlands													
2.5 Other Land converted to Wetlands													

(1) Parties may decide not to prepare estimates for this category contained in appendix 3a.3 of the IPCC good practice guidance for LULUCF, although they may do so if they wish.

(2) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(3) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(4) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(5) A Party may report aggregate estimates for all land conversions to wetlands, when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for forest land and grassland conversion should be provided in table 5 as an information item.

(6) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For lands converted to Wetlands report the cumulative area remaining in the category in the reporting year.

(7) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions or removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(8) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5.E SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY

Settlements

(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED CARBON-STOCK-CHANGE FACTORS					CHANGES IN CARBON STOCK					Net CO_2 emissions/ removals [8]
Land-Use Category	Sub-division [2]	Area[7] (kha)	Carbon stock change in living biomass per area [3], [4]			Net carbon stock change in dead organic matter per area[4]	Net carbon stock change in soils per area [4]	Carbon stock change in living biomass[3], [4] [5]			Net carbon stock change in dead organic matter[4]	Net carbon stock change in soils [4]	
			Gains	Losses	Net change			Gains	Losses	Net change			
			(Mg C/ha)					(Gg C)					(Gg)
E. Total Settlements													
1. Settlements remaining Settlements [1]													
2. Land converted to Settlements[6]													
2.1 Forest Land converted to Settlements													
2.2 Cropland converted to Settlements													
2.3 Grassland converted to Settlements													
2.4 Wetlands converted to Settlements													
2.5 Other Land converted to Settlements													

(1) Parties may decide not to prepare estimates for this category contained in appendix 3a.4 of the IPCC good practice guidance for LULUCF, although they may do so if they wish.

(2) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(3) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(4) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(5) For category 5.E.1 Settlements remaining Settlements this column only includes changes in perennial woody biomass.

(6) A Party may report aggregate estimates for all land conversions to settlements, when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for forest land and grassland conversion should be provided in table 5 as an information item.

(7) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For lands converted to Settlements report the cumulative area remaining in the category in the reporting year.

(8) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions or removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(9) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5.F SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY

Other land

(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED CARBON-STOCK-CHANGE FACTORS					CHANGES IN CARBON STOCK					Net CO_2 emissions/ removals [7] [8]
Land-Use Category	Sub-division [2]	Area [6] (kha)	Carbon stock change in living biomass per area [3] [4]			Net carbon stock change in dead organic matter per area [4]	Net carbon stock change in soils per area [4]	Carbon stock change in living biomass [3], [4]			Net carbon stock change in dead organic matter [4]	Net carbon stock change in soils [4]	
			Gains	Losses	Net change			Gains	Losses	Net change			
			(Mg C/ha)					(Gg C)					(Gg)
F. Total Other Land													
1. Other Land remaining Other Land [1]													
2. Land converted to Other Land [5]													
2.1 Forest Land converted to Other Land													
2.2 Cropland converted to Other Land													
2.3 Grassland converted to Other Land													
2.4 Wetlands converted to Other Land													
2.5 Settlements converted to Other Land													

(1) This land-use category is to allow the total of identified land area to match the national area.

(2) Land categories may be further divided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone or national land classification.

(3) Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

(4) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

(5) A Party may report aggregate estimates for all land conversions to other land, when data are not available to report them separately. A Party should specify in the documentation box which types of land conversion are included. Separate estimates for forest land and grassland conversion should be provided in table 5 as an information item.

(6) The total area of the subcategories, in accordance with the sub-division used, should be entered here. For lands converted to Other land report the cumulative area remaining in the category in the reporting year.

(7) According to the Revised 1996 IPCC Guidelines, for the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+). Net changes in carbon stocks are converted to CO_2 by multiplying C by 44/12 and changing the sign for net CO_2 removals to be negative (-) and for net CO_2 emissions to be positive (+). Note that carbon stock changes in a single pool are not necessarily equal to emissions or removals, because some carbon stock changes result from carbon transfers among pools rather than exchanges with the atmosphere.

