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SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

Twenty-seventh session
Bali, 3–11 December 2007

Agenda item 9 (d)

Methodological issues under the Kyoto Protocol

Good practice guidance for land use, land-use change and forestry activities
under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

**Good practice guidance for land use, land-use change and forestry activities
under Article 3, paragraphs 3 and 4, of the Kyoto Protocol**

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-seventh session, decided to recommend the following draft decision for adoption by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its third session:

Draft decision -/CMP.3

**Good practice guidance for land use, land-use change and forestry activities
under Article 3, paragraphs 3 and 4, of the Kyoto Protocol**

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

*Recalling Article 3, paragraphs 3 and 4, Article 5, paragraph 2, Article 6 and Article 7,
paragraph 1, of the Kyoto Protocol,*

Further recalling decisions 13/CMP.1, 15/CMP.1, 16/CMP.1 and 17/CMP.1,

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

1. *Decides* that Parties shall use, for reporting information supplementary to annual greenhouse gas inventory information in the first commitment period, in addition to the elements specified in paragraphs 5–9 of the annex to decision 15/CMP.1, tables to be included in an annex to the national inventory report, as well as the tables of the common reporting format¹ for the purpose of submission of information on anthropogenic greenhouse gas emissions by sources and removals by sinks from land use, land-use change and forestry activities under Article 3, paragraph 3, and, if any, elected activities under Article 3, paragraph 4, in accordance with Article 5, paragraph 2, of the Kyoto Protocol due in 2010 and there after; these tables are contained in the annex to this decision;

2. *Requests* the secretariat, subject to availability of supplementary funding, to develop a module to the Common Reporting Format Reporter software for these tables.

¹ The common reporting format is a standardized format to be used by Parties for electronic reporting of estimates of greenhouse gas emissions and removals and any other relevant information. For technical reasons (such as size of tables and fonts), the layout of the printed version of the tables of the common reporting format for LULUCF activities in this document cannot be standardized.

Annex

TABLE NIR 1. SUMMARY TABLE

Activity coverage and other information relating to activities under Article 3.3 and elected activities under Article 3.4

Activity		Change in carbon pool reported ⁽¹⁾					Greenhouse gas sources reported ⁽²⁾						
		Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil	Fertilization ⁽³⁾	Drainage of soils under forest management	Disturbance associated with land-use conversion to croplands	Liming	Biomass burning ⁽⁴⁾		
							N ₂ O				N ₂ O	N ₂ O	CO ₂
Article 3.3 activities	Afforestation and Reforestation												
	Deforestation												
Article 3.4 activities	Forest Management												
	Cropland Management												
	Grazing Land Management												
	Revegetation												

⁽¹⁾ Indicate R (reported), NR (not reported), IE (included elsewhere) or NO (not occurring), for each relevant activity under Article 3.3 or elected activity under Article 3.4. If changes in a carbon pool are not reported, it must be demonstrated in the NIR that this pool is not a net source of greenhouse gases. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the text.

⁽²⁾ Indicate R (reported), NE (not estimated), IE (included elsewhere) or NO (not occurring) for greenhouse gas sources reported, for each relevant activity under Article 3.3 or elected activity under Article 3.4. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the text.

⁽³⁾ N₂O emissions from fertilization for Cropland Management, Grazing Land Management and Revegetation should be reported in the Agriculture sector. If a Party is not able to separate fertilizer applied to Forest Land from Agriculture, it may report all N₂O emissions from fertilization in the Agriculture sector.

⁽⁴⁾ If CO₂ emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning; this also includes the carbon component of CH₄. Parties that include CO₂ emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

Table NIR 1.1 Additional information

Selection of parameters for defining "Forest" under the Kyoto Protocol

Parameter	Range	Selected value
Minimum land area	0.05 - 1 ha	
Minimum crown cover	10 - 30 %	
Minimum height	2 - 5 m	

Table NIR 2. LAND TRANSITION MATRIX

Areas and changes in areas between the previous and the current inventory year ^{(1), (2), (3)}

From previous inventory year \ To current inventory year		Article 3.3 activities		Article 3.4 activities				Other ⁽⁵⁾	Total area at the beginning of the current inventory year ⁽⁶⁾
		Afforestation and reforestation	Deforestation	Forest Management (if elected)	Cropland Management (if elected)	Grazing Land Management (if elected)	Revegetation (if elected)		
		(kha)							
Article 3.3 activities	Afforestation and Reforestation								
	Deforestation								
Article 3.4 activities	Forest Management (if elected)								
	Cropland Management ⁽⁴⁾ (if elected)								
	Grazing Land Management ⁽⁴⁾ (if elected)								
	Revegetation ⁽⁴⁾ (if elected)								
Other ⁽⁵⁾									
Total area at the end of the current inventory year									

⁽¹⁾ This table should be used to report land area and changes in land area subject to the various activities in the inventory year. For each activity it should be used to report area change between the previous year and the current inventory year. For example, the total area of land subject to Forest Management in the year preceding the inventory year, and which was deforested in the inventory year, should be reported in the cell in column B and in the row of Forest Management.

