



# Agriculture, Forest and Other Land Use (AFOLU) reporting

# Reporting and accounting under Kyoto Protocol



Before Paris Agreement

**Annex I**

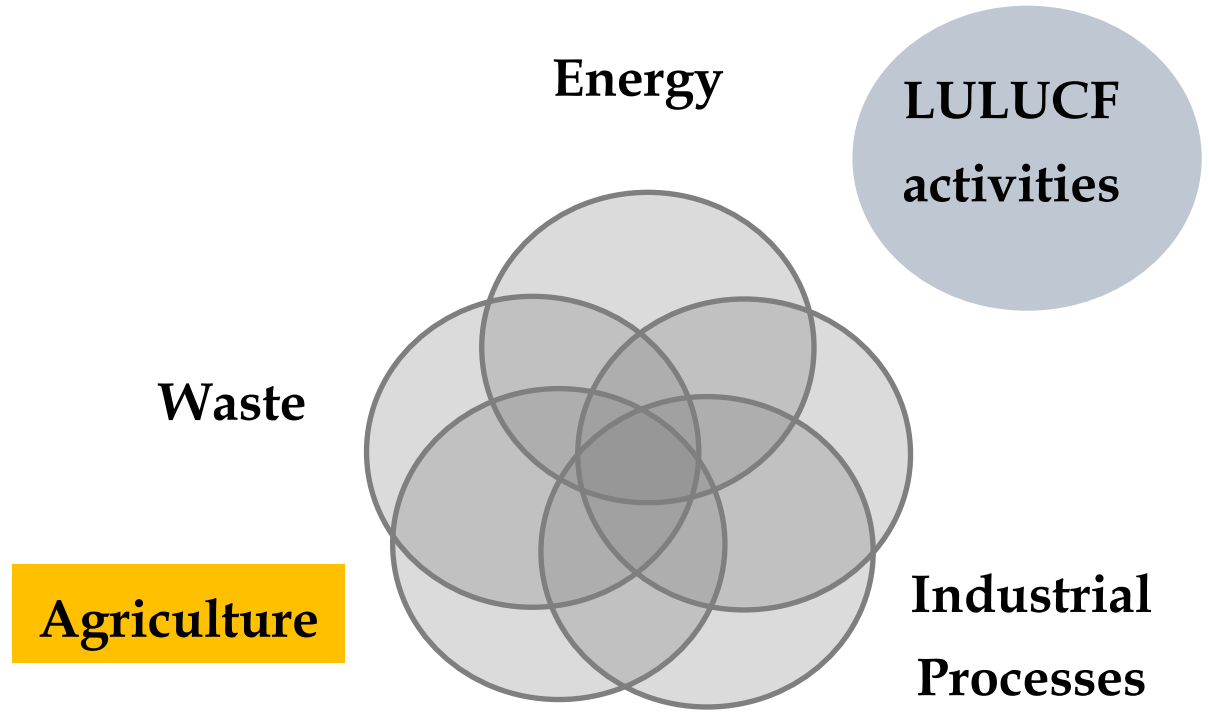
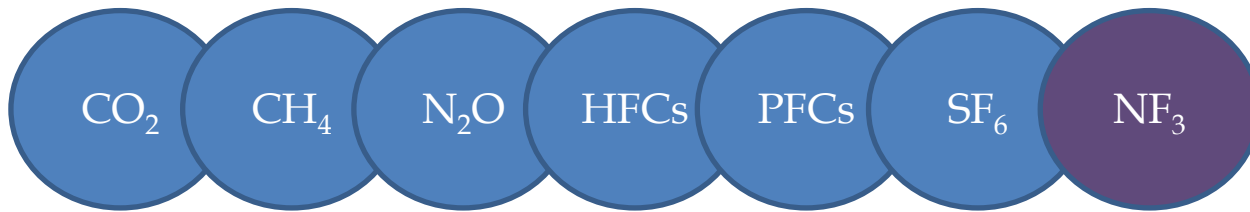
- Annual GHG inventory reporting
- National Communication UNFCCC (every 4 years)
- Biennial Report (every 2 years)

**Non Annex I**

- Reporting on mitigation and adaptation actions
- National Communication UNFCCC (periodic)
- Biennial Update Report (periodic)

**Annex I - Kyoto Protocol**

- Annual reporting on KP-LULUCF activities
- Accounting (national GHG emissions + GHG from KP-LULUCF activities)



## A. Enteric fermentation

CH<sub>4</sub>

1. Cattle
2. Sheep
3. Swine
4. Other livestock

## B. Manure management

CH<sub>4</sub>  
N<sub>2</sub>O

1. Cattle
2. Sheep
3. Swine
4. Other livestock

## C. Rice cultivation

CH<sub>4</sub>

## D. Agricultural soils

N<sub>2</sub>O

## F. Field burning of agricultural residues

CH<sub>4</sub>  
N<sub>2</sub>O

## G. Liming

CO<sub>2</sub>

## H. Urea application

CO<sub>2</sub>

# UNFCCC

## A. Forest land

1. Forest land remaining forest land
2. Land converted to forest land

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## B. Cropland

1. Cropland remaining cropland
2. Land converted to cropland

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## C. Grassland

1. Grassland remaining grassland
2. Land converted to grassland

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## D. Wetlands

1. Wetlands remaining wetlands
2. Land converted to wetlands

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## E. Settlements

1. Settlements remaining settlements
2. Land converted to settlements

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## F. Other land

1. Other land remaining other land
2. Land converted to other land

CO<sub>2</sub>  
CH<sub>4</sub>  
N<sub>2</sub>O

## G. Harvested wood products

CO<sub>2</sub>

# Kyoto Protocol

## A. Article 3.3 activities

- A.1. Afforestation and reforestation
- A.2. Deforestation

## B. Article 3.4 activities

- B.1. Forest management
- B.2. Cropland management
- B.3. Grazing land management

