

# Overview of MS' LULUCF reporting under the KP

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### 3.4 elected activities and accounting frequency

Member State	Art 3.4 elected activities	Accounting frequency
Austria	-	end of CP
Belgium	-	end of CP
Denmark	FM, CM, GM	Annually
Finland	FM	end of CP
France	FM	Annually
Germany	FM	end of CP
Greece	FM	end of CP
Ireland	-	end of CP
Italy	FM	end of CP
Luxemburg	-	end of CP
Netherlands	-	end of CP
Portugal	FM, CM, GM	end of CP
Spain	FM, CM	end of CP
Sweden	FM	end of CP
United Kingdom	FM	end of CP
Bulgaria	-	end of CP
Czech Republic	FM	end of CP
Estonia	-	end of CP
Hungary	FM	Annually
Latvia	FM	end of CP
Lithuania	FM	end of CP
Poland	FM	end of CP
Romania	FM, RV	end of CP
Slovakia	-	end of CP
Slovenia	FM	end of CP

## Key categories (KP CRF NIR 3)

Member State	AR	D	FM	CM	GM	RV
Austria	K	K				
Belgium						
Denmark	K		K	K		
Finland	K	K	K			
France	-	-	-			
Germany	K	K	K			
Greece	K		K			
Ireland	K					
Italy			K			
Luxembourg						
Netherlands	K	K				
Portugal	K	K	K	K		
Spain	K		K	K		
Sweden			K			
UK	K	K	K			
Bulgaria	K					
Czech Republic			K			
Estonia	K	K				
Hungary	K		K			
Latvia	K		K			
Lithuania						
Poland	K	K	K			
Romania						
Slovakia	K	K				
Slovenia			K			

## Selection of parameters for defining "Forest" under the KP

In Finland and the Netherlands definitions under the KP and the Convention differ.

	Minimum crown cover (%)	Minimum height (m)	Minimum area (ha)	Minimum width (m)
Austria	30	2	0.05	10
Belgium	20	5	0.5	-
Denmark	10	5	0.5	20
Finland	10	5	0.5	20
France	10	5	0.5	20
Germany	10	5	0.1	-
Greece	25	2	0.3	30
Ireland	20	5	0.1	20
Italy	10	5	0.5	-
Luxemburg	10	5	0.5	-
Netherlands	20	5	0.5	30
Portugal	10	5	0.1	20
Spain	20	3	1.0	25
Sweden	10	5	0.5	-
United Kingdom	20	2	0.1	20
Bulgaria	10	5	0.1	-
Czech Republic	30	2	0.05	20
Estonia	30	1.3	0.5	-
Hungary	30	5	0.5	10
Latvia	20	5	0.1	20
Lithuania	10	5	0.1	10
Poland	10	2	0.1	10
Romania	10	5	0.25	20
Slovakia	20	5	0.3	-
Slovenia	30	2	0.25	-

## Coverage of C pools – EU15

### Aff/Reforestation

### Deforestation

### Forest management

	Change in C pool reported						Change in C pool reported						Change in C pool reported				
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil
Austria	R	R	IE	NO	R		R	R	IE	IE	R		NA	NA	NA	NA	NA
Belgium	R	R	R	NR	R		R	R	R	R	R		NA	NA	NA	NA	NA
Denmark	R,R	R,R	R,IE	R,R	R,NR		R,NO	R,NO	R,NO	R,NO	R,NO		R,R	R,R	R,IE	R,R	R,NR
Finland	R	IE	IE	IE	R		R	IE	IE	IE	R		R	IE	IE	IE	R
France	R	R	R	R	R		R	R	R	R	R		R	R	R	R	R
Germany	R	R	R	NO	R		R	R	R	R	R		R	R	NO	R	R
Greece	R	R	NR	NR	NR		R	R	NR	NR	NR		R	R	NR	NR	NR
Ireland	R	R	R	R	R		R	R	R	R	R		NA	NA	NA	NA	NA
Italy	R	R	R	R	R		R	R	R	R	R		R	R	R	R	R
Luxemburg	R	IE	IE	NO	R		R	IE	IE	R	R		NA	NA	NA	NA	NA
Netherlands	R	R	NR	NR	NR		R	R	R	R	NR		NA	NA	NA	NA	NA
Portugal	R	R	NE	NE	NE		R	R	NE	NE	NE		R	R	NR	NR	NR
Spain	R	R	NR	NR	NR		R	IE	NR	NR	NR		R	IE	NR	NR	NR
Sweden	R	R	R	R	R		R	R	R	R	R		R	R	R	R	R
United Kingdom	R	IE	R	IE	R		R	IE	IE	IE	R		R	IE	R	IE	R

R (reported), NR (not reported), IE (included elsewhere), NO (not occurring), NA (not applicable) NE (not estimated)