⁽²⁾ Some of the transitions in the matrix are not possible and the cells concerned have been shaded.

⁽³⁾ In accordance with section 4.2.3.2 of the IPCC good practice guidance for LULUCF, the value of the reported area subject to the various activities under Article 3.3 and 3.4 for the inventory year should be that on 31 December of that year.

⁽⁴⁾ Lands subject to Cropland Management, Grazing Land Management or Revegetation which, after 2008, are subject to activities other than those under Article 3.3 and 3.4, should still be tracked and reported under Cropland Management, Grazing Land Management or Revegetation, respectively.

⁽⁵⁾ "Other" includes the total area of the country that has not been reported under an Article 3.3 or an elected Article 3.4 activity.

⁽⁶⁾ The value in the cell of row "Total area at the end of the current inventory year" corresponds to the total land area of a country and is constant for all years.

TABLE NIR 3. SUMMARY OVERVIEW FOR KEY CATEGORIES FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL

KEY CATEGORIES OF EMISSIONS AND REMOVALS	GAS	CRITERIA USED FOR KEY CATEGORY IDENTIFICATION			COMMENTS ⁽³⁾
		Associated category in UNFCCC inventory ⁽¹⁾ is key (indicate which category)	Category contribution is greater than the smallest category considered key in the UNFCCC inventory ^{(1), (4)} (including LULUCF)	Other ⁽²⁾	
Specify key categories according to the national level of disaggregation used ⁽¹⁾					
<i>For example: Cropland Management</i>	<i>CO₂</i>	<i>X (Cropland remaining Cropland)</i>			

⁽¹⁾ See section 5.4 of the IPCC good practice guidance for LULUCF.

⁽²⁾ This should include qualitative consideration as per section 5.4.3 of the IPCC good practice guidance for LULUCF or any other criteria.

⁽³⁾ Describe the criteria identifying the category as key.

⁽⁴⁾ If the emissions or removals of the category exceed the emissions of the smallest category identified as key in the UNFCCC inventory (including LULUCF), Parties should indicate YES. If not, Parties should indicate NO.

TABLE 5(KP) REPORT OF SUPPLEMENTARY INFORMATION FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL ^{(1),(2)}

Country
Year
Submission

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	Net CO ₂ emissions/ removals ^{(3),(4)}	CH ₄ ⁽⁵⁾	N ₂ O ⁽⁶⁾	Net CO ₂ equivalent emissions/removals
	(Gg)			
A. Article 3.3 activities				
A.1. Afforestation and Reforestation ⁽⁷⁾				
A.1.1. Units of land not harvested since the beginning of the commitment period				
A.1.2. Units of land harvested since the beginning of the commitment period				
A.2. Deforestation				
B. Article 3.4 activities				
B.1. Forest Management (if elected)				
B.2. Cropland Management (if elected)				
B.3. Grazing Land Management (if elected)				
B.4. Revegetation (if elected)				
Information item:				
A.1.2. Units of land harvested since the beginning of the commitment period				
<i>[specify identification code]</i>				
Documentation box				
Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.				

⁽¹⁾ All estimates in this table include emissions and removals from projects under Article 6 hosted by the reporting Party.

⁽²⁾ If Cropland Management, Grazing Land Management and/or Revegetation are elected, this table and all relevant CRF tables should also be reported for the base year for these

⁽³⁾ 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 net CO₂ emissions to be positive (+).

⁽⁴⁾ CO₂ emissions from liming, biomass burning and drained organic soils, where applicable, are included in this column.

⁽⁵⁾ CH₄ emissions reported here for Cropland Management, Grazing Land Management and Revegetation, if elected, include only emissions from biomass burning (with the exception of savannah burning and agricultural residue burning which are reported in the Agriculture sector). Any other CH₄ emissions from Agriculture should be reported in the Agriculture sector.

⁽⁶⁾ N₂O emissions reported here for Cropland Management, if elected, include only emissions from biomass burning (with the exception of savannah burning and agricultural residue burning which are reported in the Agriculture sector) and N₂O emissions from mineral soils from conversion to Cropland of lands other than Forest Land (Table 5(KP-II)3). Any other N₂O emissions from Agriculture should be reported in the Agriculture sector.

⁽⁷⁾ As both Afforestation and Reforestation under Article 3.3 are subject to the same provisions specified in the annex to decision 16/CMP.1, they can be reported together.