(8) Where Parties directly estimate emissions and removals rather than carbon stock changes, they may report emissions directly in this column and use notation keys in the stock change columns.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5 (I) SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year
Direct N_2O emissions from N fertilization[(1)] of Forest Land and Other Submission
(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	EMISSIONS [(6)]
Land-Use Category [(2)]	**Total amount of fertilizer applied (Gg N/yr)**	**N_2O-N emissions per unit of fertilizer (kg N_2O-N/kg N)[(3)]**	**N_2O (Gg)**
Total for all Land Use Categories			
A. Forest Land [(4), (5)]			
1. Forest Land remaining Forest Land			
2. Land converted to Forest Land			
G. Other *(please specify)*			

[(1)] Direct N_2O emissions from fertilization are estimated using equations 3.2.17 and 3.2.18 of the IPCC good practice guidance for LULUCF based on the amounts of fertilizers applied to forest land.

[(2)] N_2O emissions from N fertilization of cropland and grassland are reported in the Agriculture sector; therefore only forest land is included in this table.

[(3)] In the calculation of the implied emission factor, N_2O emissions are converted to N_2O-N by multiplying by 28/44.

[(4)] If a Party is not able to separate the fertilizer applied to forest land from that applied to agriculture, it may report all N_2O emissions from fertilization in the Agriculture sector. This should be explicitly indicated in the documentation box.

[(5)] A Party may report aggregate estimates for all N fertilization on forest land in the category Forest Land remaining Forest Land when data are not available to report Forest Land remaining Forest Land and Land converted to Forest Land separately.

[(6)] Emissions are reported with a positive sign.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5 (II) SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year

Non-CO_2 emissions from drainage of soils and wetlands (1) Submission
(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS		EMISSIONS [5]	
Land-Use Category [2]	Sub-division [3]	Area (kha)	N_2O-N per area [4] (kg N_2O-N/ha)	CH_4 per area (kg CH_4/ha)	N_2O (Gg)	CH_4 (Gg)
Total all Land-Use Categories						
A. Forest Land [6]						
Organic Soil						
Mineral Soil						
D. Wetlands						
Peatland [7]						
Flooded Lands [7]						
G. Other (please specify)						

[1] Parties may decide not to prepare estimates for these categories contained in appendices 3a.2 and 3a.3 of the IPCC good practice guidance for LULUCF, although they may do so if they wish.

[2] N_2O emissions from drained cropland and grassland soils are covered in the Agriculture tables of the CRF under Cultivation of Histosols.

[3] A Party should report further disaggregations of drained soils corresponding to the methods used. Tier 1 disaggregates soils into "nutrient rich" and "nutrient poor" areas, whereas higher-tier methods can further disaggregate into different peatland types, soil fertility or tree species.

[4] In the calculation of the implied emission factor, N_2O emissions are converted to N_2O-N by multiplying by 28/44.

[5] Emissions are reported with a positive sign.

[6] In table 5, these emissions will be added to 5.A.1 Forest Land remaining Forest Land.

[7] In table 5, these emissions will be added to 5.D.2 Land converted to Wetlands.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5 (III) SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year

N_2O emissions from disturbance associated with land-use conversion to cropland [1] Submission

(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	EMISSIONS [7]
Land-Use Category [2]	Land area converted (kha)	N_2O-N emissions per area converted[3] (kg N_2O-N/ha)	N_2O (Gg)
Total all Land-Use Categories [4]			
B. Cropland			
2. Lands converted to Cropland [5]			
Organic Soils			
Mineral Soils			
2.1 Forest Land converted to Cropland			
Organic Soils			
Mineral Soils			
2.2 Grassland converted to Cropland			
Organic Soils			
Mineral Soils			
2.3 Wetlands converted to Cropland [6]			
Organic Soils			
Mineral Soils			
2.5 Other Land converted to Cropland			
Organic Soils			
Mineral Soils			
G. Other *(please specify)*			

[1] Methodologies for N_2O emissions from disturbance associated with land-use conversion are based on equations 3.3.14 and 3.3.15 of the IPCC good practice guidance for LULUCF. N_2O emissions from fertilization in the preceding land use and new land use should not be reported.

