IPCC Expert Meeting on Reconciling land use emissions

9-11th July 2024, Ispra (Italy)

Overview of current reporting in National GHG inventories

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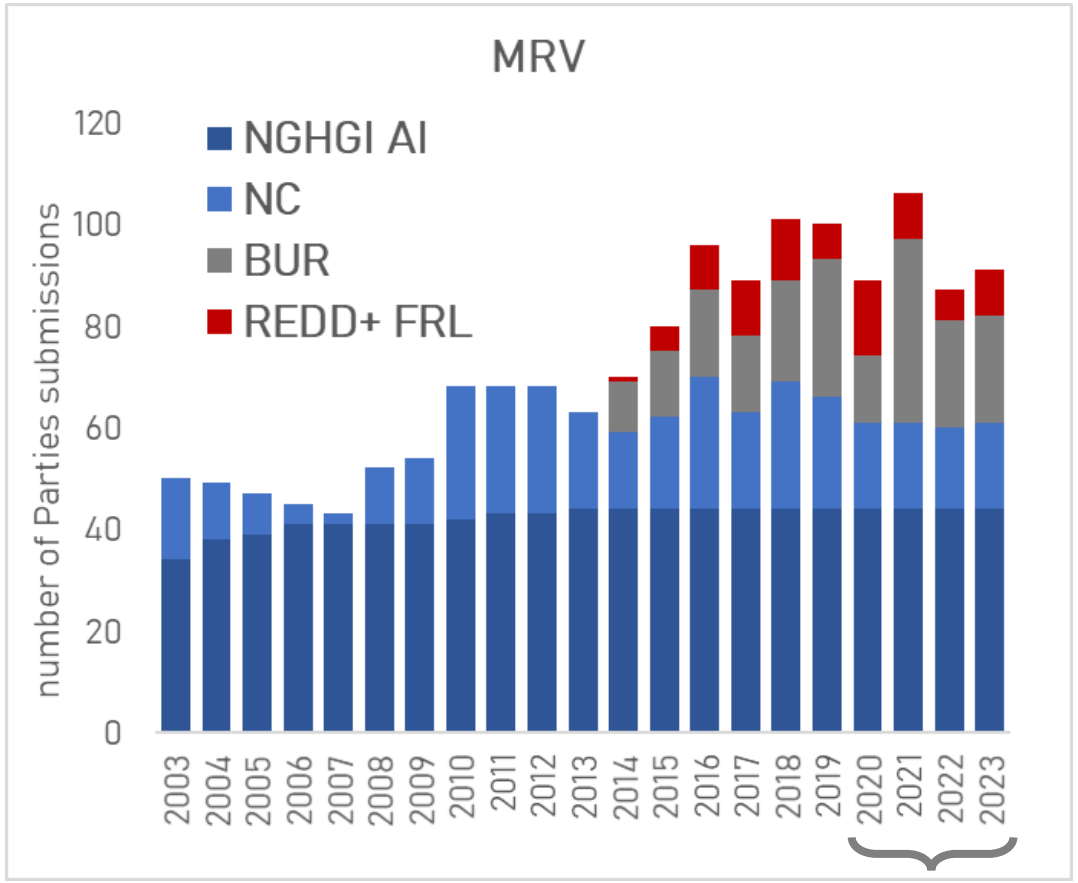
Overview of current reporting in National GHG inventories

Update of the JRC NGHGI database.



85% of data in the database was submitted after 2020

Grassi et al., 2022

Table 1. Overview of the main characteristics of the sources of data used in this study.

	DATASET USED		CO_2 flux	Forest area	Latest update	Time series	Comment by the authors
Annex I	GHGI	GHG Inventories	All land uses	Yes	2021	1990–2019	Rather complete and generally reli-

Source	n. of countries used in our database	Managed forest area	
		Mha	%
Annual GHG Inventory	43	1,603	46%
National Communication (NC) or Biennial Update Report (BUR)	120	1,732	50%
REDD+	13	99	3%
NDC	9	34	1%
No LULUCF estimate	10	4	0.1%
Total	195	3,473	

NDC	Nationally determined contributions (NDCs) https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx	Mostly FL and DEF	Yes, FRA 2020 used to gap fill	Mostly from 2021	Varies from country to country	The quantity and quality of information varies considerably among countries; typically, much less information is provided than NC/BUR or REDD+, and the methodological basis is not always clear. Not assessed by UNFCCC experts, but when nothing better was available, it is used here because it is a highly relevant information under the Paris Agreement. Non-standardised tables. Numbers are taken from available tables or, in the absence of these, are approximately derived from the figures.