TABLE 5(KP-1).A.1.2. SUPPLEMENTARY BACKGROUND DATA ON CARBON STOCK CHANGES AND NET CO₂ EMISSIONS AND REMOVALS FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
 Article 3.3 activities: Afforestation and Reforestation ^{(1), (2)}
 Units of land harvested since the beginning of the commitment period

Country
 Year
 Submission

GEOGRAPHICAL LOCATION ⁽³⁾	ACTIVITY DATA			IMPLIED CARBON STOCK CHANGE FACTORS ⁽⁷⁾									Implied emission/removal factor per area ⁽⁹⁾	CHANGE IN CARBON STOCK ⁽⁷⁾									Net CO ₂ emissions/removals ⁽⁹⁾	
	Identification code	Subdivision ⁽⁴⁾	Area subject to the activity (kha)	Carbon stock change in above-ground biomass per area ^{(5), (6)}			Carbon stock change in below-ground biomass per area ^{(5), (6)}			Net carbon stock change in litter per area ⁽⁵⁾	Net carbon stock change in dead wood per area ⁽⁵⁾	Net carbon stock change in soils per area ⁽⁵⁾		Carbon stock change in above-ground biomass ^{(5), (6)}			Carbon stock change in below-ground biomass ^{(5), (6)}			Net carbon stock change in soils ⁽⁵⁾		Net CO ₂ emissions/removals ⁽⁹⁾		
				Gains	Losses	Net change	Gains	Losses	Net change			Mineral soils		Organic soils	Gains	Losses	Net change	Gains	Losses	Net change	change in litter ⁽⁵⁾			change in dead wood ⁽⁵⁾
Total for activity A.1.2				(Mg C/ha)									(Mg CO ₂ /ha)	(Gg C)									(Gg CO ₂)	
[specify identification code]																								
	[specify subdivision]																							
	[specify subdivision]																							
[specify identification code]																								
	[specify subdivision]																							
...	...																							

Documentation box
 Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR. Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ Report here information on anthropogenic change in carbon stock for the inventory year for all geographical locations that encompass units of land subject to Afforestation and Reforestation under Article 3.3 harvested since the beginning of the commitment period.
⁽²⁾ As both Afforestation and Reforestation under Article 3.3 are subject to the same provisions specified in the annex to decision 16/CMP.1, they can be reported together.
⁽³⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Afforestation and Reforestation.
⁽⁴⁾ Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.
⁽⁵⁾ The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).
⁽⁶⁾ 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. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.
⁽⁷⁾ Note that net change corresponds to increase / decrease of carbon stock (see table 4.2.6a of the IPCC good practice guidance for LULUCF).
⁽⁸⁾ This information is needed for the calculation of the net carbon stock changes in soils per area.
⁽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 CO₂ by multiplying C by 44/12 and changing the sign for net CO₂ removals to be negative (-) and for net CO₂ emissions to be positive (+).
⁽¹⁰⁾ The value reported here is an emission and not a carbon stock change.

TABLE 5(KP-I)A.1.3. SUPPLEMENTARY BACKGROUND FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL

Article 3.3 activities: Afforestation and Reforestation ^{(1), (2)}

Units of land otherwise subject to elected activities under Article 3.4 (information item)

Country
Year
Submission

GEOGRAPHICAL LOCATION ⁽³⁾	ACTIVITY DATA	
Identification code	Subdivision ⁽⁴⁾	Area subject to the activity (kha)
Total for activity A.1.3		
<i>[specify identification code]</i>		
...	<i>[specify subdivision]</i>	
	<i>[specify subdivision]</i>	
<i>[specify identification code]</i>		
...	...	

Documentation box
Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ Units of land subject to Afforestation or Reforestation under Article 3.3 otherwise subject to elected activities under Article 3.4 are implicitly included under A.1.1 or A.1.2. They are reported here for transparency and to fulfil the requirement of paragraph 6 (b) (ii) of the annex to decision 15/CMP.1.

⁽²⁾ As both Afforestation and Reforestation under Article 3.3 are subject to the same provisions specified in the annex to decision 16/CMP.1, they can be reported together.

⁽³⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Afforestation and Reforestation, which would otherwise be included in land subject to elected activities under Article 3.4.

⁽⁴⁾ Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.