# AFOLU reporting



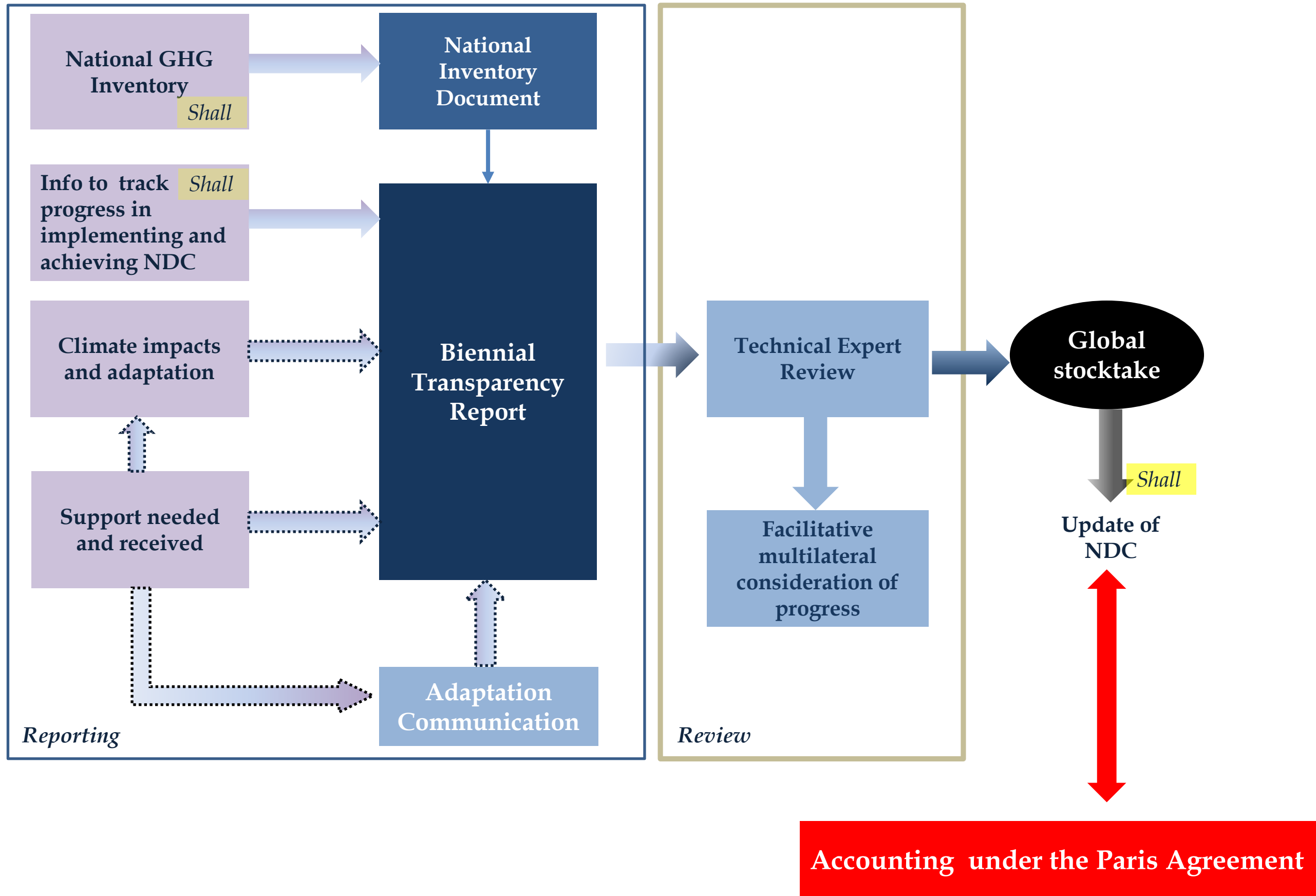
*Before Paris Agreement*

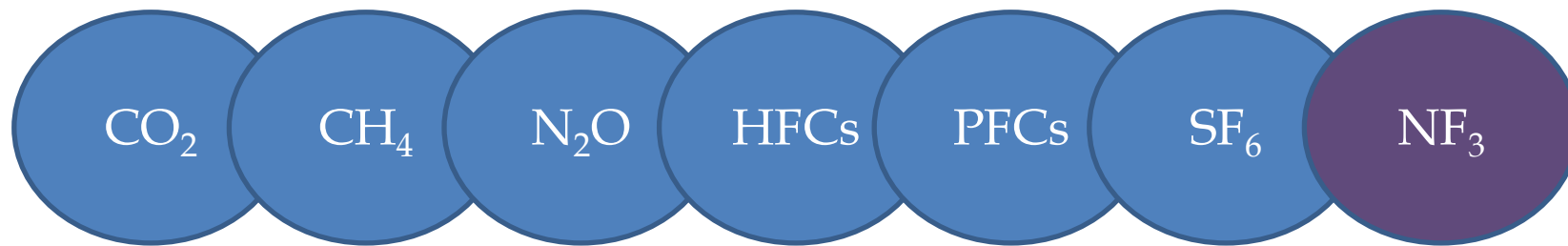
# Agriculture

# LULUCF

	<b>Reporting</b>	<b>Accounting</b>
	<i>GHG emissions and removals from</i>	<i>Accounting of GHG emissions and removals towards emissions reduction target</i>
<b>UNFCCC</b>	Agriculture <i>Agriculture categories</i>	no accounting
	LULUCF <i>LULUCF categories</i>	no accounting
<b>Kyoto Protocol</b>	Agriculture <i>Agriculture categories</i>	Agriculture sector is included in the EU Effort Sharing reduction target
	<i>Forest Management</i>	<i>Reference Level</i>
	LULUCF <i>Afforestation/Reforestation/Deforestation</i>	<i>gross-net</i>
	<i>Cropland management, Grazing land management, Wetland draining and rewetting, Revegetation</i>	<i>Net - net</i>

# The Enhanced Transparency Framework





**Article 4**

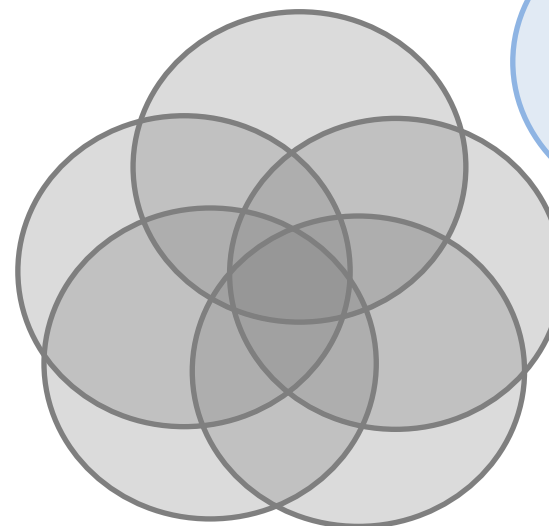
1. In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and **removals by sinks** of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

*Reporting*

**Waste**

**Agriculture**

**Energy**



**LULUCF categories**

**Industrial Processes**

**Reporting and accounting under Paris Agreement**



**Accounting for Parties' nationally determined contributions (NDC)**

→ Parties account for emissions and removals in accordance with methodologies and common metrics assessed by the IPCC;

Tonnes of CO<sub>2</sub> equivalent for economy wide targets

→ Parties whose NDC cannot be accounted for using methodologies covered by IPCC guidelines provide information on their own methodology used.

