

Decision 13/CP.9

Good practice guidance for land use, land-use change and forestry in the preparation of national greenhouse gas inventories under the Convention

The Conference of the Parties,

Recalling, in particular, Article 4, paragraphs 1 (a) and 2 (c), Article 10, paragraph 2, and Article 12, paragraphs 1(a), 7 and 9, of the Convention,

Recalling also its decisions 11/CP.7, 17/CP.8 and 18/CP.8,

Reaffirming that anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol should be reported in a transparent, consistent, comparable, complete and accurate way,

Having considered the relevant recommendations of the Subsidiary Body for Scientific and Technological Advice,

1. *Welcomes* the report of the Intergovernmental Panel on Climate Change entitled *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (hereinafter referred to as the Intergovernmental Panel on Climate Change good practice guidance for land use, land-use change and forestry), as accepted by the twenty-first session of the Intergovernmental Panel on Climate Change held in Vienna, Austria, from 3 to 7 November 2003, as an elaboration of the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*;

2. *Decides* that Parties included in Annex I to the Convention (Annex I Parties) should use the Intergovernmental Panel on Climate Change good practice guidance for land use, land-use change and forestry for preparing annual inventories under the Convention, due in 2005 and beyond, with an exception of any guidance relating to the preparation and reporting of greenhouse gas inventories for land use, land-use change and forestry under the Kyoto Protocol until further consideration and a decision on this matter by the Conference by Parties at its tenth session;

3. *Decides* to use, for a trial period covering inventory submissions due in 2005, the tables of the common reporting format for the land use, land-use change and forestry categories contained in annex I to this decision and a table contained in annex III to this decision,¹ with the aim of making them part of 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” (hereinafter referred to as the UNFCCC reporting guidelines on annual inventories) adopted by decision 18/CP.8;

4. *Invites* Parties to submit to the secretariat, by 15 May 2005, their views on the tables of the common reporting format for land use, land-use change and forestry under the Convention and the experiences on their use, and requests the secretariat to synthesize the views of Parties for consideration by the Subsidiary Body for Scientific and Technological Advice at its twenty-third session;

5. *Encourages* Parties not included in Annex I to the Convention to apply good practice guidance for land use, land-use change and forestry, as appropriate and to the extent possible, in the preparation of greenhouse gas inventories to be included in national communications;

¹ The common reporting format is a standardized format to be used by Annex I Parties for electronic reporting of estimates of greenhouse gas emissions and removals and any other relevant information. For technical reasons, the layout of the printed version of the tables of common reporting format for land use, land-use change and forestry in this document (e.g. size of tables and fonts) cannot be standardized.

6. *Decides* to use the technical modifications contained in Annex II to this decision in the trial period referred to in paragraph 3 above;

7. *Requests* the secretariat to incorporate in the UNFCCC reporting guidelines on annual inventories, adopted by decision 18/CP.8, the tables of the common reporting format for land use, land-use change and forestry categories contained in annex I to this decision, and the technical modifications described in annex II to this decision, and to replace table 7 in annex II of the guidelines on annual inventories with the table contained in annex III to this decision, and to prepare, by July 2004, a single document containing updated UNFCCC reporting guidelines on annual inventories to facilitate the preparation and reporting of greenhouse gas inventories for land use, land-use change and forestry by Annex I Parties;

8. *Requests* the secretariat to integrate the tables included in annex I and annex III to this decision in the new reporting software currently under development, in order to facilitate the submission of inventories from Annex I Parties due by 15 April 2005;

9. *Requests* the secretariat, in consultation with the Intergovernmental Panel on Climate Change and other organizations, to use appropriate means to encourage the translation, wide dissemination and use of the good practice guidance for land use, land-use change and forestry;

10. *Recommends* that the Intergovernmental Panel on Climate Change good practice guidance for land use, land-use change and forestry be included as an element in relevant capacity-building activities, particularly of United Nations organizations.