[2] According to the IPCC good practice guidance for LULUCF N_2O emissions from disturbance of soils are only relevant for land conversions to cropland. N_2O emissions from Cropland remaining Cropland are included in the Agriculture sector of the good practice guidance. The good practice guidance provides methodologies only for mineral soils.

[3] In the calculation of the implied emission factor, N_2O emissions are converted to N_2O-N by multiplying by 28/44.

[4] Parties can separate between organic and mineral soils, if they have data available.

[5] If activity data cannot be disaggregated to all initial land uses, Parties may report some initial land uses aggregated under Other Land converted to Cropland (indicate in the documentation box what this category includes).

[6] Parties should avoid double counting with N_2O emissions from drainage and from cultivation of organic soils reported in Agriculture under Cultivation of Histosols.

[7] Emissions are reported with a positive sign.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF Sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5 (IV) SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year

CO_2 emissions from agricultural lime application [1] Submission

(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	EMISSIONS [6]
Land-Use Category	**Total amount of lime applied (Mg/yr)**	**CO_2-C per unit of lime [7] (Mg CO2-C /Mg)**	**CO_2 (Gg)**
Total all Land-Use Categories [2], [3], [4]			
B. Cropland [4] [8]			
Limestone $CaCO_3$			
Dolomite $CaMg(CO_3)_2$			
C. Grassland [4][9]			
Limestone $CaCO_3$			
Dolomite $CaMg(CO_3)_2$			
G. Other *(please specify)* [4, 5]			

[1] CO_2 emissions from agricultural lime application are addressed in equation 3.3.6 and 3.4.11 of the IPCC good practice guidance for LULUCF.

[2] If Parties are not able to separate liming application for different land-use categories, they should include liming for all land-use categories in the category 5.G Other.

[3] Parties that are able to provide data for lime application to forest land should provide this information under 5.G Other and specify in the documentation box that forest land application is included in this category.

[4] A Party may report aggregate estimates for total lime applications when data are not available for limestone and dolomite.

[5] If a Party has data broken down to limestone and dolomite at national level, it can report these data under 5.G Other.

[6] Emissions are reported with a positive sign.

[7] The implied emission factor is expressed in unit of carbon to faciliate comparison with published emission factors

[8] In table 5, these CO_2 emissions will be added to 5.B.1 Cropland remaining Cropland.

[9] In table 5, these CO_2 emissions will be added to 5.C.1 Grassland remaining Grassland.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

TABLE 5 (V) SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY Year
Biomass Burning [1] Submission
(Sheet 1 of 1) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTOR			EMISSIONS [9]		
	Description[3]	Unit	Values	CO_2	CH_4	N_2O	CO_2 [4]	CH_4	N_2O
Land-Use Category[2]		(ha or kg dm)			(Mg/activity data unit)			(Gg)	
Total for Land-Use Categories									
A. Forest Land									
1. Forest land remaining Forest Land									
Controlled Burning									
Wildfires									
2. Land converted to Forest Land									
Controlled Burning									
Wildfires									
B. Cropland									
1. Cropland remaining Cropland[5]									
Controlled Burning									
Wildfires									
2. Land converted to Cropland									
Controlled Burning									
Wildfires									
2.1. Forest Land converted to Cropland									
Controlled Burning									
Wildfires									
C. Grassland									
1. Grassland remaining grassland [6]									
Controlled Burning									
Wildfires									
2. Land converted to Grassland									
Controlled Burning									
Wildfires									
2.1. Forest Land converted to Grassland									
Controlled Burning									
Wildfires									

D. Wetlands									
1. Wetlands remaining Wetlands [7]									
Controlled Burning									
Wildfires									
2. Land converted to Wetlands									
Controlled Burning									
Wildfires									
2.1. Forest Land converted to Wetlands									
Controlled Burning									
Wildfires									
E. Settlements [7]									
F. Other Land [8]									
G. Other (please specify)									

[1] Methodological guidance on burning can be found in sections 3.2.1.4 and 3.4.1.3 of the IPCC good practice guidance for LULUCF.