Different metrics, following the NDC' elements (i.e. share of renewables, hectares of forested lands, energy efficiency, etc.)

*Accounting*

## Key activity data

### A. Enteric fermentation

1. Cattle
2. Sheep
3. Swine
4. Other livestock

### B. Manure management

1. Cattle
2. Sheep
3. Swine
4. Other livestock

### C. Rice cultivation

### D. Agricultural soils

### F. Field burning of agricultural residues

### G. Liming

### H. Urea application

#### Livestock assessment



*Livestock population and feed characterization*

#### Management practices/area

#### Fertilizers application

#### Crops production: residues

#### Lime/urea application

**Agriculture reporting**



**Agriculture**

A tier represents a level of methodological complexity. Tier 1 is the basic method, while Tiers 2 and 3 are sometimes referred to as higher tier methods and are generally considered to be more accurate

### Tier 1

- ✓ *livestock population data by animal species/category and climate region or temperature, in combination with IPCC default emission factors*
- ✓ *the total amount of N excretion (from all livestock species/categories) in each type of manure management system by an emission factor for that type of manure management system*
- ✓ *N<sub>2</sub>O emissions from managed soils (IPCC 2006 eq. 11.1, 11.9, 11.10)*

### Tier 2

- ✓ *Enhanced livestock characterization (livestock population by subcategory, feed intake estimates for the typical animal in each subcategory)*
- ✓ *detailed country-specific data on gross energy intake and methane conversion factors for specific livestock categories*
- ✓ *country-specific nitrogen excretion rates for livestock categories*
- ✓ *N<sub>2</sub>O emissions from managed soils (IPCC 2006 eq. 11.2, 11.11)*

### Tier 3

estimation procedures based on a country-specific methodology, e.g.

- ✓ *Enteric fermentation: development of sophisticated models that consider diet composition in detail, concentration of products arising from ruminant fermentation, seasonal variation in animal population or feed quality and availability, and possible mitigation strategies.*
- ✓ *N<sub>2</sub>O emissions from soils: modelling or measurement approaches.*

Methodological  
Tiers  
Agriculture



## EFs in agriculture categories

2018 submission	Livestock		Rice cultivation	Agricultural soils	Field burning	
	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
AUT 2020 v2	CS,D	CS	NA	D	D	CS
BEL 2020 v1	CS,D	D	NA	D	NA	D
BGR 2020 v1	CS,D	D	D	D	D	NA
HRV 2020 v1	CS,D	CS,D	NA	D	NA	NA
CYP 2020 v5	CS,D	D	NA	CS,D	D	D
CZE 2020 v1	CS,D	CS,D	NA	CS,D	NA	D
DNK 2020 v4	CS,D,OTH	CS,D	NA	CS,D	D	NA
EST 2020 v1	CS,D,OTH	CS,D	NA	D	NA	D
FIN 2020 v4	CS,D,OTH	D	NA	CS,D	D	NA
FRA 2020 v3	CS,D	CS,D	D	CS,D	D	D
DEU 2020 v1	CS,D	CS,D	NA	CS,D	NA	D
GRC 2020 v1	CS,D	D	D	D	D	D
HUN 2020 v3	CS,D	CS,D	D	D	D	NA
ISL 2020 v1	CS,D	CS,D	NA	CS,D	NA	–
IRL 2020 v3	CS,D	CS,D	NA	CS,D	NA	–
ITA 2020 v1	CS,D	CS,D	CS	CS,D	CS,D	D
LVA 2020 v3	CS,D,OTH	D	NA	D	NA	D
LIE 2020 v1	CS,D	NA	NA	D	NA	D
LTU 2020 v1	CS,D,OTH	D	NA	D	NA	NA
LUX 2020 v1	CS,D	CS	NA	CS,D	NA	D
MLT 2020 v2	CS,D	CS,D	NA	D	NA	D
NLD 2020 v2	CS,D	D	NA	CS,D	NA	NA
NOR 2020 v2	CS,D	CS,D	NA	CS,D	D	NA
POL 2020 v1	CS,D	CS,D	NA	CS,D	CS	CS,D
PRT 2020 v1	CS,D	CS,D	CS,D	CS,D	D	D
RUS 2020 v3	CS,D	CS,D	D	CS,D	NA	NA
SVK 2020 v3	CS,D	CS	NA	CS,D	NA	NA
SVN 2020 v5	CS,D	CS,D	NA	D	NA	NA
ESP 2020 v1	CS,D	D	D	D	D	NA
SWE 2020 v3	CS,D	CS,D	NA	CS,D	NA	NA
CHE 2020 v1	CS,M	D	NA	CS,D	NA	NA
UKR 2020 v2	CS,D	CS,D	D	D	NA	NA