*8th plenary meeting
12 December 2003*

TABLE 5 SECTORAL REPORT FOR LAND USE, LAND-USE CHANGE AND FORESTRY

(Sheet 1 of 1)

ANNEX I

Country

Year

Submission

Tables of the common reporting format for the land use, land-use change and forestry categories for reporting under the Convention*

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂ emissions/ removals ^{(1), (2)}	CH ₄	N ₂ O	NO _x	CO
	(Gg)				
5. Total Land-Use Categories					
5.A. Forest Land					
5.A.1. Forest Land remaining Forest Land					
5.A.2. Land converted to Forest Land					
5.B. Cropland					
5.B.1. Cropland remaining Cropland					
5.B.2. Land converted to Cropland					
5.C. Grassland					
5.C.1. Grassland remaining Grassland					
5.C.2. Land converted to Grassland					
5.D. Wetlands⁽³⁾					
5.D.1. Wetlands remaining Wetlands					
5.D.2. Land converted to Wetlands					
5.E. Settlements⁽³⁾					
5.E.1. Settlements remaining Settlements					
5.E.2. Land converted to Settlements					
5.F. Other Land⁽⁴⁾					
5.F.1. Other Land remaining Other Land					
5.F.2. Land converted to Other Land					
5.G. Other (please specify)⁽⁵⁾					
<i>Harvested Wood Products⁽⁶⁾</i>					
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 (+). Net changes in carbon stocks are converted to CO₂ by multiplying C by 44/12 and by changing the sign for net CO₂ removals to be negative (-) and for net CO₂ emissions to be positive (+).

⁽²⁾ CO₂ emissions from liming and biomass burning are included in this column.

⁽³⁾ Parties do not have to prepare estimates for 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 and report in this row.

⁽⁴⁾ Parties do not have to prepare estimates for this category contained in Chapter 3.7 of the IPCC good practice guidance for LULUCF, although they may do so if they wish and report in this row. This land-use category is to allow the total of identified land area to match the national area.

⁽⁵⁾ May include other non-specified sources and sinks.

⁽⁶⁾ Parties do not have 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.

* NOTE: For the sake of consistency across the CRF, some editorial changes may need to be introduced while incorporating the tables of the CRF for the LULUCF categories in the UNFCCC reporting guidelines for annual inventories (see para 7 of this decision).

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

Forest Land
(Sheet 1 of 1)Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS					EMISSIONS/REMOVALS				
Land-Use Category	Sub-division ⁽¹⁾	Total area (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⁾
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)					(Gg C)				
5.A Total Forest Land												
5.A.1. Forest Land remaining Forest Land												
5.A.2. Land converted to Forest Land ⁽⁴⁾												
5.A.2.1 Cropland converted to Forest Land												
5.A.2.2 Grassland converted to Forest Land												
5.A.2.3 Wetlands converted to Forest Land												
5.A.2.4 Settlements converted to Forest Land												
5.A.2.5 Other Land converted to Forest Land												

⁽¹⁾ Land categories may be further divided according to climate zones, management system, soil type, vegetation type, tree species, ecological zones or national land classification.⁽²⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except where, due to the methods used, it may be technically impossible to separate information on increases and decreases.⁽³⁾ The signs for estimates of increases in carbon stocks are positive (+) and of decreases 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.**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

Cropland
(Sheet 1 of 1)Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS					EMISSIONS/REMOVALS				
Land-Use Category	Sub-division ⁽¹⁾	Total area (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), (4)}			Net carbon stock change in dead organic matter ^(3,5)	Net carbon stock change in soils ^(3,5)
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)					(Gg C)				
5.B Total Cropland												
5.B.1. Cropland remaining Cropland												
5.B.2. Land converted to Cropland ⁽⁶⁾												
5.B.2.1 Forest Land converted to Cropland												
5.B.2.2 Grassland converted to Cropland												
5.B.2.3. Wetlands converted to Cropland												
5.B.2.4 Settlements converted to Cropland												
5.B.2.5 Other Land converted to Cropland												

⁽¹⁾ Land categories may be further divided according to climate zones, management system, soil type, vegetation type, tree species, ecological zones or national land classification.⁽²⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.⁽³⁾ The signs for estimates of increases in carbon stocks are positive (+) and of decreases 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 and grassland conversion should be provided in Table 5 as an information item.**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

Grassland

(Sheet 1 of 1)

Country

Year

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS					EMISSIONS/REMOVALS				
Land-Use Category	Sub-division ⁽¹⁾	Total area (kha)	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⁾
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)					(Gg C)				
5.C Total Grassland												
5.C.1. Grassland remaining Grassland												
5.C.2. Land converted to Grassland ⁽⁶⁾												
5.C.2.1 Forest Land converted to Grassland												
5.C.2.2 Cropland converted to Grassland												
5.C.2.3. Wetlands converted to Grassland												
5.C.2.4 Settlements converted to Grassland												
5.C.2.5 Other Land converted to Grassland												

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

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

⁽³⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.