[2] Parties should report both controlled/prescribed burning and wildfires emissions, where appropriate, in a separate manner.

[3] For each category activity data should be selected between area burned or biomass burned. Units for area will be ha and for biomass burned kg dm. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[4] If CO_2 emissions from biomass burning are not already included in tables 5.A - 5.F, they should be reported here. This should be clearly documented in the documentation box and in the NIR. Double counting should be avoided. Parties that include all carbon stock changes in the carbon stock tables (5.A, 5.B, 5.C, 5.D, 5.E and 5.F), should report IE (included elsewhere) in this column.

[5] In-situ above-ground woody biomass burning is reported here. Agricultural residue burning is reported in the Agriculture sector

[6] Includes only emissions from controlled biomass burning on grasslands outside the tropics (prescribed savanna burning is reported under the Agriculture sector).

[7] Parties may decide not to prepare estimates for these categories contained in appendices 3a.2, 3a.3 and 3a.4 of the IPCC good practice guidance for LULUCF, although they may do so if they wish.

[8] This land-use category is to allow the total of identified land area to match the national area.

[9] Emissions are reported with a positive sign.

Documentation box:
Parties should provide detailed explanations on the Land Use, Land-Use Change and Forestry sector in Chapter 7: Land Use, Land-Use Change and Forestry (CRF sector 5) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

SUMMARY 2 SUMMARY REPORT FOR CO_2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 [1]	CH_4	N_2O	HFCs [2]	PFCs [2]	SF_6 [2]	Total
	CO_2 equivalent (Gg)						
Total (Net Emissions) [1]							
1. Energy							
A. Fuel Combustion (Sectoral Approach)							
1. Energy Industries							
2. Manufacturing Industries and Construction							
3. Transport							
4. Other Sectors							
5. Other							
B. Fugitive Emissions from Fuels							
1. Solid Fuels							
2. Oil and Natural Gas							
2. Industrial Processes							
A. Mineral Products							
B. Chemical Industry							
C. Metal Production							
D. Other Production							
E. Production of Halocarbons and SF_6							
F. Consumption of Halocarbons and SF_6 [2]							
G. Other							
3. Solvent and Other Product Use							
4. Agriculture							
A. Enteric Fermentation							
B. Manure Management							
C. Rice Cultivation							
D. Agricultural Soils [3]							
E. Prescribed Burning of Savannas							
F. Field Burning of Agricultural Residues							
G. Other							

5. Land Use, Land-Use Change and Forestry[1]							
A. Forest Land							
B. Cropland							
C. Grassland							
D. Wetlands							
E. Settlements							
F. Other Land							
G. Other							
6. Waste							
A. Solid Waste Disposal on Land							
B. Waste-water Handling							
C. Waste Incineration							
D. Other							
7. Other ***(as specified in Summary 1.A)***							

Memo Items: [4]							
International Bunkers							
Aviation							
Marine							
Multilateral Operations							
CO_2 Emissions from Biomass							

Total CO_2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	
Total CO_2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	

[1] For CO_2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

[2] Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

[3] Parties which previously reported CO_2 from soils in the Agriculture sector should note this in the NIR.