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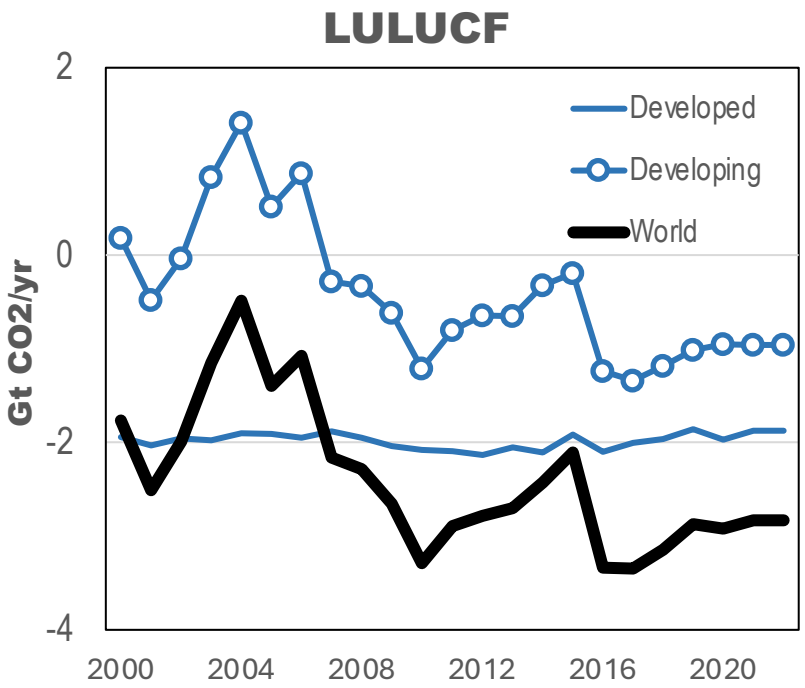