TABLE 5(KP-DA.2. SUPPLEMENTARY BACKGROUND DATA ON CARBON STOCK CHANGES AND NET CO₂ EMISSIONS AND REMOVALS FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
 Article 3.3 activities: Deforestation⁽¹⁾

Country
 Year
 Submission

GEOGRAPHICAL LOCATION ⁽²⁾	ACTIVITY DATA			IMPLIED CARBON STOCK CHANGE FACTORS ⁽⁶⁾								Implied emission/removal factor per area ⁽⁸⁾	CHANGE IN CARBON STOCK ⁽⁶⁾								Net CO ₂ emissions/removals ⁽⁸⁾						
	Identification code	Subdivision ⁽³⁾	Area subject to the activity	Area of organic soils ⁽⁷⁾	Carbon stock change in above-ground biomass per area ^{(4), (5)}			Carbon stock change in below-ground biomass per area ^{(4), (5)}			Net carbon stock change in litter per area ⁽⁴⁾		Net carbon stock change in dead wood per area ⁽⁴⁾	Net carbon stock change in soils per area ⁽⁴⁾		Carbon stock change in above-ground biomass ^{(4), (5)}			Carbon stock change in below-ground biomass ^{(4), (5)}			Net carbon stock change in litter ⁽⁴⁾	Net carbon stock change in dead wood ⁽⁴⁾	Net carbon stock change in soils ⁽⁴⁾		Net CO ₂ emissions/removals ⁽⁸⁾	
					Gains	Losses	Net change	Gains	Losses	Net change				Mineral soils	Organic soils	Gains	Losses	Net change	Gains	Losses				Net change	Mineral soils		Organic soils ⁽⁹⁾
					(Mg C/ha)																			(Mg CO ₂ /ha)			
Total for activity A.2.																											
[specify identification code]																											
	[specify subdivision]																										
	[specify subdivision]																										
[specify identification code]																											
	[specify subdivision]																										
...	...																										

Documentation box
 Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR. Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ Report here information on anthropogenic change in carbon stock for the inventory year for all geographical locations that encompass units of land subject to Deforestation under Article 3.3.
⁽²⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Deforestation.
⁽³⁾ Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.
⁽⁴⁾ The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).
⁽⁵⁾ 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. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.
⁽⁶⁾ Note that net change corresponds to increase / decrease of carbon stock (see table 4.2.6a of the IPCC good practice guidance for LULUCF).
⁽⁷⁾ This information is needed for the calculation of the net carbon stock changes in soils per area.
⁽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 CO₂ by multiplying C by 44/12 and changing the sign for net CO₂ removals to be negative (-) and for net CO₂ emissions to be positive (+).
⁽⁹⁾ The value reported here is an emission and not a carbon stock change.

TABLE 5(KP-I)A.2.1. SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL

Article 3.3 activities: Deforestation ⁽¹⁾

Units of land otherwise subject to elected activities under Article 3.4 (information item)

Country
Year
Submission

GEOGRAPHICAL LOCATION ⁽²⁾	ACTIVITY DATA	
Identification code	Subdivision ⁽³⁾	Area subject to the activity (kha)
Total for activity A.2.1.		
<i>[specify identification code]</i>		
...	<i>[specify subdivision]</i>	
...	<i>[specify subdivision]</i>	
<i>[specify identification code]</i>		
...	...	

Documentation box

Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ Units of lands subject to Deforestation under Article 3.3 otherwise subject to elected activities under Article 3.4 are implicitly included under A.2. They are reported here for transparency and to fulfil the requirement of paragraph 6 (b) (ii) of the annex to decision 15/CMP.1.

⁽²⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Deforestation which would otherwise be included in land subject to elected activities under Article 3.4.

⁽³⁾ Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.

TABLE 5(KP-DB.1. SUPPLEMENTARY BACKGROUND DATA ON CARBON STOCK CHANGES AND NET CO₂ EMISSIONS AND REMOVALS FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
 Elected Article 3.4 activities: Forest Management⁽¹⁾

Country
 Year
 Submission

GEOGRAPHICAL LOCATION ⁽²⁾		ACTIVITY DATA			IMPLIED CARBON STOCK CHANGE FACTORS ⁽⁶⁾								Implied emission/ removal factor per area ⁽⁸⁾ (Mg CO ₂ /ha)	CHANGE IN CARBON STOCK ⁽⁶⁾								Net CO ₂ emissions/ removals ⁽⁸⁾ (Gg CO ₂)			
Identification code	Subdivision ⁽³⁾	Area subject to the activity (kha)	Area of organic soils ⁽⁷⁾ (kha)	Carbon stock change in above-ground biomass per area ^{(4), (5)}			Carbon stock change in below-ground biomass per area ^{(4), (5)}			Net carbon stock change in litter per area ⁽⁴⁾	Net carbon stock change in dead wood per area ⁽⁴⁾	Net carbon stock change in soils per area ⁽⁴⁾		Carbon stock change in above-ground biomass ^{(4), (5)}			Carbon stock change in below-ground biomass ^{(4), (5)}			Net carbon stock change in litter ⁽⁴⁾	Net carbon stock change in dead wood ⁽⁴⁾		Net carbon stock change in soils ⁽⁴⁾		
				Gains	Losses	Net change	Gains	Losses	Net change			Mineral soils		Organic soils	Gains	Losses	Net change	Gains	Losses				Net change	Mineral soils	Organic soils ⁽⁹⁾
Total for activity B.1																									
[specify identification code]	[specify subdivision]																								
[specify identification code]	[specify subdivision]																								
[specify identification code]	[specify subdivision]																								
...	...																								