[4] See footnote 8 to table Summary 1.A.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Year

(Sheet 1 of 4) Recalculated year:

Submission

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2						CH_4						N_2O					
		Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]
		CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)		
Total National Emissions and Removals																			
1. Energy																			
1.A.	Fuel Combustion Activities																		
1.A.1.	Energy Industries																		
1.A.2.	Manufacturing Industries and Construction																		
1.A.3.	Transport																		
1.A.4.	Other Sectors																		
1.A.5.	Other																		
1.B.	Fugitive Emissions from Fuels																		
1.B.1.	Solid fuel																		
1.B.2.	Oil and Natural Gas																		
2. Industrial Processes																			
2.A.	Mineral Products																		
2.B.	Chemical Industry																		
2.C.	Metal Production																		
2.D.	Other Production																		
2.G.	Other																		

Note: All footnotes for this table are given at the end of the table on sheet 4.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

(Sheet 2 of 4) Recalculated year:

Year

Submission

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2						CH_4						N_2O					
		Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference [1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]
		CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)		
Total National Emissions and Removals																			
3. Solvent and Other Product Use																			
4. Agriculture																			
4.A.	Enteric Fermentation																		
4.B.	Manure Management																		
4.C.	Rice Cultivation																		
4.D.	Agricultural Soils [3]																		
4.E.	Prescribed Burning of Savannas																		
4.F.	Field Burning of Agricultural Residues																		
4.G.	Other																		
5. Land Use, Land-Use Change and Forestry (net)[4]																			
5.A.	Forest Land																		
5.B.	Cropland																		
5.C.	Grassland																		
5.D.	Wetlands																		
5.E.	Settlements																		
5.F.	Other Land																		
5.G.	Other																		

Note: All footnotes for this table are given at the end of the table on sheet 4.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
(Sheet 3 of 4) Recalculated year:

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2						CH_4						N_2O					
	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]
	CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)		
6. Waste																		
6.A. Solid Waste Disposal on Land																		
6.B. Waste-water Handling																		
6.C. Waste Incineration																		
6.D. Other																		
7. Other ***(as specified in Summary 1.A)***																		
Memo Items:																		
International Bunkers																		
Multilateral Operations																		
CO_2 Emissions from Biomass																		

Note: All footnotes for this table are given at the end of the table on sheet 4.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
(Sheet 4 of 4) **Recalculated year:**

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs						PFCs						SF_6					
		Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]	Previous submission	Latest submission	Difference	Difference[1]	Impact of recalculation on total emissions excluding LULUCF [2]	Impact of recalculation on total emissions including LULUCF[5]
		CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)			CO_2 equivalent (Gg)			(%)		
Total Acutal Emissions																			
2.C.3.	Aluminium Production																		
2.E.	Production of Halocarbons and SF_6																		
2.F.	Consumption of Halocarbons and SF_6																		
2.G.	Other																		
Potential Emissions from Consumption of HFCs/PFCs and SF_6																			

	Previous submission	Latest submission	Difference	Difference[1]
	CO_2 equivalent (Gg)			(%)
Total CO_2 Equivalent Emissions with Land Use, Land-Use Change and Forestry				
Total CO_2 Equivalent Emissions without Land Use, Land-Use Change and Forestry				

(1) Estimate the percentage change due to recalculation with respect to the previous submission (percentage change = 100 x [(LS-PS)/PS], where LS = latest submission and PS = previous submission. All cases of recalculation of the estimate of the source/sink category should be addressed and explained in table 8(b).

(2) Total emissions refer to total aggregate GHG emissions expressed in terms of CO_2 equivalent, excluding GHGs from the LULUCF sector. The impact of the recalculation on the total emissions is calculated as follows: impact of recalculation (%) = 100 x [(source (LS) - source (PS))/total emissions (LS)], where LS = latest submission, PS = previous submission.

(3) Parties which previously reported CO_2 from soils in the Agriculture sector should note this in the NIR.

(4) Net CO_2 emissions/removals to be reported.

(5) Total emissions refer to total aggregate GHG emissions expressed in terms of CO_2 equivalent, including GHGs from the LULUCF sector. The impact of the recalculation on the total emissions is calculated as follows: impact of recalculation (%) = 100 x [(source (LS) - source (PS))/total emissions (LS)], where LS = latest submission, PS = previous submission.