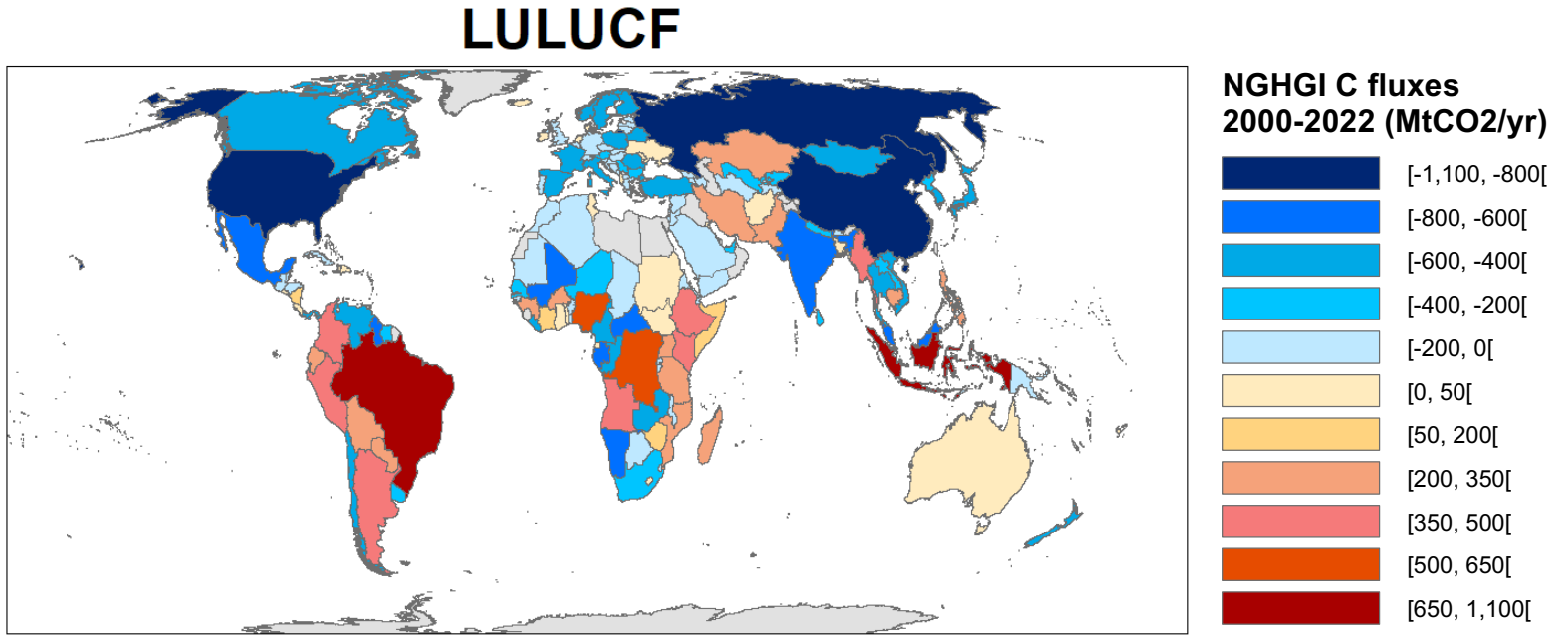

	Developed countries (AI)	Developing countries (NAI)	Total
1991-2000	100%	41%	54%
2001-2010	100%	51%	62%
2011-2020	100%	52%	63%

% of year-data available
(% of data not gap-filled)