⁽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 conversion should be provided in Table 5 as an information item.

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
Wetlands ⁽¹⁾
(Sheet 1 of 1)

Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS					EMISSIONS/REMOVALS				
Land-Use Category	Sub-division ⁽²⁾	Total area (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⁾
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)						(Gg C)			
5.D Total Wetlands												
5.D.1. Wetlands remaining Wetlands												
5.D.2. Land converted to Wetlands ⁽⁵⁾												
5.D.2.1 Forest Land converted to Wetlands												
5.D.2.2 Cropland converted to Wetlands												
5.D.2.3. Grassland converted to Wetlands												
5.D.2.4 Settlements converted to Wetlands												
5.D.2.5 Other Land converted to Wetlands												

⁽¹⁾ Parties do not have to prepare estimates for 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.

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

⁽³⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.

⁽⁴⁾ The signs for estimates of increases in carbon stocks are positive (+) and of decreases 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 and grassland conversion should be provided in Table 5 as an information item.

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.E SECTORAL BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY
Settlements⁽¹⁾
(Sheet 1 of 1)

Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS					EMISSIONS/REMOVALS				
Land-Use Category	Sub-division ⁽²⁾	Total area (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⁾
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)					(Gg C)				
5.E Total Settlements												
5.E.1. Settlements remaining Settlements												
5.E.2. Land converted to Settlements ⁽⁶⁾												
5.E.2.1 Forest Land converted to Settlements												
5.E.2.2 Cropland converted to Settlements												
5.E.2.3. Grassland converted to Settlements												
5.E.2.4 Wetlands converted to Settlements												
5.E.2.5 Other Land converted to Settlements												

⁽¹⁾ Parties do not have to prepare estimates for 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.

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

⁽³⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.

⁽⁴⁾ The signs for estimates of increases in carbon stocks are positive (+) and of decreases 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 and grassland conversion should be provided in Table 5 as an information item.

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⁽¹⁾

(Sheet 1 of 1)

Country

Year

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS				EMISSIONS/REMOVALS					
Land-Use Category	Sub-division ⁽²⁾	Total area (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⁾
			Increase	Decrease	Net change			Increase	Decrease	Net change		
			(Mg C/ha)						(Gg C)			
5.F Total Other Land												
5.F.1. Other Land remaining Other Land												
5.F.2. Land converted to Other Land ⁽⁵⁾												
5.F.2.1 Forest Land converted to Other Land												
5.F.2.2 Cropland converted to Other Land												
5.F.2.3. Grassland converted to Other Land												
5.F.2.4 Wetlands converted to Other Land												
5.F.2.5 Settlements converted to Other Land												

⁽¹⁾ Parties do not have to prepare estimates for this category contained in Chapter 3.7 of the IPCC good practice guidance for LULUCF, although they may do so if they wish. 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 zones, management system, soil type, vegetation type, tree species, ecological zones or national land classification.

⁽³⁾ CO₂ emissions and removals (carbon stock increase and decrease) should be listed separately except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.

⁽⁴⁾ The signs for estimates of increases in carbon stocks are positive (+) and of decreases 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 and grassland conversion should be provided in Table 5 as an information item.

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

Direct N₂O emissions from N fertilization ⁽¹⁾

(Sheet 1 of 1)

Country

Year

Submission

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

⁽¹⁾ Direct N₂O 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 amount of fertilizers applied to forest land. The indirect N₂O emissions from forest land are estimated as part of the total indirect emissions (Agriculture sector and Forest land) in the Agriculture sector based on the total fertilizers used in the country.

⁽²⁾ N₂O 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, N₂O emissions are converted to N₂O-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 N₂O 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 when data are not available to report forest land remaining forest land and land conversion to forest land separately.

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
N₂O emissions from drainage of soils ⁽¹⁾
(Sheet 1 of 1)

Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA	IMPLIED EMISSION FACTORS	EMISSIONS
Land-Use Category ⁽²⁾	Sub-division ⁽³⁾	Area of drained soils	N ₂ O-N per area drained ⁽⁴⁾	N ₂ O
		(kha)	(kg N ₂ O-N/ha)	(Gg)
Total all Land-Use Categories				
5.A Forest Land				
Organic Soil				
Mineral Soil				
5.D Wetlands				
Organic Soil				
Mineral Soil				
5.G. Other <i>(please specify)</i>				

⁽¹⁾ Methodologies for estimating N₂O emissions from drainage of soils are not addressed in the Revised 1996 IPCC Guidelines, but are addressed for forest soils in Appendix 3a.2 of the IPCC good practice guidance for LULUCF (equation 3a.2.1) and for wetland soils in appendix 3a.3.