Documentation box:
Parties should provide detailed information on recalculations in Chapter 10: Recalculations and Improvements, and in the relevant sections of Chapters 3 to 9 (see section 2.5 of each of Chapters 3 - 9) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Year
Submission
Country

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO				
			CHANGES IN:			Addition/removal/ reallocation of source/sink categories	Other changes in data (e.g. statistical or editorial changes, correction of errors)
			Methods [2]	Emission factors [2]	Activity data [2]		

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table. Note that the source categories entered in this table should match those used in table 8(a).
[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in table 8(a). Include changes in the assumptions and coefficients in the Methods column.

Documentation box:
Parties should provide the full information on recalculations in Chapter 10: Recalculations and Improvements, and in the relevant sections of Chapters 3 to 9 (see section 2.5 of each of Chapters 3 to 9) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table. References should point particularly to the sections of the NIR in which justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory are reported.

TABLE 10 EMISSIONS TRENDS Year
CO_2 Submission
(Sheet 1 of 5) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[(1)]	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	(Gg)			%
1. Energy				
A. Fuel Combustion (Sectoral Approach)				
1. Energy Industries				
2. Manufacturing Industries and Construction				
3. Transport				
4. Other Sectors				
5. Other				
B. Fugitive Emissions from Fuels				
1. Solid Fuels				
2. Oil and Natural Gas				
2. Industrial Processes				
A. Mineral Products				
B. Chemical Industry				
C. Metal Production				
D. Other Production				
E. Production of Halocarbons and SF_6				
F. Consumption of Halocarbons and SF_6				
G. Other				
3. Solvent and Other Product Use				
4. Agriculture				
A. Enteric Fermentation				
B. Manure Management				
C. Rice Cultivation				
D. Agricultural Soils				
E. Prescribed Burning of Savannas				
F. Field Burning of Agricultural Residues				
G. Other				

5. Land Use, Land-Use Change and Forestry[(2)]				
A. Forest Land				
B. Cropland				
C. Grassland				
D. Wetlands				
E. Settlements				
F. Other Land				
G. Other				
6. Waste				
A. Solid Waste Disposal on Land				
B. Waste-water Handling				
C. Waste Incineration				
D. Other				
7. Other ***(as specified in Summary 1.A)***				
Total CO_2 emissions including net CO_2 from LULUCF				
Total CO_2 emissions excluding net CO_2 from LULUCF				
Memo Items:				
International Bunkers				
Aviation				
Marine				
Multilateral Operations				
CO_2 Emissions from Biomass				

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSIONS TRENDS Year

CH_4 Submission

(Sheet 2 of 5) Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[(1)]	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	(Gg)			%
1. Energy				
A. Fuel Combustion (Sectoral Approach)				
1. Energy Industries				
2. Manufacturing Industries and Construction				
3. Transport				
4. Other Sectors				
5. Other				
B. Fugitive Emissions from Fuels				
1. Solid Fuels				
2. Oil and Natural Gas				
2. Industrial Processes				
A. Mineral Products				
B. Chemical Industry				
C. Metal Production				
D. Other Production				
E. Production of Halocarbons and SF_6				
F. Consumption of Halocarbons and SF_6				
G. Other				
3. Solvent and Other Product Use				
4. Agriculture				
A. Enteric Fermentation				
B. Manure Management				
C. Rice Cultivation				
D. Agricultural Soils				
E. Prescribed Burning of Savannas				
F. Field Burning of Agricultural Residues				
G. Other				

5. Land Use, Land-Use Change and Forestry				
A. Forest Land				
B. Cropland				
C. Grassland				
D. Wetlands				
E. Settlements				
F. Other Land				
G. Other				
6. Waste				
A. Solid Waste Disposal on Land				
B. Waste-water Handling				
C. Waste Incineration				
D. Other				
7. Other *(as specified in Summary 1.A)*				
Total CH_4 emissions including CH_4 from LULUCF				
Total CH_4 emissions excluding CH_4 from LULUCF				
Memo Items:				
International Bunkers				
Aviation				
Marine				
Multilateral Operations				
CO_2 Emissions from Biomass				