Documentation box
 Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR. Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

(1) If Forest Management has been elected, report here information on anthropogenic carbon stock change for the inventory year for all geographical locations that encompass land subject to Forest Management under Article 3.4.
 (2) Geographical location refers to the boundaries of the areas that encompass land subject to Forest Management (if elected).
 (3) Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.
 (4) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).
 (5) 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. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.
 (6) Note that net change corresponds to increase / decrease of carbon stock (see table 4.2.6a of the IPCC good practice guidance for LULUCF).
 (7) This information is needed for the calculation of the net carbon stock changes in soils per area.
 (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 CO₂ by multiplying C by 44/12 and changing the sign for net CO₂ removals to be negative (-) and for net CO₂ emissions to be positive (+).
 (9) The value reported here is an emission and not a carbon stock change.

TABLE 5(KP-1)B.2 SUPPLEMENTARY BACKGROUND DATA ON CARBON STOCK CHANGES AND NET CO₂ EMISSIONS AND REMOVALS FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
Elected Article 3.4 activities: Cropland Management ^{(1), (2)}

Country
Year
Submission

GEOGRAPHICAL LOCATION ⁽³⁾	ACTIVITY DATA			IMPLIED CARBON STOCK CHANGE FACTORS ⁽⁷⁾									Implied emission/removal factor per area ⁽¹⁰⁾	CHANGE IN CARBON STOCK ⁽⁷⁾									Net CO ₂ emissions/removals ⁽¹⁰⁾					
	Identification code	Subdivision ⁽⁴⁾	Area subject to the activity	Area of organic soils ⁽⁹⁾	Carbon stock change in above-ground biomass per area ^{(5), (6)}			Carbon stock change in below-ground biomass per area ^{(5), (6)}			Net carbon stock change in litter per area ⁽⁵⁾	Net carbon stock change in dead wood per area ⁽⁵⁾		Net carbon stock change in soils per area ⁽⁵⁾		Carbon stock change in above-ground biomass ^{(5), (6)}			Carbon stock change in below-ground biomass ^{(5), (6)}			Net C stock change in litter ⁽⁵⁾		Net carbon stock change in dead wood ⁽⁵⁾	Net carbon stock change in soils ⁽⁵⁾		Net CO ₂ emissions/removals ⁽¹⁰⁾	
					Gains	Losses	Net change	Gains	Losses	Net change				Mineral soils	Organic soils	Gains	Losses	Net change	Gains	Losses	Net change				Mineral soils	Organic soils ⁽⁸⁾		Net CO ₂ emissions/removals ⁽¹⁰⁾
Total for activity B.2																												
[specify identification code]																												
	[specify subdivision]																											
	[specify subdivision]																											
[specify identification code]																												
	[specify subdivision]																											
...	..																											

Documentation box
Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

- (1) If Cropland Management has been elected, report here information on anthropogenic carbon stock change for the inventory year for all geographical locations that encompass land subject to Cropland Management under Article 3.4.
- (2) If Cropland Management has been elected, this table and all relevant tables should also be reported for the base year for Cropland Management.
- (3) Geographical location refers to the boundaries of the areas that encompass land subject to Cropland Management (if elected).
- (4) Activity data may be further subdivided according to climate zone, management system, soil type, vegetation type, tree species, ecological zone, national land classification or other criteria. Complete one row for each subdivision.
- (5) The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).
- (6) 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. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.
- (7) Note that net change corresponds to increase / decrease of carbon stock (see table 4.2.6b of the IPCC good practice guidance for LULUCF).
- (8) The value reported here is an emission and not a carbon stock change.
- (9) This information is needed for the calculation of the net carbon stock changes in soils per area.
- (10) 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 changing the sign for net CO₂ removals to be negative (-) and for net CO₂ emissions to be positive (+).

**TABLE 5(KP-II)1 SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY
 ACTIVITIES UNDER THE KYOTO PROTOCOL**
Direct N₂O emissions from N fertilization ^{(1),(2)}

Country
 Year
 Submission

Identification code of geographical location	ACTIVITY DATA	IMPLIED EMISSION FACTOR	EMISSIONS
	Total amount of fertilizer applied (Gg N/year)	N ₂ O-N emissions per unit of fertilizer (kg N ₂ O-N/kg N) ⁽³⁾	N ₂ O (Gg)
A.1.1. Afforestation/Reforestation: units of land not harvested since the beginning of the commitment period ⁽⁴⁾			
<i>[specify identification code]</i>			
...			
A.1.2. Afforestation/Reforestation: units of land harvested since the beginning of the commitment period ⁽⁴⁾			
<i>[specify identification code]</i>			
...			
B.1. Forest Management (if elected) ⁽⁵⁾			
<i>[specify identification code]</i>			
...			