⁽²⁾ N₂O 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, N₂O emissions are converted to N₂O-N by multiplying by 28/44.

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
N₂O emissions from disturbance associated with land-use conversion to cropland ⁽¹⁾
 (Sheet 1 of 1)

Country
 Year
 Submission

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

⁽¹⁾ Methodologies for N₂O 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. N₂O 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 N₂O emissions from disturbance of soils are only relevant for land conversions to cropland. N₂O 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, N₂O emissions are converted to N₂O-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 lands converted to cropland (indicate in the documentation box what this category includes).

⁽⁶⁾ Parties should avoid double counting with N₂O emissions from drainage and from cultivation of organic soils reported in Agriculture under Cultivation of histosols.

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
Carbon emissions from agricultural lime application ⁽¹⁾
(Sheet 1 of 1)

Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	EMISSIONS
Land-Use Category	Total amount of lime applied	Carbon emissions per unit of lime	Carbon
	(Mg/yr)	(Mg C/Mg)	(Gg)
Total all Land-Use Categories ^{(2), (3), (4)}			
5.B Cropland ⁽⁴⁾			
Limestone CaCO ₃			
Dolomite CaMg(CO ₃) ₂			
5.C Grassland ⁽⁴⁾			
Limestone CaCO ₃			
Dolomite CaMg(CO ₃) ₂			
5.G Other (please specify) ^(4, 5)			
Limestone CaCO ₃			
Dolomite CaMg(CO ₃) ₂			

⁽¹⁾ Carbon 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 total.

⁽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.

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

Biomass Burning ⁽¹⁾
(Sheet 1 of 1)Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTOR			EMISSIONS		
	Description ⁽³⁾	Unit (ha or kg dm)	Values	CO ₂	CH ₄	N ₂ O	CO ₂ ⁽⁴⁾	CH ₄	N ₂ O
Land-Use Category ⁽²⁾				(Mg/activity data unit)			(Gg)		
Total for Land-Use Categories									
5.A. Forest Land									
5.A.1. Forest land remaining Forest Land									
Controlled Burning									
Wildfires									
5.A.2. Land converted to Forest Land									
Controlled Burning									
Wildfires									
5.B. Cropland									
5.B.1. Cropland remaining Cropland ⁽⁵⁾									
Controlled Burning									
Wildfires									
5.B.2. Land converted to Cropland									
Controlled Burning									
Wildfires									
5.B.2.1. Forest Land converted to Cropland									
Controlled Burning									
Wildfires									
5.C. Grassland									
5.C.1. Grassland remaining grassland ⁽⁶⁾									
Controlled Burning									
Wildfires									
5.C.2. Land converted to Grassland									
Controlled Burning									
Wildfires									
5.C.2.1. Forest Land converted to Grassland									
Controlled Burning									
Wildfires									
5.D. Wetlands⁽⁷⁾									
5.D.1. Wetlands remaining Wetlands									
Controlled Burning									
Wildfires									
5.D.2. Land converted to Wetlands									
Controlled Burning									
Wildfires									
5.D.2.1. Forest Land converted to Wetlands									
Controlled Burning									
Wildfires									
5.E. Settlements⁽⁷⁾									
5.F. Other Land⁽⁸⁾									
5.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 CO₂ 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⁾ Biomass burning on cropland remaining cropland is reported in the Agriculture sector.⁽⁶⁾ Only includes emissions from controlled biomass burning on grasslands outside the tropics (prescribed savanna burning is reported under the Agriculture sector).⁽⁷⁾ Parties do not have to prepare estimates for 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⁾ Parties do not have to prepare estimates for this category contained in Chapter 3.7 of the IPCC good practice guidance for LULUCF, although they may do so if they wish. This land-use category is to allow the total of identified land area to match the national area.**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.

ANNEX II

TECHNICAL MODIFICATIONS TO UNFCCC REPORTING GUIDELINES ON ANNUAL INVENTORIES FOR ANNEX I PARTIES ADOPTED BY DECISION 18/CP.8¹

1. In the text of the guidelines and their annexes, including in tables, replace the term: “land-use change and forestry” with the term “land use, land-use change and forestry”. In the text of the guidelines and their annexes, including in tables, replace the term LUCF with the term LULUCF.

