Session III: Discussion on the ETF GHG Inventory Reporting Tool
Breakout Group 1: Agriculture, LULUCF

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ATSUKO HAYASHI
HIROSHI ITO
SAORI AKIMOTO
TAKEHIRO SUGIYAMA

Greenhouse Gas Inventory Office of Japan (GIO)
National Institute for Environmental Studies (NIES)

Objectives

- In this session, participants will discuss operational issues related to the ETF GHG Inventory Reporting Tool (ETF tool) and explore possible solutions.
- This Session is intended as a follow-up to the hands-on training conducted at the last WGIA.
- Since we are at different stages regarding the CRT submission, the countries that have submitted their CRTs can share their experiences to support countries facing the same issues when preparing to submit the CRTs.
- We can also discuss issues directly with people from UNFCCC and IPCC.

Procedures

- The session will be 16:30-18:00 (90 minutes).
- Introduction (5 minutes)
- Group discussion (85 minutes)
  1. The issues raised from the questionnaires will be discussed
  2. Issues raised from the floor will be discussed
  3. Issues identified by GIO will be shared

Break out Group 2: Agriculture, LULUCF

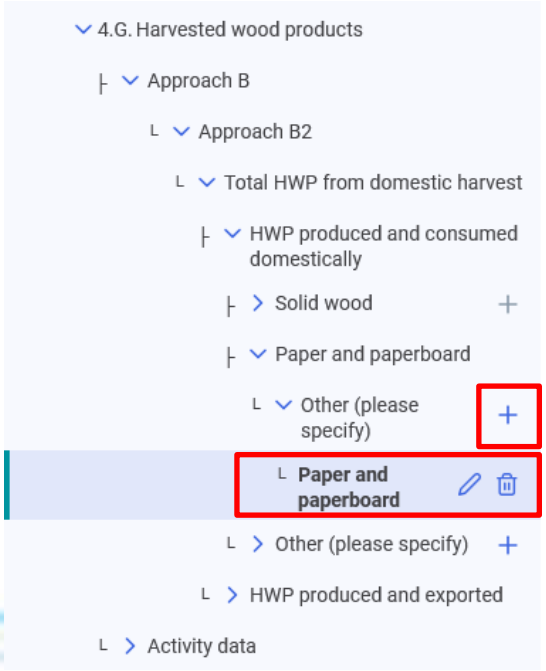
[Issue 1] How to deal with missing data for HWP (raised by Laos)
1-1: All values appear to be correctly entered for all inventory years on the ETF tool, however, the value for some years appears to be missing when generating the CRT.
1-2: How and where to input missing data for generated CRTs for the submission.

[Suggestion from GIO]
1-1: Reporting tables are generated for the version loaded when opening the application. Users must wait for the Data Synchronized icon to confirm before generating reports (from Virtual Q&A Sessions – March 13-14, 2025, provided by tool support).
1-2: It would be recommended not to overwrite the generated CRT tables, as doing so would prevent the use of data from them in the UNFCCC database.
We also note that it is required to enter "net emissions/removals-CO_2" as well as "Annual stock changes" to reflect the total emissions/removals, because the tool does not automatically calculate CO_2 values from annual stock changes.

Break out Group 2: Agriculture, LULUCF

[Issue 1] How to deal with missing data for HWP (raised by Laos) (continued.)
1-3: Unable to import the 'Paper and Paperboard Production' activity data for all inventory years.

[Suggestion from GIO]
1-3: You should go to “data entry” tab to create a new node under “Paper and paperboard”> “Other(please specify)” to enable data entry.



Create a new node

Break out Group 2: Agriculture, LULUCF

[Issue 2] Where should the EFs be entered into? (raised by Brunei)
It is unclear where to input the EF etc.

[Suggestion from GIO]
There are no cells required to be entered for the EFs in the Tool. On the other hand, Implied Emission Factors (IEFs: Emissions divided by Activity data) are automatically calculated and displayed in the CRTs. These IEFs can be utilized to identify mistakes in Emissions or Activity data entry.
However, there are some fields which should be entered by some parameters in Agriculture sector.
Please provide an example from your country where challenges were encountered in filling out the necessary information.

Break out Group 2: Agriculture, LULUCF

[Issue 3] How should areas in land-transition matrix and ADs for each land-use category be filled ? (from GIO)

There are some fields where the area of land-use or area of land converted to other land use have to be entered.
Some countries are not able to enter those data in accordance with the 2006 IPCC guidelines/ the notes in the CRTs.