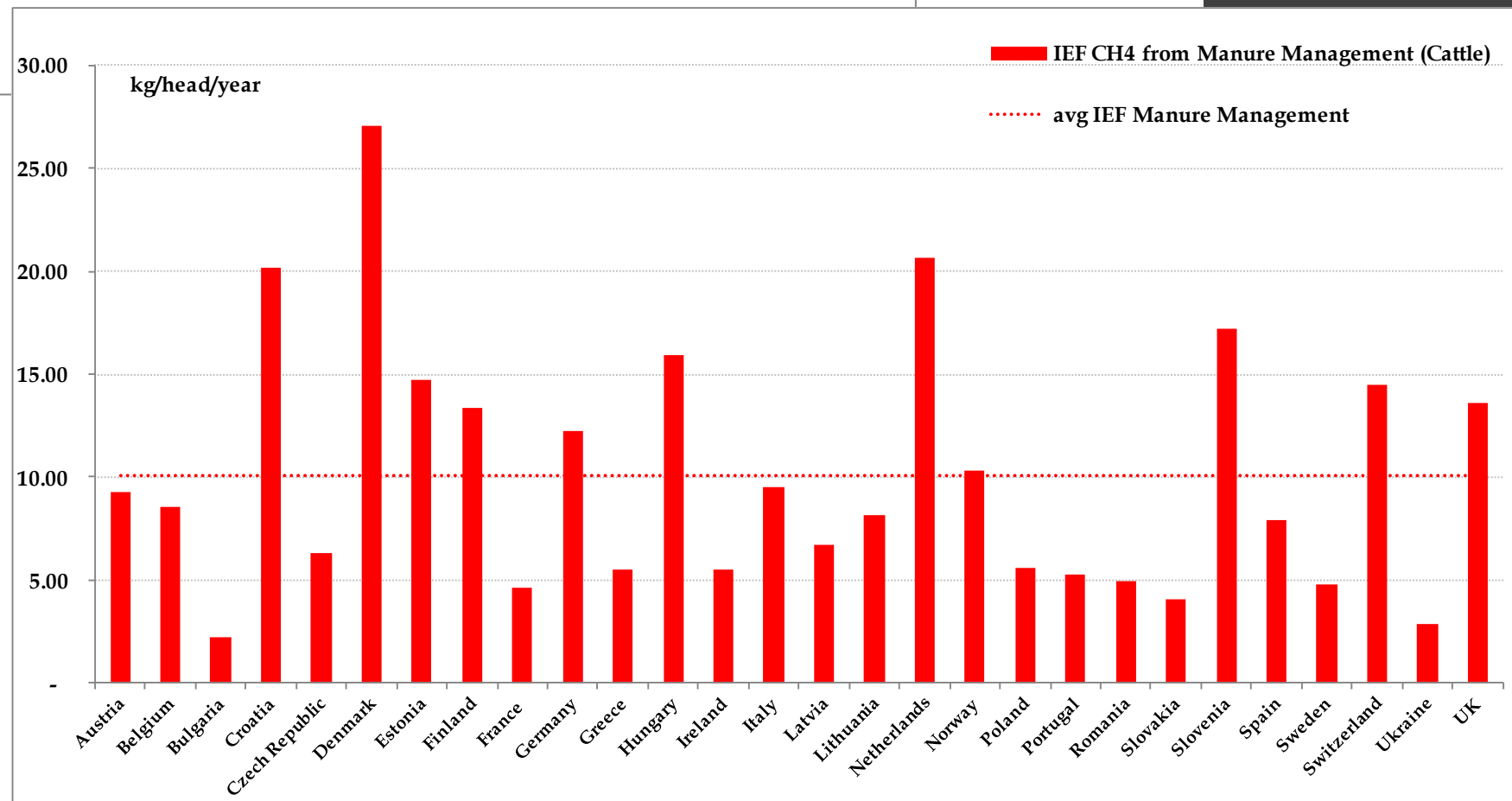
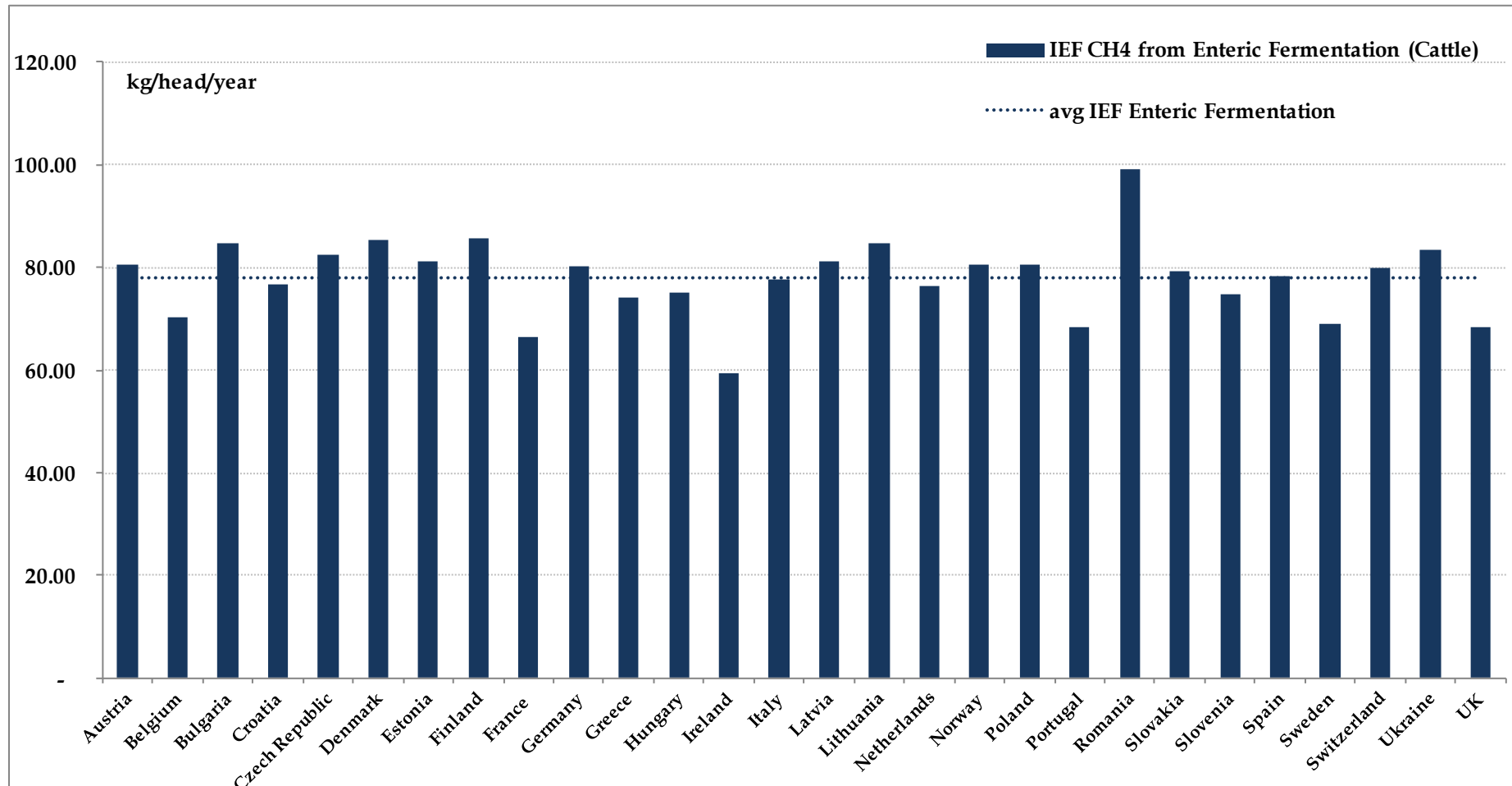
## Agriculture Methods/EFs