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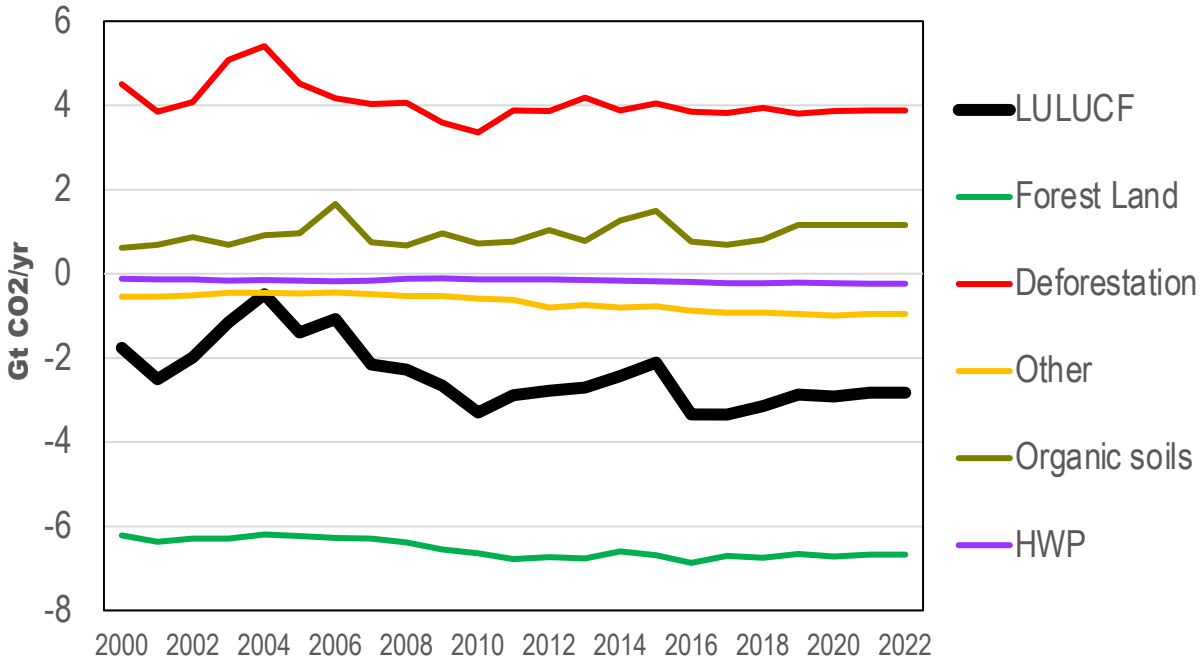
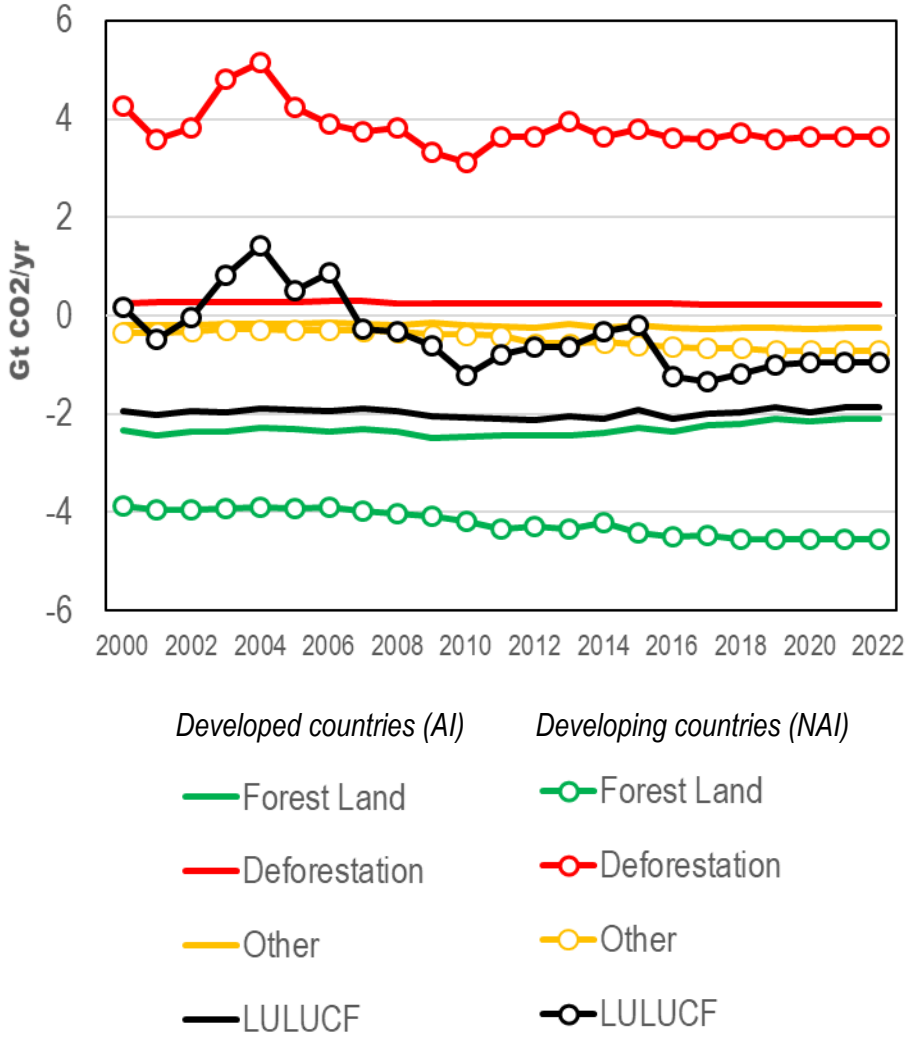
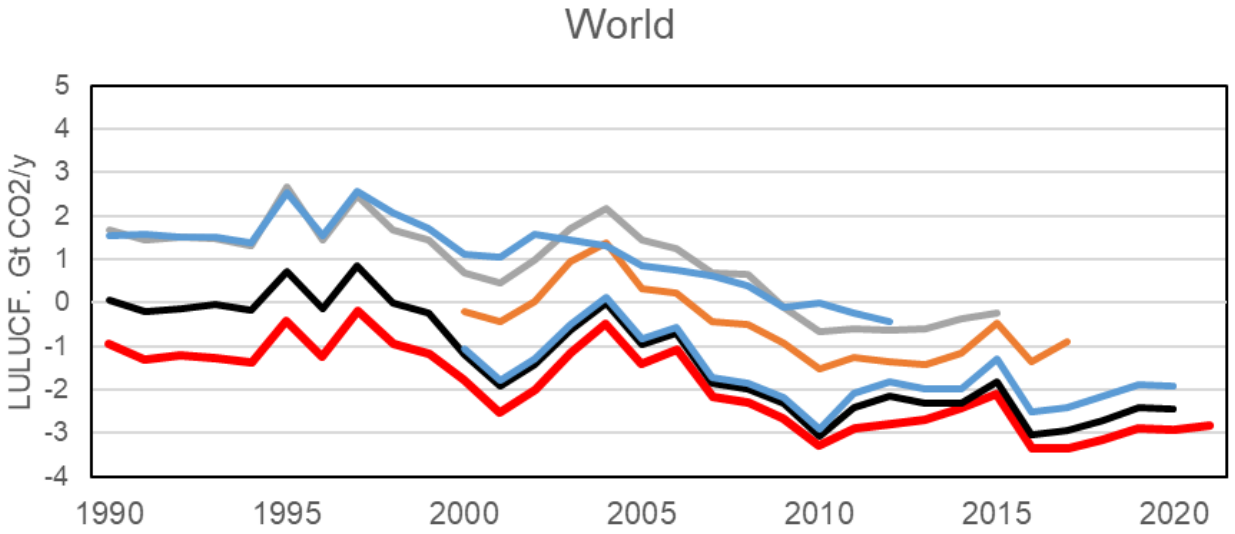