[Suggestion from GIO]

Land transition matrix (Table 4.1):

Provide estimation in accordance with the approach.

Table 4.A-4.F: ADs for each land-use category

Although several kinds of activity data are required for estimations,
Areas for land remaining in a land use: Areas of land remaining in the same land use more than transition period (default: 20 years) should be filled.
Areas for land converted from other land use : Accumulated annual change within the transition period (default: 20 years) should be filled

It is important to ensure that each total area of the land-use category matches the corresponding total in the land transition matrix.

How should areas in land-transition matrix be filled ? (Cont'd)

Land transition matrix (Table 4.1)

Approach 1

TO: / FROM:	Forest land (managed)	Forest land (unmanaged)	Cropland	Grassland (managed)	Grassland (unmanaged)	Wetlands (managed)	Wetlands (unmanaged)	Settlements	Other land	Total unmanaged land	Initial area
	(kha)										
Forest land (managed) [2]	2,687.73	NO	NO	NO	NO	NO	NO	NO	NO	IE	2,687.73
Forest land (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	IE	IE,NO
Cropland [2]	NO	NO	113.45	NO	NO	NO	NO	NO	NO	IE	113.45
Grassland (managed) [2]	NO	NO	NO	717.07	NO	NO	NO	NO	NO	IE	717.07
Grassland (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	IE	IE,NO
Wetlands (managed) [2]	NO	NO	NO	NO	NO	24.13	NO	NO	NO	IE	24.13
Wetlands (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	IE	IE,NO
Settlements [2]	NO	NO	NO	NO	NO	NO	NO	24.40	NO	IE	24.40
Other land [2]	NO	NO	NO	NO	NO	NO	NO	NO	269.88	IE	269.88
Total unmanaged land [3]	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Final area	2,687.73	IE,NO	113.45	717.07	IE,NO	24.13	IE,NO	24.40	269.88	IE	3,836.65
Net change [4]	0.00	IE,NO	0.00	0.00	IE,NO	0.00	IE,NO	0.00	0.00	IE	0.00

NA

Area of land-use (X) remaining in the land-use (X) in the year = Final area

Note:
For Parties using reporting approach 1 to represent land areas, only data on the initial and final area per land use should be included. "NA" should then be used for the specific land-use transitions, allowing for the formulas in the cells for final and initial areas to be overwritten.

Approach 2 or 3

TO: / FROM:	Forest land (managed)	Forest land (unmanaged)	Cropland	Grassland (managed)	Grassland (unmanaged)	Wetlands (managed)	Wetlands (unmanaged)	Settlements	Other land	Total unmanaged land	Initial area
	(kha)										
Forest land (managed) [2]	24,946.01	NO	0.36	0.36	NO	0.04	NO	2.78	1.25	NO	24,950.81
Forest land (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Cropland [2]	0.04	NO	3,957.94	0.49	NO	NO	NO	18.62	0.98	NO	3,978.07
Grassland (managed) [2]	0.05	NO	0.01	897.01	NO	NO	NO	2.93	0.15	NO	900.14
Grassland (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Wetlands (managed) [2]	NO	NO	NO	NO	NO	1,349.94	NO	IE	IE	NO	1,349.94
Wetlands (unmanaged) [2]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Settlements [2]	NO	NO	IE	NO	NO	0.00	NO	3,870.67	IE	NO	3,870.67
Other land [2]	NO	NO	6.71	1.20	NO	0.02	NO	NO	2,739.91	NO	2,747.84
Total unmanaged land [3]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Final area	24,946.10	NO	3,965.01	899.07	NO	1,350.00	NO	3,895.00	2,742.29	NO	37,797.48
Net change [4]	-4.71	NO	-13.06	-1.08	NO	0.06	NO	24.33	-5.54	NO	0.00

Area of land-use (X) remaining in the land-use (X) in the year

Area converted from other land-use to the land-use (X) in the year (**Annual change**)

※ In the case with no unmanaged land

How should ADs for each land-use category be filled ? (Cont'd)

Activity data:

Table 4.A-4.F

Land remaining in a land-use category

Biomass gains from its growth/CSC in DOM/soil:

Area of land-use (X) remaining in the land-use (X) for more than transition period (default: 20 years)

Biomass losses from degradation:

Degraded area in the year

Land converted from other land-use category

Biomass losses from previous land use/ gains after conversion for annual crop:

Area converted from other land-use to the land-use (X) in the year (**Annual change**)

Σ transition period (annual change)