### Methods applied

2018 submission	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>
AUT 2020 v2	T1,T2	T1,T2	T1
BEL 2020 v1	T1,T2	T1,T2	T1
BGR 2020 v1	D,T1,T2	D,T1,T2	T1
HRV 2020 v1	T1,T2	T1	T1
CZE 2020 v1	T1,T2	T1,T2	T1
DNK 2020 v4	CS,D,T1,T2,T3	CS,D,T1,T2	T1,T2
EST 2020 v1	D,T1,T2	D,T1,T2	D,T1
FIN 2020 v4	CS,OTH,T1,T2	CS,T1,T2	T1
FRA 2020 v3	T1,T2,T3	T1,T2	T1
DEU 2020 v1	T1,T2,T3	T1,T2	T1
GRC 2020 v1	T1,T2	D,T1	D
HUN 2020 v3	T1,T2	T1,T2	T1
ISL 2020 v1	T1,T2	T1,T1b,T2	T1
IRL 2020 v3	CS,T1,T2	T1,T2	T1
ITA 2020 v1	T1,T2	CS,T1,T2	T1
LVA 2020 v3	T1,T2	T1,T2	T1
LIE 2020 v1	T2	T1b	T1b
LTU 2020 v1	T1,T2	T1,T2	T1
LUX 2020 v1	T1,T2	T1,T2	T1
MLT 2020 v2	T1,T2	T1,T2	NA
NLD 2020 v2	T1,T2,T3	T1,T1b,T2	T1
NOR 2020 v2	T1,T2	T1,T2	T1
POL 2020 v1	D,T1,T2	D,T1,T2	T1
PRT 2020 v1	T1,T2	T1,T2	T1
ROU 2020 v9	T1,T2	D,T1,T2	T1
SVK 2020 v3	T1,T2	T1,T2	T1
SVN 2020 v5	T1,T2	T1,T2	T1
ESP 2020 v1	CS,T1,T2	CS,T1,T2	T1
SWE 2020 v3	CS,T1,T2	CS,T1,T2	T1
CHE 2020 v1	T2,T3	CS,T1,T3	T1
UKR 2020 v2	CS,T1,T2	CS,T1,T2	T1

# 2018 Implied Emission Factors - CH4 from Enteric Fermentation and Manure Management (Cattle)

## Agriculture IEFs



A **consistent land representation** is needed for LULUCF estimation of GHG emissions and removals.

The land representation has to be complete:

- *total land area of country has to be represented*
- *managed and unmanaged land has to be reported*

The **three approaches** may be used to represent areas of land-use for the IPCC categories:

→ **Approach 1: total land use area (no data on conversions)**

*represents land-use area totals within a defined spatial unit (such as a country, province or municipality). Only the net changes in land-use area can be tracked through time*

→ **Approach 2: total land use area, including changes between categories**

*Provides land use changes both from and to a category. Tracking changes without spatially-explicit location data (i.e. locations of specific land-use and land-use conversions are not known).*

→ **Approach 3: spatially-explicit land use conversion data**

*both spatially and temporally consistent and explicit. Sample-based, survey-based and wall-to-wall methods can be considered Approach 3*

**LULUCF**  
**reporting:**  
**Land**  
**representation**



The **three** main **methods** for estimating areas of land-use and land-use change are:

- **Sample based methods:** from ground surveys (such as a national forest inventory or national land survey) or remote sensing. Sample-based methods provide an accurate statistical representation of land-use and land-use change but do not provide information on every specific area of the land territory (i.e. is not wall-to-wall spatially explicit);
- **wall-to-wall maps** of land cover and land cover change that, when combined with other data, can be used to generate land-use and land-use change information.
- **statistical survey methods**, to collect information on land-use and land-use change and land management practices; this data is often used in combination with other data to develop a complete land use estimate

These methods are not mutually exclusive; for example, wall-to-wall methods typically require samples for calibration, validation and uncertainty analysis, and some sample methods require wall-to-wall maps for scaling as well as for dimensioning the sample size and designing the sample grid.

**LULUCF**  
**reporting:**  
**Land**  
**representation**



**TABLE 3.6A (NEW)**  
**EXAMPLES OF DIFFERENT DATA INPUTS AND METHODS TO DERIVE IPCC LAND-USE CLASSES AND THE RESULTING APPROACHES (1, 2 OR 3)<sup>1</sup>**

<b>Method</b>	<b>Approach 1</b>	<b>Approach 2</b>	<b>Approach 3</b>
Sample-based methods	<ul style="list-style-type: none"> <li>• Single sample</li> <li>• Temporary sample units</li> </ul>	<ul style="list-style-type: none"> <li>• Samples collected from permanent units but changes only tracked across two consecutive sample periods.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent and consistent georeferenced ground plots.</li> <li>• Continuous and consistent samples using remote sensing data.</li> </ul>
Survey-based methods	<ul style="list-style-type: none"> <li>• Single census at one point in time.</li> <li>• Repeat census but without reference to previous censuses.</li> </ul>	<ul style="list-style-type: none"> <li>• General surveys between two periods.</li> <li>• National census data that can refer a past period.</li> </ul>	<ul style="list-style-type: none"> <li>• Specific survey designs that identify activities through time for each land unit within a known region.</li> </ul>
Wall-to-Wall methods	<ul style="list-style-type: none"> <li>• Single map</li> <li>• Inconsistent maps developed at different times.</li> </ul>	<ul style="list-style-type: none"> <li>• Inconsistent maps through time combined with Approach 2-type samples (e.g. using maps as stratifications).</li> <li>• Maps developed using consistent methods changes tracked across two consecutive maps only not tracked through a time-series of maps.</li> </ul>	<ul style="list-style-type: none"> <li>• Tracking pixels / land units using time-series consistent data.</li> </ul>