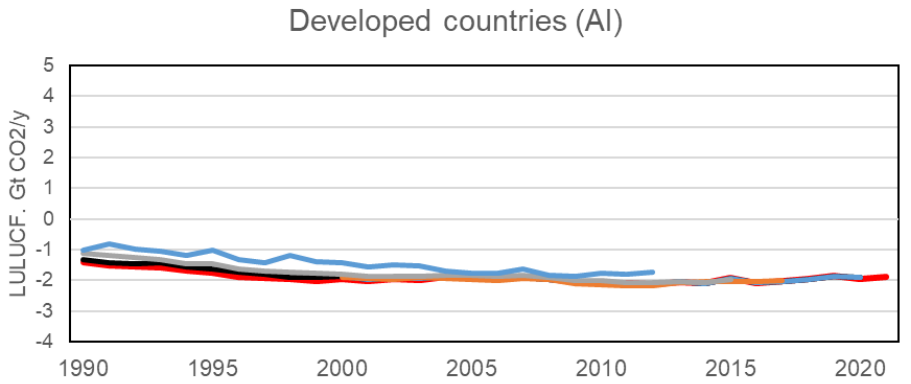


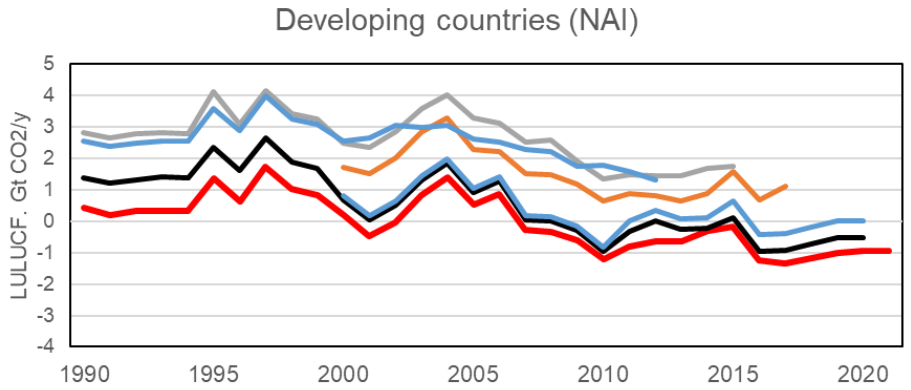
Update of the JRC NGHGI database.

MRV capacity and reporting of forest carbon sinks

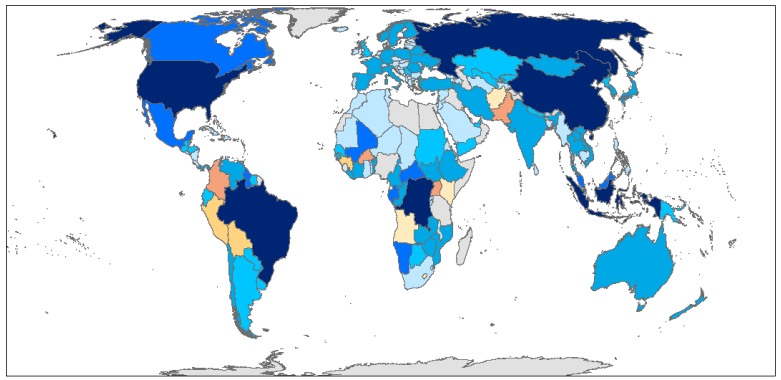


Grassi et al. NatureCC 2017
Grassi et al. NatureCC 2018
Grassi et al. NatureCC 2021
Grassi et al. ESSD 2022
Grassi et al. ESSD 2023
Melo et al. (in prep) 2024