## Coverage of C pools – new MS

	Aff/Reforestation					Deforestation					Forest management				
	Change in C pool reported					Change in C pool reported					Change in C pool reported				
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil
Bulgaria	R	IE	IE	NO	R	R	IE	IE	R	R	NA	NA	NA	NA	NA
Czech Republic	R	R	IE	R	R	R	R	IE	R	R	R	R	NR	R	NR
Estonia	R	R	IE	NO	R	R	R	IE	IE	R	NA	NA	NA	NA	NA
Hungary	R	R	NR	NR	NR	R	R	NR	NR	R	R	R	NR	NR	NR
Latvia	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Lithuania	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poland	R	R	R	R	R	R	R	IE	R	R	R	R	R	R	R
Romania	R	IE	R	IE	NR	R	R	R	IE	R	R	R	NR	NR	R
Slovakia	R	IE	NR	NR	R	R	IE	NR	NR	R	NA	NA	NA	NA	NA
Slovenia	NO	NO	NO	NO	NO	R	R	NR	R	R	R	R	NR	R	NR

R (reported), NR (not reported), IE (included elsewhere) , NO (not occurring), NA (not applicable)

## EU15

	Net emissions (+) and removals (-), Gg CO2eq										Accounting, Gg CO2eq						
	A. Article 3.3 activities			B.1 Forest manage ment	B.2 Cropland management		B.3 Grazing land management		B.4 Revegetation		accounting parameters for FM				Accounting quantity		
	A.1		A.2. Deforest ation								AQoff	FM Cap	AQcap	AQFM	3.3 activities	3.4 activities	total
	Aff/Reforestation																
	A.1.1 Lands not harveste d	A.1.2 Lands harveste d			2008		1990	2008	1990	2008	1990	2008					
Austria	-2531	NO	1224	NA,NO	0	NA,NO	0	NA,NO	0	NA,NO	0	11550	0	0	-1307	0	-1307
Belgium	-399	NO	468	NA	0	NA	0	NA	0	NA	0	550	0	0	69	0	69
Denmark	-230	IE,NA	23	265	3378	2760	24	18	NA	NA	0	917	265	265	-207	-359	-566
Finland	-1077	NA	2893	-39891	0	0	0	NA	0	NA	-1816	2933	-2933	-4749	1816	-4749	-2933
France	-7677	NA,NO	12665	-83821	0	NA,NO	0	NA,NO	0	NA,NO	-4987	16133	-16133	-21121	4987	-21121	-16133
Germany	-2615	NA,NO	16394	-20332	0	0	0	0	0	0	-13778	22733	-6553	-20332	13778	-20332	-6553
Greece	-351	NA	4	-2045	0	NA	0	NA	0	NA	0	1650	-1650	-1650	-347	-1650	-1997
Ireland	-2768	116	11	NA	0	0	0	NA	0	NA	0	917	0	0	-2757	0	-2757
Italy	-1718	0	386	-50731	0	NA	0	NA	0	0	0	50967	-50731	-50731	-1332	-50731	-52062
Lux	-77	NO	141	NA	0	NA	0	NA	0	NA	0	65	0	0	65	0	65
Netherl	-547	NA,NE	780	NA	0	NA	0	NA	0	NA	0	183	0	0	234	0	234
Portugal	-3762	1019	6877	2563	NE	-36	NE	-86	NA	NA	0	4033	2563	2563	3115	2563	5678
Spain	-9726	NA,NO	36	-39097	IE,NE	-3098	NA	NA	NA	NA	0	12283	-12283	-12283	-9691	-12283	-21974
Sweden	-1576	NO	2397	-18399	0	NA	0	NA	0	NA	-821	10633	-10633	-11454	821	-11454	-10633
UK	-2695	NO	615	-10698	0	0	0	0	0	0	0	6783	-6783	-6783	-2080	-6783	-8863
EU-15	-37749	1135	44914	-262186	3378	-374	24	-67	0	0	-21403	142331	-104873	-126276	7165	-126900	-119735