A tier represents a level of methodological complexity. Tier 1 is the basic method, while Tiers 2 and 3 are sometimes referred to as higher tier methods and are generally considered to be more accurate

### Tier 1

country-specific estimates of activity data and emission/removal factors are not available

- *Biomass Gain-Loss Method (IPCC 2006 eq. 2.7)*

### Tier 2

country-specific estimates of activity data and emission/removal factors are available or can be gathered at reasonable cost.

- ✓ *Biomass Gain-Loss Method (IPCC 2006 eq. 2.7)*
- ✓ *Guidance on the use of allometric models to be used with country specific data to estimate carbon stocks (IPCC 2019 Refinement)*
- ✓ *Guidance on the use of biomass density maps (IPCC 2019 Refinement)*

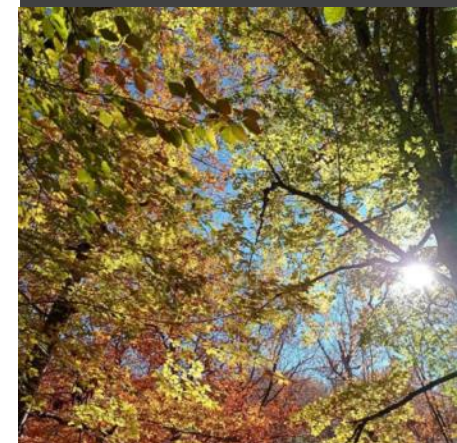
### Tier 3

allows for a variety of methods, including process-based models (to be transparently documented and validated). Tier 3 requires use of detailed national forest inventories when the stock-difference method is used (IPCC 2006 eq. 2.8).

- ✓ *Guidance on the use of allometric models to be used with country specific data to estimate carbon stocks (IPCC 2019 Refinement)*
- ✓ *Guidance on the use of biomass density maps (IPCC 2019 Refinement)*

Methodological  
Tiers  
LULUCF

# LULUCF reporting



Emissions/Removals for each LU category/pool/gas

Land use changes (20yrs transition period)

Land use classification 1971-2018

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO <sub>2</sub> emissions/removals <sup>(1),(2)</sup>	CH <sub>4</sub> <sup>(2)</sup>	N <sub>2</sub> O <sup>(2)</sup>	NO <sub>x</sub>	CO	NM VOC
	(kt)					
<b>4. Total LULUCF</b>	-36909.40	6.82	1.59	4.86	183.02	7.16
<b>A. Forest land</b>	-33471.74	3.16	0.00	0.04	84.72	3.32
1. Forest land remaining forest land	-27772.38	2.72	0.00	0.04	72.98	2.86
2. Land converted to forest land	-5699.36	0.44	0.00	0.01	11.74	0.46
<b>B. Cropland</b>	-95.73	0.04	0.21	0.06	1.18	0.05
1. Cropland remaining cropland	-930.95	0.04	0.00	0.06	1.18	0.05
2. Land converted to cropland	835.22	NO	0.21	NO	NO	NO
<b>C. Grassland</b>	-8395.76	3.62	0.11	4.76	97.12	3.80
1. Grassland remaining grassland	-2002.43	3.62	0.11	4.76	97.12	3.80
2. Land converted to grassland	-6393.33	NO	NO	NO	NO	NO
<b>D. Wetlands<sup>(3)</sup></b>	52.69	NO	NO	NO,NE	NO,NE	NO,NE
1. Wetlands remaining wetlands	NO,NE	NO	NO	NE	NE	NE
2. Land converted to wetlands	52.69	NO	NO	NO	NO	NO
<b>E. Settlements</b>	5184.58	NO,NE,NA	1.22	NO,NA	NO,NA	NO,NA
1. Settlements remaining settlements	NO	NO	NO	NO	NO	NO
2. Land converted to settlements	5184.58	NA	1.22	NA	NA	NA
<b>F. Other land<sup>(4)</sup></b>	NO	NO	NO	NO	NO	NO
1. Other land remaining other land	NO	NO	NO	NO	NO	NO
2. Land converted to other land	NO	NO	NO	NO	NO	NO
<b>G. Harvested wood products<sup>(5)</sup></b>	-183.45	NO	NO	NO	NO	NO
<b>H. Other (please specify)</b>	NO	NO	NO	NO	NO	NO