Forest



NGHGI C fluxes 2000-2022 (MtCO2/yr)

- [-1,100, -800[
- [-800, -600[
- [-600, -400[
- [-400, -200[
- [-200, 0[
- [0, 50[
- [50, 200[
- [200, 350[

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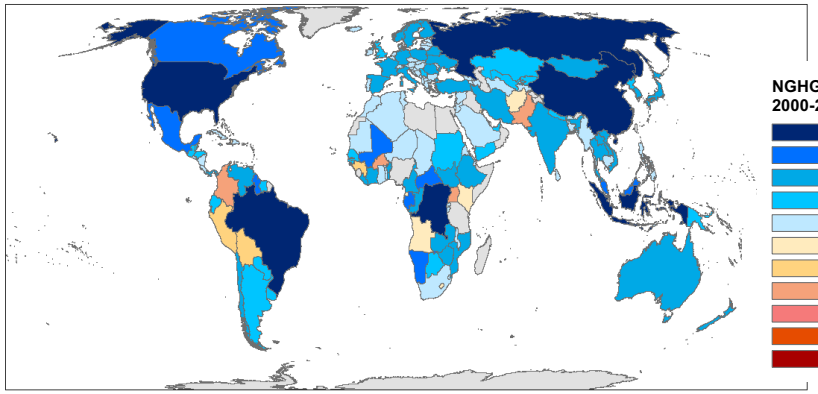
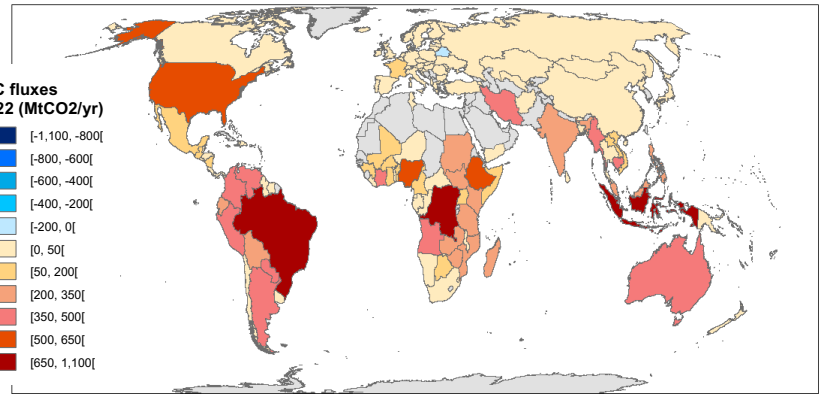
Statistics on categories reported (completeness and transparency)

	total	LULUCF		Forest land		Deforestation		Other		Org. soils		HWP	
		n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
World	195	185	(94%)	180	(92%)	127	(65%)	87	(44%)	37	(19%)	59	(30%)
Developed countries (AI)	43	43	(100%)	42	(98%)	41	(95%)	43	(100%)	33	(77%)	40	(93%)
Developing countries (NAI)	152	142	(93%)	138	(90%)	86	(56%)	44	(29%)	4	(3%)	19	(12%)

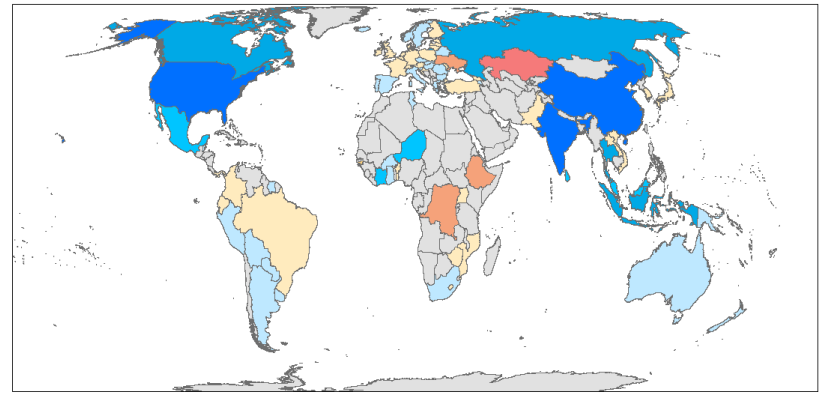
Forest



Deforestation



Other (CL, GL, WL, S, OL)



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Carbon pools.