Documentation box
 Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ N₂O emissions from fertilization for Cropland Management, Grazing Land Management and Revegetation should be reported in the Agriculture sector. If a Party is not able to separate fertilizer applied to Forest Land from Agriculture, it may report all N₂O emissions from fertilization in the Agriculture sector. This should be explicitly indicated in the documentation box.

⁽²⁾ Direct N₂O emissions from fertilization are estimated following section 3.2.1.4.1 of the IPCC good practice guidance for LULUCF based on the amount of fertilizer applied to land under Forest Management. The indirect N₂O emissions from Afforestation and Reforestation and land under Forest Management are estimated as part of the total indirect emissions in the Agriculture sector based on the total amount of fertilizer used in the country. Parties should show that double counting of N₂O emissions from fertilization with Agriculture sector estimates has been avoided.

⁽³⁾ In the calculation of the implied emission factor, N₂O emissions are converted to N₂O-N by multiplying by 28/44.

⁽⁴⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Afforestation and Reforestation.

⁽⁵⁾ Geographical location refers to the boundaries of the areas that encompass land subject to Forest Management (if elected).

TABLE 5(KP-II)2 SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
Elected Article 3.4 activities: Forest Management
N₂O emissions from drainage of soils ^{(1), (2)}

Country
Year
Submission

Identification code of geographical location ⁽³⁾	ACTIVITY DATA	IMPLIED EMISSION FACTOR	EMISSIONS
	Area of drained soils (kha)	N ₂ O-N per area drained (kg N ₂ O-N/ha) ⁽⁴⁾	N ₂ O (Gg)
B.1. Forest Management (if elected)			
<i>Total for organic soils</i>			
<i>Total for mineral soils</i>			
<i>[specify identification code]</i>			
Organic soils			
Mineral soils			
...			

Documentation box

Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

⁽¹⁾ Methodologies for estimating N₂O emissions from drainage of soils are not addressed in the Revised 1996 IPCC Guidelines, but Appendix 3a.2 of the IPCC good practice guidance for LULUCF provides methodologies for consideration.

⁽²⁾ N₂O emissions from drainage of soils include those resulting from Forest Management. N₂O emissions from drained Cropland and Grassland soils are covered in the Agriculture sector under Cultivation of Histosols.

⁽³⁾ Geographical location refers to the boundaries of the areas that encompass land subject to Forest Management (if elected).

⁽⁴⁾ In the calculation of the implied emission factor, N₂O emissions are converted to N₂O-N by multiplying by 28/44.

TABLE 5(KP-II)3 SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL

N₂O emissions from disturbance associated with land-use conversion to cropland ^{(1), (2)}

Country
Inventory Year
Submission

Identification code of geographical location	ACTIVITY DATA	IMPLIED EMISSION FACTOR	EMISSIONS
	Land area converted (kha)	N ₂ O-N per area converted ⁽⁵⁾ (kg N ₂ O-N/ha)	N ₂ O (Gg)
A.2. Deforestation ^{(3), (6)}			
<i>Total organic soils</i>			
<i>Total mineral soils</i>			
<i>[specify identification code]</i>			
Organic soils ^{(7), (10)}			
Mineral soils ⁽⁷⁾			
...			
B.2. Cropland Management (if elected) ^{(4), (8)}			
<i>Total organic soils</i>			
<i>Total mineral soils</i>			
<i>[specify identification code]</i>			
Organic soils ^{(7), (10)}			
Mineral soils ⁽⁷⁾			
...			
Information items ⁽⁹⁾			
A.2.1. Deforestation: units of land otherwise subject to elected activities under Article 3.4 ⁽⁶⁾			
<i>Total organic soils</i>			
<i>Total mineral soils</i>			
<i>[specify identification code]</i>			
Organic soils ^{(7), (10)}			
Mineral soils ⁽⁷⁾			
...			