Year	FL	CL	GL	WL	SL	OL	Totale Italia
1970	6,916	11,203	9,423	510	1,423	658	30,133,601
1971	6,947	11,192	9,398	510	1,429	658	30,133,601
1972	6,978	11,181	9,373	510	1,434	658	30,133,601
1973	7,009	11,169	9,348	510	1,440	658	30,133,601
1974	7,040	11,158	9,322	510	1,445	658	30,133,601
1975	7,071	11,147	9,297	510	1,451	658	30,133,601
1976	7,083	11,174	9,252	510	1,456	658	30,133,601
1977	7,095	11,201	9,207	510	1,462	658	30,133,601
1978	7,107	11,228	9,163	510	1,467	658	30,133,601
1979	7,119	11,256	9,118	510	1,473	658	30,133,601
1980	7,131	11,283	9,073	510	1,478	658	30,133,601
1981	7,145	11,219	9,117	510	1,484	658	30,133,601
1982	7,159	11,156	9,161	510	1,489	658	30,133,601
1983	7,173	11,093	9,205	510	1,495	658	30,133,601
1984	7,186	11,030	9,249	510	1,500	658	30,133,601
1985	7,200	10,966	9,293	510	1,506	658	30,133,601
1986	7,278	10,941	9,213	510	1,534	658	30,133,601
1987	7,356	10,916	9,132	510	1,561	658	30,133,601
1988	7,434	10,891	9,052	510	1,589	658	30,133,601
1989	7,512	10,866	8,971	510	1,616	658	30,133,601
1990	7,590	10,841	8,891	510	1,644	658	30,133,601
1991	7,668	10,857	8,768	511	1,672	658	30,133,601
1992	7,746	10,874	8,646	511	1,699	658	30,133,601
1993	7,824	10,891	8,523	511	1,727	658	30,133,601
1994	7,902	10,908	8,400	512	1,754	658	30,133,601
1995	7,980	10,924	8,278	512	1,782	657	30,133,601
1996	8,058	10,837	8,259	513	1,810	657	30,133,601
1997	8,136	10,749	8,241	513	1,837	657	30,133,601
1998	8,213	10,662	8,223	514	1,865	657	30,133,601
1999	8,291	10,574	8,204	514	1,892	657	30,133,601
2000	8,369	10,487	8,186	515	1,920	656	30,133,601
2001	8,447	10,365	8,202	515	1,948	656	30,133,601
2002	8,525	10,244	8,218	516	1,975	656	30,133,601
2003	8,603	10,122	8,233	516	2,003	656	30,133,601
2004	8,681	10,000	8,249	517	2,030	656	30,133,601
2005	8,759	9,879	8,265	517	2,058	656	30,133,601
2006	8,814	9,769	8,292	518	2,086	655	30,133,601
2007	8,868	9,660	8,318	518	2,113	655	30,133,601
2008	8,923	9,551	8,345	519	2,141	655	30,133,601
2009	8,978	9,355	8,464	526	2,156	655	30,133,601
2010	9,032	9,159	8,584	534	2,170	655	30,133,601
2011	9,087	8,966	8,570	541	2,185	655	30,133,601
2012	9,142	8,773	8,555	549	2,200	655	30,133,601
2013	9,196	8,581	8,541	556	2,214	655	30,133,601
2014	9,251	8,388	8,527	564	2,229	655	30,133,601
2015	9,305	8,195	8,513	571	2,244	655	30,133,601
2016	9,360	8,002	8,499	576	2,258	655	30,133,601
2017	9,415	7,809	8,485	581	2,273	655	30,133,601
2018	9,469	7,616	8,471	586	2,288	655	30,133,601

	1990						total 1989
	Forest	Grassland	Cropland	Wetlands	Settlements	Other Land	
<b>Forest</b>	7,511				0.72		7,512
<b>Grassland</b>	78.68	8,891	0.00	0.00	1.73		8,971
<b>Cropland</b>		0	10,841	0.00	25		10,866
<b>Wetland</b>				510			510
<b>Settlements</b>					1,616		1,616
<b>Other Land</b>					0.00	658	658
<b>total 1990</b>	7,590	8,891	10,841	510	1,644	658	30,134
<b>Land converted to:</b>	78.7	0.0	0.0	0.0	27.6	0.0	

20 years matrix	1990						total 1971
	Forest	Grassland	Cropland	Wetlands	Settlements	Other Land	
<b>Forest</b>	6,901				14.4		6,916
<b>Grassland</b>	689	8,566	136	0.00	33		9,423
<b>Cropland</b>		325	10,704	0.00	174		11,203
<b>Wetland</b>				510			510
<b>Settlements</b>					1,423		1,423
<b>Other Land</b>					0.00	658	658
<b>Total 1990</b>	7,589.8	8,890.9	10,840.5	510.1	1,644.0	658.3	30,134
<b>Land converted to:</b>	688.5	325.0	136.1	0.0	220.8	0.0	

## Methods applied in the IPCC categories

2018 submission	FL-FL	L-FL	CL-CL	L-CL	GL-GL	L-GL
AUT 2020 v2	T3	T2,T3	T2,T3	T2,T3	T1,T2	T2,T3
BEL 2020 v1	CS,T2	CS,T1	CS,T2	CS,T1,T2	CS,T2	CS,T1
BGR 2020 v1	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2
HRV 2020 v1	T3	T3	T1,T2	T2	T1	T1
CZE 2020 v1	T2	T2	T2	T1,T2	T1,T2	T1,T2
EST 2020 v1	T1,T2	T1,T2	T1,T2	T2	T1,T2	T2
FIN 2020 v4	T2,T3	T2,T3	T2,T3	T1,T2,T3	T2,T3	T1,T2,T3
FRA 2020 v3	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2
FRK 2020 v1	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2	T1,T2
DEU 2020 v1	CS,T2	CS,T2	T2	T2	T2	T2
GRC 2020 v1	T2	OTH	T1,T2	T1,T2	T2	T1,T2
HUN 2020 v3	T1,T2	T1,T2	T1,T2	T1,T2	T1	T1,T2
ISL 2020 v1	T1,T3	T1,T2,T3	T1	D,T1,T2,T3	T1,T2,T3	T1,T2
IRL 2020 v3	T1,T2,T3	CS,T3	NA	NA	D,T1	T2,T3
ITA 2020 v1	T2,T3	T1,T2	T1,T2	T1	T1,T2,T3	T1
LVA 2020 v3	T2	T2	T1,T2	T1,T2,T3	T1,T2	T1,T2,T3
LIE 2020 v1	T2	T2	T2	T2	T2	T2
LTU 2020 v1	T2	T2	T1,T2	T1,T2	NA	T1,T2
LUX 2020 v1	T1,T2	T1,T2	T1	T1	NA	T1
NLD 2020 v2	T2	T1,T2	T1	CS,T1	CS,T1,T2	CS,T1,T2
NOR 2020 v2	T1,T3	T1,T2,T3	T1,T2	T1,T2,T3	T1,T2	T1,T2,T3
POL 2020 v1	T2	T2	T2	T1	T1,T2	T1
ROU 2020 v9	T3	T1,T2	T1	T1	T1	T1,T2
SVK 2020 v3	T1,T2	T1,T2	T1,T2	T1,T2	NA	T1,T2
SVN 2020 v5	CS,D,T2,T3	CS,D,T2,T3	CS,D,T1,T2	CS,D,T1,T2	D,T1,T2	D,T1,T2
ESP 2020 v1	T1,T2	T1,T2	T1,T2	T1,T2	NA	T1,T2
SWE 2020 v3	T2,T3	T2,T3	T2,T3	T2,T3	T2,T3	T2,T3
CHE 2020 v1	T2,T3	T2	T2,T3	T2	T2,T3	T2
UKR 2020 v2	CS,T1,T2	CS,T1,T2	CS,T1,T3	CS,T1	CS,T1,T3	CS,T1
GBK 2020 v1	CS,T3	CS,T3	CS,D,T1,T3	CS,D,T3	CS,T3	CS,D,T1,T3