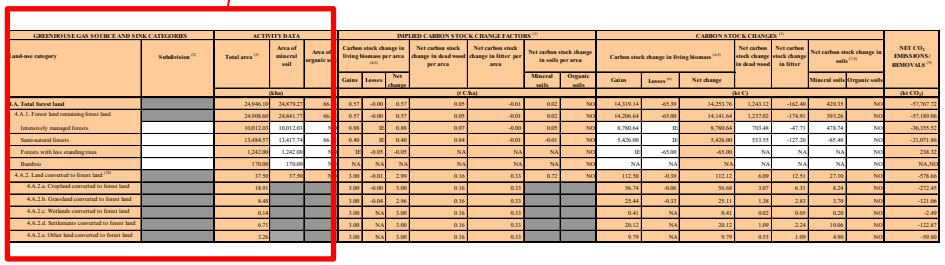
Biomass gains from growth after land conversion/ CSC in mineral after land conversion :

Accumulated annual change within the transition period (default: 20 years)

Data input for CRTs:

e.g., Table 4.A

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA		
Land-use category	Subdivision (2)	Total area (3)	Area of mineral soil	Area of organic soil
		(kha)		
4.A. Total forest land		24,946.10	24,879.27	66.83
4.A.1. Forest land remaining forest land		24,908.60	24,841.77	66.83
Intensively managed forests		10,012.03	10,012.03	NO
Semi-natural forests		13,484.57	13,417.74	66.83
Forests with less standing trees		1,242.00	1,242.00	NO
Bamboo		170.00	170.00	NO
4.A.2. Land converted to forest land (10)		37.50	37.50	NO
4.A.2.a. Cropland converted to forest land		18.91		
4.A.2.b. Grassland converted to forest land		8.48		
4.A.2.c. Wetlands converted to forest land		0.14		
4.A.2.d. Settlements converted to forest land		6.71		
4.A.2.e. Other land converted to forest land		3.26		



How should ADs for each land-use category be filled ? (Cont'd)

Area of total land-use (X)

Land transition matrix (Table 4.1) ..

Area of land-use (X) remaining in the land-use (X) in the year | Annual change

Match the total

Table 4.A-4.F .....

Area of land-use (x) remaining in the land-use (X) for more than 21 years | Σ 20 (annual change)

※ Transition period=20 years

e.g., Table 4.A

Inventory year=2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA			IMPLIED CARBON STOCK CHANGE FACTORS [1]							CARBON STOCK CHANGES [1]							NET CO_2 EMISSIONS/ REMOVALS [9]
Land-use category	Subdivision [2]	Total area [3]	Area of mineral soil	Area of organic soil	Carbon stock change in living biomass per area [4,5]			Net carbon stock change in dead wood per area	Net carbon stock change in litter per area	Net carbon stock change in soils per area		Carbon stock change in living biomass [4,5]			Net carbon stock change in dead wood	Net carbon stock change in litter	Net carbon stock change in soils [7,8]		
					Gains	Losses	Net change			Mineral soils	Organic soils	Gains	Losses [6]	Net change			Mineral soils	Organic soils	
		(kha)			(t C/ha)							(kt C)							(kt CO_2)
4.A. Total forest land		24,946.10	24,879.27	66.83	0.57	-0.00	0.57	0.05	-0.01	0.02	NO	14,319.14		14,253.76	1,243.12	-162.40	420.35	NO	-57,767.72
4.A.1. Forest land remaining forest land		24,908.60	24,841.77	66.83	0.57	-0.00	0.57	0.05	-0.01	0.02	NO	14,206.6	-65.00	14,141.64	1,237.02	-174.91	393.26	NO	-57,189.06
Intensively managed forests		10,012.03	10,012.03	NO	0.88	IE	0.88	0.07	-0.00	0.05	NO	8,780.6	IE	8,780.64	703.48	-47.71	478.74	NO	-36,355.52
Semi-natural forests		13,484.57	13,417.74	66.83	0.40	IE	0.40	0.04	-0.01	-0.01	NO	5,426.0	IE	5,426.00	533.55	-127.20	-85.48	NO	-21,071.86
Forests with less standing trees		1,242.00	1,242.00	NO	IE	-0.05	-0.05	NA	NA	NA	NO		-65.00	-65.00	NA	NA	NA	NO	238.32
Bamboo					NA	NA	NA	NA	NA	NA	NO			NA	NA	NA	NA	NO	NA,NO
4.A.2. Land converted to forest land [10]		37.50	37.50	NO	3.00	-0.01	2.99	0.16	0.33	0.72	NO	112.5	-0.39	112.12	6.09	12.51	27.10	NO	-578.66
4.A.2.a. Cropland converted to forest land		18.91			3.00	-0.00	3.00	0.16	0.33			56.7	-0.06	56.68	3.07	6.31	8.24	NO	-272.45
4.A.2.b. Grassland converted to forest land		8.48			3.00	-0.04	2.96	0.16	0.33			25.4	-0.33	25.11	1.38	2.83	3.70	NO	-121.06
4.A.2.c. Wetlands converted to forest land		0.14			3.00	NA	3.00	0.16	0.33			0.4	NA	0.41	0.02	0.05	0.20	NO	-2.49
4.A.2.d. Settlements converted to forest land		6.71			3.00	NA	3.00	0.16	0.33			20.1	NA	20.12	1.09	2.24	10.06	NO	-122.87
4.A.2.e. Other land converted to forest land		3.26			3.00	NA	3.00	0.16	0.33			9.7	NA	9.79	0.53	1.09	4.90	NO	-59.80