2. In the text of the guidelines and their annexes, including in tables, as appropriate, replace the terms:

- 5.A Changes in Forest and other Woody Biomass Stocks
- 5.B Forest and Grassland Conversion
- 5.C Abandonment of Managed Lands
- 5.D CO₂ Emissions and Removals from Soils

with the terms:

- 5.A Forest land
- 5.B Cropland
- 5.C Grassland
- 5.D Wetlands
- 5.E Settlements
- 5.F Other Land

3. Replace the terms “key source category” and “key source” with the term “key category” throughout the document, including in tables as appropriate, unless otherwise noted in this annex. Replace the terms “key source categories” and “key sources” with the term “key categories” throughout the document, including in tables as appropriate, unless otherwise noted in this annex (see paragraph 15 below).

4. Shade the CO₂ cell(s) in the following common reporting format (CRF) tables:

- Summary 1A (line 4D)
- Summary 1B (line 4)
- Summary 2 (line 4D)
- Summary 3 (line 4D)
- Table 8a (line 4D)

5. Shade line 4D of Table 10.

6. Revise shading on other tables as appropriate; for example, on table 8a due to the introduction of the new LULUCF categories.

7. Delete footnote 2 to Table 4 Sectoral report for agriculture (sheet 2 of 2).

¹ Based on the IPCC good practice guidance for LULUCF. This title will not be used after the preparation of the single document referred to in paragraph 7 of decision 13/CP.9.

8. Delete tables 5, 5.A, 5.B, 5.C, 5.D in annex II of the guidelines (CRF), and replace them with tables 5, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5(I), 5(II), 5(III), 5(IV), 5(V) contained in annex I to decision 13/CP.9.
9. In Annex II of the guidelines (CRF) replace table 7 with the new table “Summary Overview for Key Categories” contained in annex III to decision 13/CP.9.
10. Delete footnote 4 in Summary 1A; footnote 3 in Summary 1B; footnote 4 in table 8a; and footnote 2 in table 10 of annex II of the guidelines.
11. In tables Summary 1A, Summary 1B, Summary 2 of annex II of the guidelines, replace the columns “CO₂ emissions” and “CO₂ removals” with a column entitled “Net CO₂ emissions/removals”. Insert in Summary 1A, Summary 1B, Summary 2, on line 4D Agricultural soils, the following footnote: Parties which previously reported CO₂ for soils in the Agriculture sector should note this in the NIR.
12. Paragraph 4 Delete the second sentence of footnote 1. In the last line of the third paragraph, before the footnote, add “and *Good Practice Guidance for Land Use, Land-Use Change and Forestry*”.
13. Paragraph 11 Delete the word “source” twice in the first line. Insert a footnote to the term “key categories” in line 1 to read: “The term “key categories” refers both to the key source categories as addressed in *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and to the key categories as addressed in *IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry*.”
14. Paragraph 14 In line 5, replace the words “those sources” with the word “categories”.
15. Paragraph 17 In line 4, delete the word “source”.
16. Paragraph 30 Make changes as indicated: “Annex I Parties shall estimate and report the individual and cumulative percentage contributions from key ~~source~~ categories to their national total, with respect to both ~~emission~~ level and ~~emission~~ trend. The emissions should be expressed in terms of CO₂ equivalents using the methods provided in the IPCC good practice guidance. As indicated in paragraphs 41 and 47 below, this information should be included in table 7 of the CRF as well as the NIR using tables 7.A1 – 7.A3 of the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and tables 5.4.1 – 5.4.3 of the *Good Practice Guidance for Land Use, Land-Use Change and Forestry* adapted to the level of category disaggregation that the Annex I Party used for determining its key ~~sources-categories~~.”
17. Paragraph 30 Insert footnote at the end of the paragraph to read: “Table 7.1 IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and table 5.4.1 of the *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, should be used as the basis for preparing key category analyses but do not need to be reported in the NIR.” Replace references to 7.A1–7.A3 with 7.1–7.3.
18. Paragraph 32 Make the changes indicated: “Annex I Parties shall report, in the NIR, uncertainties estimated as indicated in paragraph 14 above, as well as methods used and underlying assumptions, with the purpose of helping to prioritize efforts to improve the accuracy of national inventories in the future and guide decisions on methodological choice. This information should be presented using tables 6.1 and 6.2 of the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* adding the lines for the relevant LULUCF categories as indicated in section 5.2.5 of the *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. In these tables, the term “national total” refers to the absolute value of emissions by sources minus the magnitude of removals by sinks. In addition, Annex I Parties should indicate in these tables those ~~categories sources~~ that have been identified as key ~~sources categories~~ in their

inventory. If the methods used to estimate the level of uncertainty depart from the IPCC good practice guidance, these methods should be described.”