Documentation box

Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR. Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

- ⁽¹⁾ Methodologies for N₂O emissions from disturbance associated with land-use conversion to Croplands are found in section 3.3.2.3.1.1 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 here. Parties should avoid double counting with N₂O emissions from drainage and from cultivation of organic soils reported in Agriculture under Cultivation of Histosols.
- ⁽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 Management when Cropland is remaining Cropland are included in the Agriculture sector.
- ⁽³⁾ Geographical location refers to the boundaries of the areas that encompass units of land subject to Deforestation.
- ⁽⁴⁾ Geographical location refers to the boundaries of the areas that encompass land subject to Cropland Management, if elected.
- ⁽⁵⁾ In the calculation of the implied emission factor, N₂O emissions are converted to N₂O-N by multiplying by 28/44.
- ⁽⁶⁾ N₂O emissions associated with Deforestation followed by the establishment of Cropland should be reported under Deforestation even if Cropland Management is not elected under Article 3.4.
- ⁽⁷⁾ Parties may separate data for organic and mineral soils, if they have data available.
- ⁽⁸⁾ This includes N₂O emissions in land subject to Cropland Management from disturbance of soils due to the conversion to Cropland of lands other than Forest Lands.
- ⁽⁹⁾ Units of land subject to Deforestation under Article 3.3 otherwise subject to elected activities under Article 3.4 are implicitly included under A.2. They are reported here for transparency and to fulfil the requirement of paragraph 6 (b) (ii) of the annex to decision 15/CMP.1.
- ⁽¹⁰⁾ N₂O emissions from Cropland are included in the Agriculture sector.

TABLE 5(KP-II)4 SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL

Carbon emissions from lime application ⁽¹⁾

Country
Inventory Year
Submission

Identification code of geographical location ⁽²⁾	ACTIVITY DATA	IMPLIED EMISSION FACTOR	EMISSIONS
	Total amount of lime applied (Mg/year)	Carbon emission per unit of lime (Mg C/Mg)	Carbon (Gg)
A.1.1. Afforestation/Reforestation: units of land not harvested since the beginning of the commitment period ^{(2), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
A.1.2. Afforestation/Reforestation: units of land harvested since the beginning of the commitment period ^{(2), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
A.2. Deforestation ^{(3), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
B.1. Forest Management (if elected) ^{(4), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
B.2. Cropland Management (if elected) ^{(5), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
B.3. Grazing Land Management (if elected) ^{(6), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			
B.4. Revegetation (if elected) ^{(7), (8), (9)}			
<i>Total for limestone</i>			
<i>Total for dolomite</i>			
<i>[specify identification code]</i>			
Limestone (CaCO ₃)			
Dolomite (CaMg(CO ₃) ₂)			
...			

Documentation box

Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR: Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

- (1) Carbon emissions from agricultural lime application are addressed in sections 3.3.1.2.1.1 and 3.3.2.1.1.1 of the IPCC good practice guidance for LULUCF
- (2) Geographical locations refers to the boundaries of the areas that encompass units of land subject to Afforestation and Reforestation.
- (3) Geographical locations refers to the boundaries of the areas that encompass units of land subject to Deforestation.
- (4) Geographical locations refers to the boundaries of the areas that encompass land subject to Forest Management, if elected.
- (5) Geographical locations refers to the boundaries of the areas that encompass land subject to Cropland Management, if elected.
- (6) Geographical locations refers to the boundaries of the areas that encompass land subject to Grazing Land Management, if elected.
- (7) Geographical locations refers to the boundaries of the areas that encompass land subject to Revegetation, if elected.
- (8) If Parties are not able to separate lime application for different geographical locations, they should include liming for all geographical locations in the total.
- (9) A Party may report aggregate estimates for total lime applications when data are not available for limestone and dolomite.

TABLE 5(KP-1)5 SUPPLEMENTARY BACKGROUND DATA FOR LAND USE, LAND-USE CHANGE AND FORESTRY ACTIVITIES UNDER THE KYOTO PROTOCOL
GHG emissions from biomass burning

Country
Inventory Year
Submission

Identification code of geographical location	ACTIVITY DATA			IMPLIED EMISSION FACTOR			EMISSIONS		
	Description ⁽⁷⁾	Unit	Values	CO ₂	CH ₄	N ₂ O	CO ₂ ⁽⁸⁾	CH ₄ ⁽⁸⁾	N ₂ O
	Area (AB) or biomass burned (BB)	ha or kg dm		(Mg/activity data unit)			(Gg)		
A.1.1. Afforestation/Reforestation: units of land not harvested since the beginning of the commitment period^{(1),(9)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
A.1.2. Afforestation/Reforestation: units of land harvested since the beginning of the commitment period^{(1),(9)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
A.2. Deforestation^{(3),(9)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
B.1. Forest Management (if elected)^{(3),(9)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
B.2. Cropland Management (if elected)^{(4),(9),(10)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
B.3. Grazing Land Management (if elected)^{(6),(9),(11)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									
B.4. Revegetation (if elected)^{(6),(9)}									
<i>Total for controlled burning</i>									
<i>Total for wildfires</i>									
[specify identification code]									
Controlled burning									
Wildfires									
...									