Σ (annual change) from 1981 - 2000

AD used: Annual change in 2000

Break out Group 2: Agriculture, LULUCF

[Issue 4] No estimation for 4(III) (raised by GIO)
There are some countries that have not estimated 4(III), although some ADs are available. What issues are these countries facing?

[Suggestion from GIO]

If the carbon losses in mineral soils are occurred, N_2O emissions from N mineralization associated with loss of soil organic matter (4(III)) should be estimated by using the amount of loss estimated at each land-use, especially in the land converted from other land-use category.

The estimation method:
Tier 1 method (Eq 11.8 Ch.11 of the 2006 IPCC Guidelines) and a default emission factor of 0.01 kg N2O-N/kg N (2006 IPCC Guidelines, Chapter 11, Table 11.1) are available.

No estimation for 4(III) (Cont'd)

Table 4.B

Country A 2021

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			CARBON STOCK CHANGES (1)						NET CO_2 EMISSIONS/ REMOVALS (11)
Land-use category	Total area (3)	Area of mineral soil	Area of organic soil	Carbon stock change in living biomass (4,5,6)			Net carbon stock change in dead organic matter (8)	Net carbon stock change in soils (9,10)		
				Gains	Losses (7)	Net change		Mineral soils	Organic soils	
	(kha)			(kt C)						(kt CO_2)
4.B. Total cropland	127,516.40	127,516.40	NA	IE,NA	-315.90	-315.90	-37.0	-1,035.30	NA	-106,162.33
4.B.1. Cropland remaining cropland	114,381.80	114,381.80	NA	NA	NA	NA	NA	30,341.66	NA	-111,252.77
4.B.2. Land converted to cropland (12)	13,134.6	13,134.60	NA	IE,NA	-315.90	-315.90	-37.0	-1,035.30	NA	5,090.44
4.B.2.e. Other land converted to cropland	4,084.50			NA	NA	NA	NA	-41.69	NA	152.86

ADs for 4(III)

Table 4.III

Country A 2021

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION		IMPLIED EMISSION FACTORS		N_2O EMISSIONS		
Land-use category (2)	Area (3)	N mineralised in mineral soils associated with loss of soil C from soil organic matter (4)	N_2O–N emissions per area (5)	N_2O–N emissions per unit of N lost through leaching and run-off	Direct Emissions	Indirect Emissions (4,6)	Total Emissions
	(kha)	(t N/year)	(kg N_2O–N/ha)	(kg N_2O–N/kg N)	(kt)		
4(III). Total for all land-use categories	376,040.90	NE	NE	NE	NE	NE	NE
4(III).A. Forest land (7)	NA	NE	NE	NE	NE	NE	NE
4(III).A.1. Forest land remaining forest land	NA	NE	NE	NE	NE	NE	NE
4(III).A.2. Lands converted to forest land (8)	NA	NE	NE	NE	NE	NE	NE
4(III).B. Cropland (2)(7)	13,134.60	NE	NE	NE	NE	NE	NE
4(III).B.2. Lands converted to cropland (7)(8)	13,134.60	NE	NE	NE	NE	NE	NE
4(III).F. Other land (7)	1,137.74	NE	NE	NE	NE	NE	NE
4(III).F.2. Lands converted to other land (8)	1,137.74	NE	NE	NE	NE	NE	NE

Accumulated annual change within the transition period (default: 20 years)