19. Paragraph 41 (c) (ii) Replace with “Whether CO₂ from biomass burning has been estimated and where it has been accounted for in the sectoral background tables of the CRF (Tables 5.A–5.F, and table 5(V))”.

20. Paragraph 41 Delete paragraph 41 (d) and footnote 11, and renumber subsequent paragraphs and footnotes.

21. Annex I, chapter 7 (LUCF) Insert the following: “*In addition, the LULUCF information should include the following:*”

- *Information on approaches used for representing land areas and on land-use databases used for the inventory preparation*
- *Land-use definitions and the classification systems used and their correspondence to the LULUCF categories.”*

22. Annex I, Appendix A Delete second bullet under the heading *Agricultural soils*, in *Agriculture*.

23. Annex I, Appendix A Insert the following at the end of the Agriculture section:

“Land-use, land-use change and forestry

More specific information than is required in the CRF for each land use category and for subcategories could be provided, for example:

- When providing estimates by subdivisions, additional information on disaggregation and related data in the NIR
- Separate reporting of CO₂ emissions from biomass burning, including wildfires and controlled burning
- For those Parties choosing to report harvested wood products, detailed information on CO₂ emissions and removals from harvested wood products, including information by product type and disposal
- Information on how double counting and omissions between the Agriculture and LULUCF sectors have been avoided.”

24. Annex II, Paragraph 10 Delete and renumber subsequent paragraphs.

25. Annex II Insert two new paragraphs after current paragraph 13:

“13. CO₂ emissions and removals (carbon increase and decrease) should be listed separately in the LULUCF sectoral background tables except in cases where, due to the methods used, it may be technically impossible to separate information on increases and decreases.

14. If a Party does not provide information in new CRF tables for LULUCF for all years, and has not recalculated the estimates for LULUCF for these years, it should provide information on mapping categories provided in the IPCC good practice guidance for LULUCF to the LUCF categories (5.A to 5.E) used in the 1996 IPCC Guidelines and should include information on how it calculated totals for forest and grassland conversion. The information provided in the NIR should be cross-referenced to information in the CRF and vice versa.”

Replacement for table 7 in annex II of the guidelines on annual inventories

TABLE 7 SUMMARY OVERVIEW FOR KEY CATEGORIES
(Sheet 1 of 1)

Country
Year
Submission

KEY CATEGORIES OF EMISSIONS AND REMOVALS	GAS	CRITERIA USED FOR KEY CATEGORY IDENTIFICATION			Key category excluding LULUCF ⁽¹⁾	Key category including LULUCF ⁽¹⁾	COMMENTS ⁽¹⁾
		L	T	Q			
Specify key categories according to the national level of disaggregation used:							
<i>For example: 4.B Manure management</i>	<i>CH₄</i>	<i>X</i>			<i>X</i>		

Note: L = Level assessment; T = Trend assessment; Q = Qualitative assessment.

⁽¹⁾ The term “key categories” refers to both the key source categories as addressed in IPCC *Good Practice Guidance on Uncertainty Management in National Greenhouse Gas Inventories* and the key categories as addressed in IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry*.

⁽²⁾ For estimating key categories Parties may chose the disaggregation level presented as an example in Table 7.1 of the IPCC *Good Practice Guidance on Uncertainty Management in National Greenhouse Gas Inventories* (page 7.6) and table 5.4.1 (page 5.31) of the IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, the level used in Table Summary 1A of the common reporting format or any other disaggregation level that the Party used to determine its key categories.

Documentation box:

Parties should provide the full information on methodologies used for identifying key categories and the quantitative results from the level and trend assessments (according to tables 7.1 – 7.3 of the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and tables 5.4.1 – 5.4.3 of the *Good Practice Guidance for Land Use, Land-Use Change and Forestry*) in Annex 1 to the NIR.