Documentation box

Parties should provide detailed explanation on the land use, land-use change and forestry sector in the relevant annex of the NIR. Supplementary information on LULUCF activities under the Kyoto Protocol. Use this documentation box to provide references to relevant sections of the NIR if any additional details are needed to understand the content of this table.

- (1) Geographical locations refers to the boundaries of the areas that encompass units of land subject to Afforestation and Reforestation.
- (2) Geographical location refers to the boundaries of the areas that encompass units of land subject to Deforestation.
- (3) Geographical location refers to the boundaries of the areas that encompass land subject to Forest Management, if elected.
- (4) Geographical location refers to the boundaries of the areas that encompass land subject to Cropland Management, if elected.
- (5) Geographical location refers to the boundaries of the areas that encompass land subject to Grazing Land Management, if elected.
- (6) Geographical location refers to the boundaries of the areas that encompass land subject to Revegetation, if elected.
- (7) For each activity, activity data should be selected between area burned (AB) or biomass burned (BB). Units will be ha for area burned, and kg dm for biomass burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.
- (8) If CO₂ emissions from biomass burning are not already included in Tables 5(KP-1)A.1.1 to 5(KP-1)B.4, they should be reported here. This also includes the carbon component of CH₄. This should be clearly documented in the documentation box and in the NIR. Parties that include all carbon stock changes in the carbon stock tables (5(KP-1)A.1.1 to 5(KP-1)B.4) should report IE (included elsewhere) in the CO₂ column.
- (9) Parties should report controlled/prescribed burning and wildfires emissions separately, where appropriate.
- (10) Burning of agricultural residues is included in the Agriculture sector.
- (11) Greenhouse gas emissions from prescribed savannah burning are reported in the Agriculture sector.

INFORMATION TABLE ON ACCOUNTING FOR ACTIVITIES UNDER ARTICLES 3.3 AND 3.4 OF THE KYOTO PROTOCOL

Commitment period accounting
 Annual accounting

Country
 Inventory Year
 Submission

Number of the reported year in the commitment period:

GREENHOUSE GAS SOURCE AND SINK ACTIVITIES	BY ⁽⁵⁾	Net emissions/removals ⁽¹⁾					Accounting Parameters ⁽⁷⁾	Accounting Quantity ⁽⁸⁾	
		2008	2009	2010	2011	2012			Total ⁽⁶⁾
		(Gg CO ₂ equivalent)							
A. Article 3.3 activities									
A.1. Afforestation and Reforestation									
A.1.1. Units of land not harvested since the beginning of the commitment period ⁽²⁾									
A.1.2. Units of land harvested since the beginning of the commitment period ⁽²⁾									
<i>[specify identification code]</i>									
A.2. Deforestation									
B. Article 3.4 activities									
B.1. Forest Management (if elected)									
3.3 offset ⁽³⁾									
FM cap ⁽⁴⁾									
B.2. Cropland Management (if elected)									
B.3. Grazing Land Management (if elected)									
B.4. Revegetation (if elected)									

⁽¹⁾ All values are reported in table 5(KP) of the CRF for the relevant inventory year as reported in the current submission and are automatically entered in this table.

⁽²⁾ In accordance with paragraph 4 of the annex to decision 16/CMP.1, debits resulting from harvesting during the first commitment period following Afforestation and Reforestation since 1990 shall not be greater than credits accounted for on that unit of land.

⁽³⁾ In accordance with paragraph 10 of the annex to decision 16/CMP.1, a Party included in Annex I that incurs a net source of emissions under the provisions of Article 3.3, may account for anthropogenic greenhouse gas emissions by sources and removals by sinks in areas under forest management under Article 3.4, up to a level that is equal to the net source of emissions under the provisions of Article 3.3, but not greater than 9.0 megatonnes of carbon times five, if the total anthropogenic greenhouse gas emissions by sources and removals by sinks in the managed forest since 1990 are equal to, or larger than, the net source of emissions incurred under Article 3.3.

⁽⁴⁾ In accordance with paragraph 11 of the annex to decision 16/CMP.1, additions to and subtractions from the assigned amount of a Party resulting from forest management under Article 3.4, after the application of paragraph 10 of the annex to decision 16/CMP.1 and resulting from forest management project activities undertaken under Article 6, shall not exceed the value inscribed in the appendix of the annex to decision 16/CMP.1, multiplied by five.

⁽⁵⁾ Net emissions and removals in the Party's base year, as established by decision 9/CP.2.

⁽⁶⁾ Cumulative net emissions and removals for all years of the commitment period reported in the current submission.

⁽⁷⁾ The values in the cells "3.3 offset" and "FM cap" are absolute values.

⁽⁸⁾ The accounting quantity is the total quantity of units to be added to or subtracted from a Party's assigned amount for a particular activity in accordance with the provisions of Article 7.4 of the Kyoto Protocol.