Forest land and deforestation data always include above- and below-ground biomass

Dead organic matter, and mineral soils are reported by the vast majority of Annex I countries and by the largest developing countries (NAI, including Brazil, China, India, Indonesia, Mexico).

Harvested wood products reported by 30% of countries

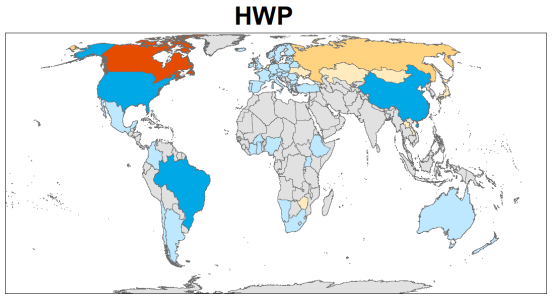

Table 5. Statistics on carbon pools (number of countries reporting, average CO_2 fluxes) for the main land use categories and sub-categories in the NGHGIs of AI countries.

	C pools→	No. of countries reporting				Average for AI countries 2000–2020 ($MtCO_2\ yr^{-1}$)			
Land use category	Land use sub-category	Living biomass	Dead organic matter	Soil mineral	Soil organic	Living biomass	Dead organic matter	Soil mineral	Soil organic
Forest land	Forest land remaining forest land	42	31	20	19	−1833	−217	−163	26
	Land converted to forest land	40	35	36	15	−168	−50	−3	2
Cropland	Cropland remaining Cropland	38	4	35	28	−6	2	1	121
	Land converted to Cropland	38	19	38	17	43	7	34	10
Grassland	Grassland remaining Grassland	22	9	25	26	−2	1	−5	97
	Land converted to Grassland	37	31	37	19	62	−11	−163	25

Grassi et al., 2022

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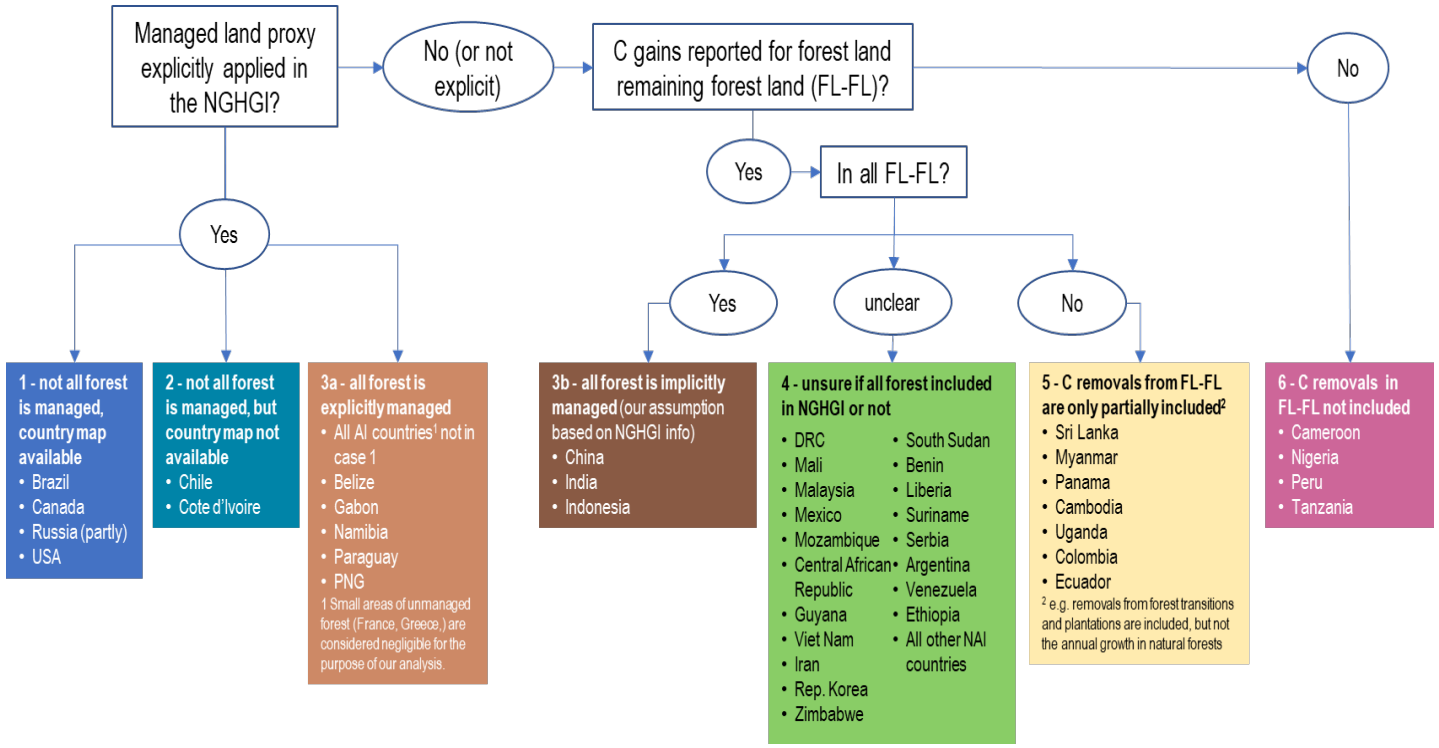
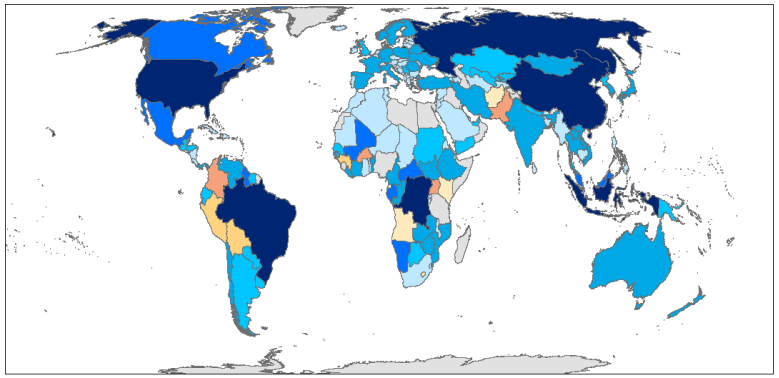
Clarity on the use of the Managed land proxy.