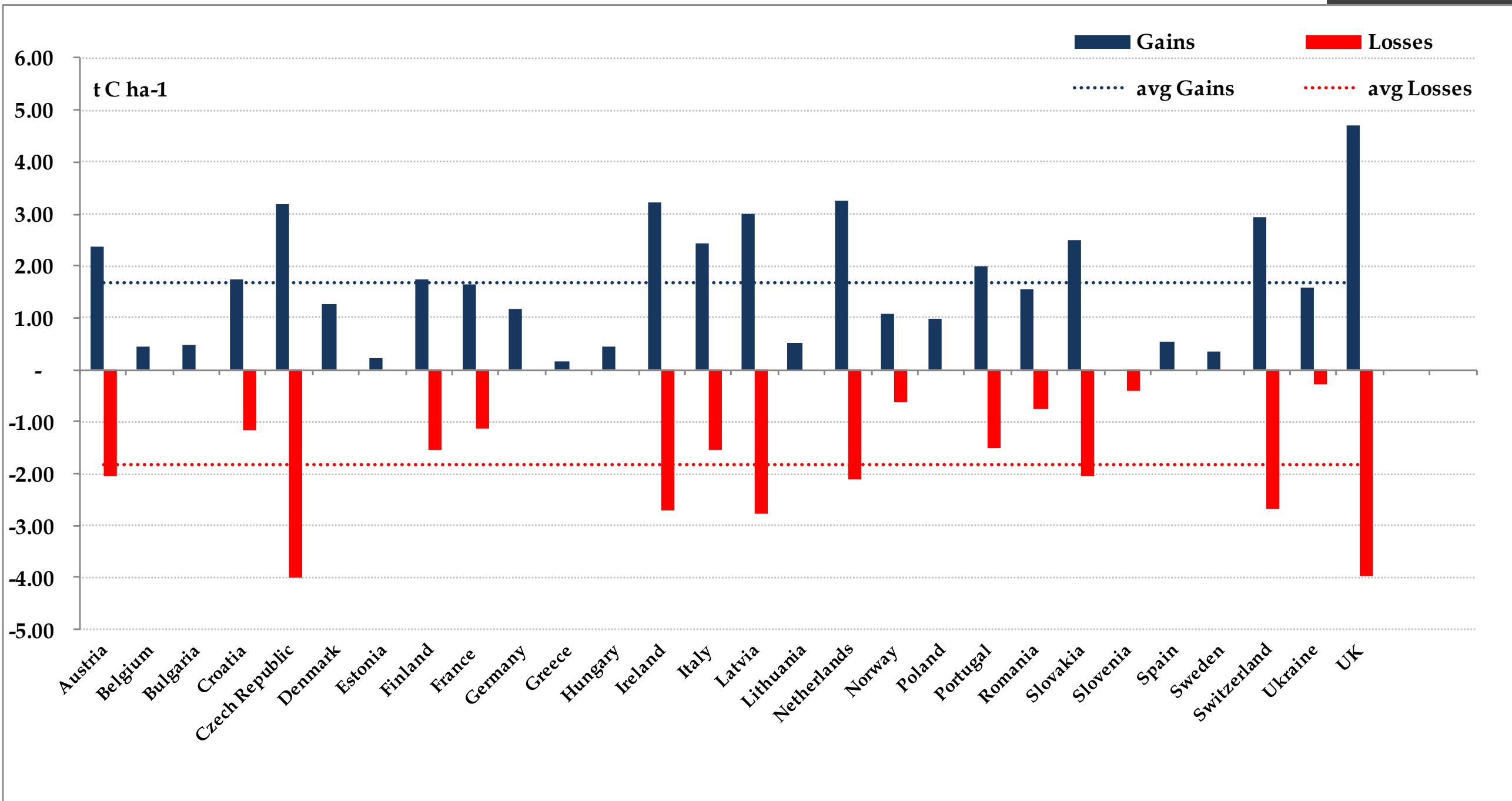
## EFs in FL-FL

2018 submission	EFs for FL-FL
AUT 2020 v2	CS
BEL 2020 v1	CS
BGR 2020 v1	CS,D
HRV 2020 v1	CS,D
CZE 2020 v1	CS,D
EST 2020 v1	CS,D,OTH
FIN 2020 v4	CS
FRA 2020 v3	CS,D
FRK 2020 v1	CS,D
DEU 2020 v1	CS
GRC 2020 v1	CS,D
HUN 2020 v3	CS,D
ISL 2020 v1	D
IRL 2020 v3	CS
ITA 2020 v1	CS,D
LVA 2020 v3	CS
LIE 2020 v1	CS
LTU 2020 v1	CS,D
LUX 2020 v1	CS,D
NLD 2020 v2	CS
NOR 2020 v2	CS,D
POL 2020 v1	CS
RUS 2020 v3	CS
SVK 2020 v3	CS,D
SVN 2020 v5	CS,D
ESP 2020 v1	CS,D
SWE 2020 v3	CS
CHE 2020 v1	CS,M
UKR 2020 v2	CS,D
GBR 2020 v1	CS



# 2018 Implied Emission Factors in Forest Land remaining Forest Land category

LULUCF  
IEFs



## Key messages from inventory's perspective

UNFCCC rules, national definitions and data availability are key elements in the framework of GHG inventory process

IPCC guidelines provides different methods and factors to assess emissions/removals to be applied at national level on the basis of data and resource availability; consequently large variety of approaches/methods/factors results in the reported estimates

Inventory agencies are open to :

- provide additional detailed information on the estimation process
- to update/modify data and methods used as long as consistency with IPCC guidelines and UNFCCC decisions is ensured

Any proposal by the EO community in relation to novel approaches/methods to be applied in the verification of the GHG estimates is more than welcome

**Thank you**