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSIONS TRENDS
N_2O
(Sheet 3 of 5)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[(1)]	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	(Gg)			%
1. Energy				
A. Fuel Combustion (Sectoral Approach)				
1. Energy Industries				
2. Manufacturing Industries and Construction				
3. Transport				
4. Other Sectors				
5. Other				
B. Fugitive Emissions from Fuels				
1. Solid Fuels				
2. Oil and Natural Gas				
2. Industrial Processes				
A. Mineral Products				
B. Chemical Industry				
C. Metal Production				
D. Other Production				
E. Production of Halocarbons and SF_6				
F. Consumption of Halocarbons and SF_6				
G. Other				
3. Solvent and Other Product Use				
4. Agriculture				
A. Enteric Fermentation				
B. Manure Management				
C. Rice Cultivation				
D. Agricultural Soils				
E. Prescribed Burning of Savannas				
F. Field Burning of Agricultural Residues				
G. Other				

5. Land Use, Land-Use Change and Forestry				
A. Forest Land				
B. Cropland				
C. Grassland				
D. Wetlands				
E. Settlements				
F. Other Land				
G. Other				
6. Waste				
A. Solid Waste Disposal on Land				
B. Waste-water Handling				
C. Waste Incineration				
D. Other				
7. Other *(as specified in Summary 1.A)*				
Total N_2O emissions including N_2O from LULUCF				
Total N_2O emissions excluding N_2O from LULUCF				
Memo Items:				
International Bunkers				
Aviation				
Marine				
Multilateral Operations				
CO_2 Emissions from Biomass				

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSION TRENDS
HFCs, PFCs and SF_6
(Sheet 4 of 5)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	(Gg)			%
Emissions of HFCs[3] - (Gg CO_2 equivalent)				
HFC-23				
HFC-32				
HFC-41				
HFC-43-10mee				
HFC-125				
HFC-134				
HFC-134a				
HFC-152a				
HFC-143				
HFC-143a				
HFC-227ea				
HFC-236fa				
HFC-245ca				
Unspecified mix of listed HFCs[4] - (Gg CO_2 equivalent)				
Emissions of PFCs[3] - (Gg CO_2 equivalent)				
CF_4				
C_2F_6				
C_3F_8				
C_4F_{10}				
c-C_4F_8				
C_5F_{12}				
C_6F_{14}				
Unspecified mix of listed PFCs[4] - (Gg CO_2 equivalent)				
Emissions of SF_6[3] - (Gg CO_2 equivalent)				
SF_6				

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSION TRENDS
SUMMARY
(Sheet 5 of 5)

Year
Submission
Country

GREENHOUSE GAS EMISSIONS	Base year[1]	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	CO_2 equivalent (Gg)			(%)
CO_2 emissions including net CO_2 from LULUCF				
CO_2 emissions excluding net CO_2 from LULUCF				
CH_4 emissions including CH_4 from LULUCF				
CH_4 emissions excluding CH_4 from LULUCF				
N_2O emissions including N_2O from LULUCF				
N_2O emissions excluding N_2O from LULUCF				
HFCs				
PFCs				
SF_6				
Total (including LULUCF)				
Total (excluding LULUCF)				

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	(Years 1991 to latest reported year)	Change from 1990[1] to latest reported year
	CO_2 equivalent (Gg)			(%)
1. Energy				
2. Industrial Processes				
3. Solvent and Other Product Use				
4. Agriculture				
5. Land Use, Land-Use Change and Forestry[5]				
6. Waste				
7. Other				
Total (including LULUCF)[5]				

[1] The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

[2] Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

[3] Enter actual emissions estimates. If only potential emissions estimates are available, these should be reported in this table and an indication for this be provided in the documentation box. Only in these rows are the emissions expressed as CO_2 equivalent emissions.

[4] In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is Gg of CO_2 equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

[5] Includes net CO_2, CH_4 and N_2O from LULUCF.

Documentation box:

• Parties should provide detailed explanations on emissions trends in Chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 9 of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.

• Use the documentation box to provide explanations if potential emissions are reported.

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