Forest



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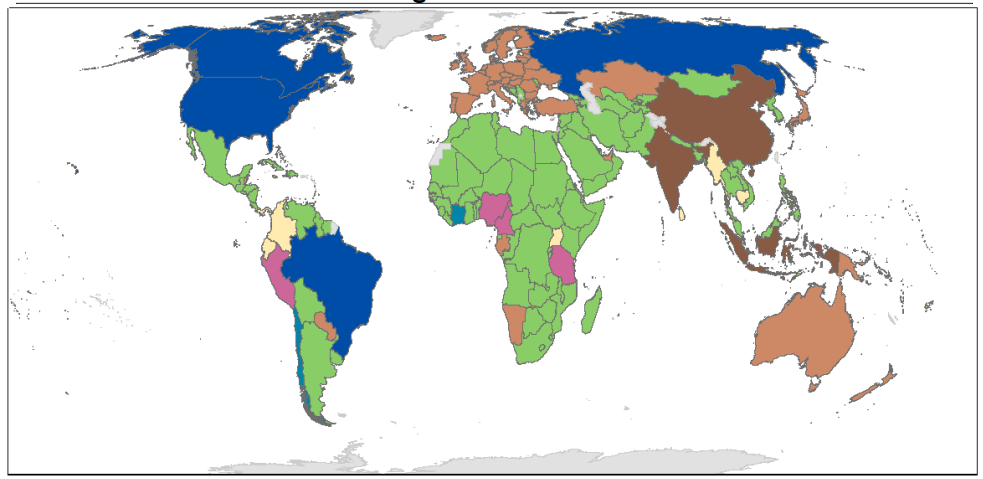
- [0, 50[
- [50, 200[
- [200, 350[

Grouping of countries based on the information on Managed Forest found in the NGHGI



- no data
- 1 - Not all forest is managed; national map available
- 2 - Not all forest is managed, but country map not available
- 3a - All forest is explicitly managed
- 3b - All forest is implicitly managed
- 4 - Unsure if all forest included in NGHGI or not
- 5 - Removals in FL-FL are only partially included
- 6 - Removals in FL-FL not included

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Looking forward to better information with the ETF.

...and to greater confidence in the estimates of CO2 fluxes from the land use sector.