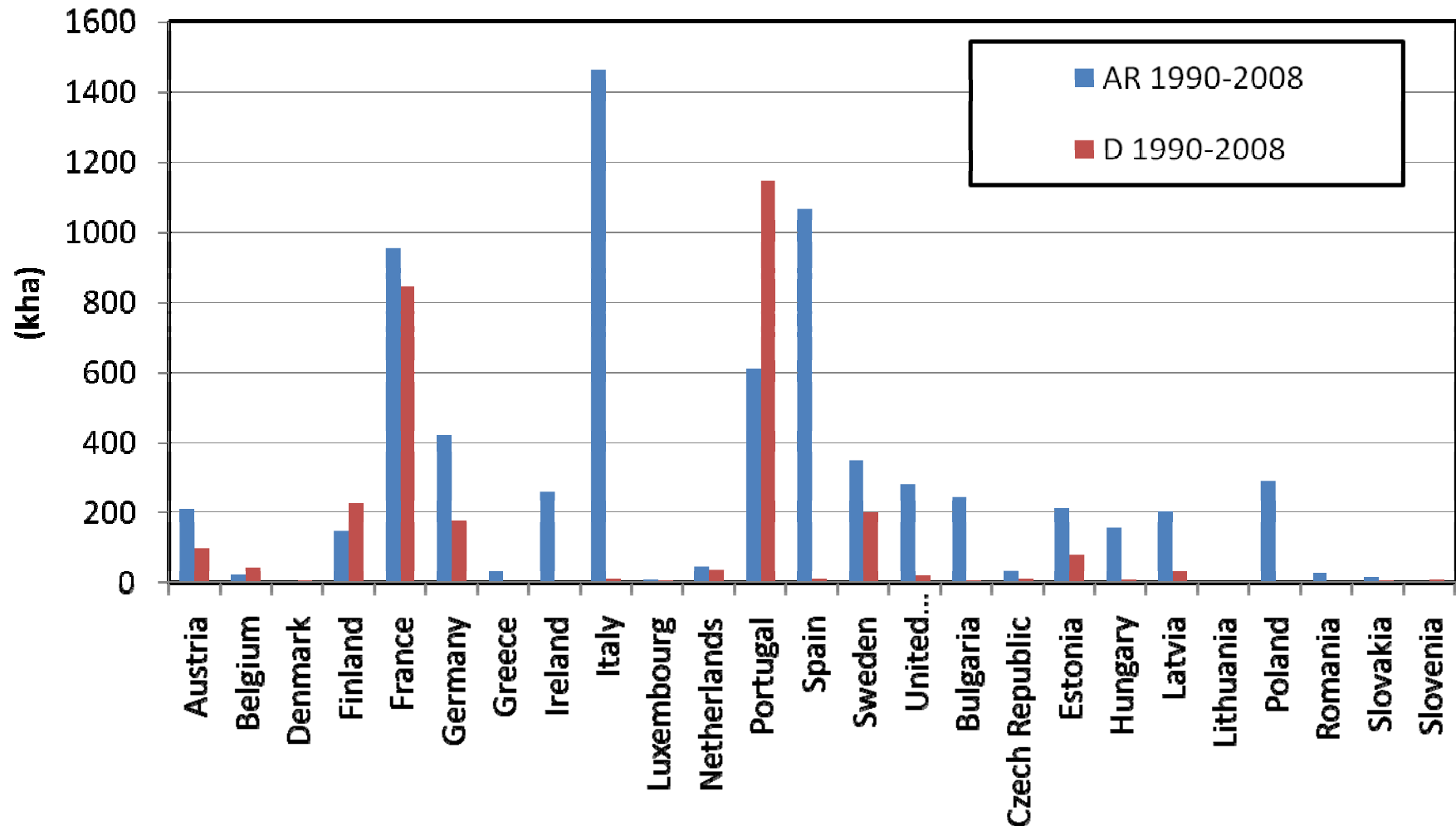
## new MS

	Net emissions (+) and removals (-), Gg CO2eq										Accounting, Gg CO2eq						
	A. Article 3.3 activities			B.1 Forest manage ment	B.2 Cropland management		B.3 Grazing land management		B.4 Revegetation		accounting parameters for FM				Accounting quantity		
	A.1 Aff/Reforestation		A.2. Deforest ation								AQoff	FM Cap	AQcap	AQFM	3.3 activitie s	3.4 activitie s	total
	A.1.1 Lands not harveste d	A.1.2 Lands harveste d															
	2008				1990	2008	1990	2008	1990	2008							
Bulgaria	-1366	NO	273	NA,NO	0	NA,NO	0	NA,NO	0	NA,NO	0	6783	0	0	-1093	0	-1093
Czech R.	-272	NO	160	-4414	0	NA	0	NA	0	NA	0	5867	-4414	-4414	-112	-4414	-4525
Estonia	-534	0	6600	NA	0	NA	0	NA	0	0	0	1833	0	0	6066	0	6066
Hungary	-1183	-1	44	-3862	0	0	0	NA	0	NA	0	5317	-3862	-3862	-1141	-3862	-5003
Latvia	-441	NA,NO	1675	-23595	0	NA	0	NA	0	NA	-1234	6233	-6233	-7468	1234	-7468	-6233
Lithuania	NA	0	NA	NA	0	NA	0	NA	0	0		5133			0		
Poland	-3917	IE,NO	263	-46865	0	NA	0	NA	0	NA	0	15033	-15033	-15033	-3654	-15033	-18687
Romania	-179	NA,NO	74	-36199	NA	NA	NA	NA	-5	-48	0	20167	-20167	-20167	-105	-20210	-20315
Slovakia	-1701	0	3052	NA	0	NA	0	NA	0	0	0	9167	0	0	1351	0	1351
Slovenia	NO	0	2457	-10308	0	NA	0	NA	0	NA		6600			2457		
EU-15	-37749	1135	44914	-262186	3378	-374	24	-67	0	0	-21403	142331	-104873	-126276	7165	-126900	-119735
total EU	-47342	1134	59510	-387429	3378	-374	24	-67	-5	-48	-22637	224465	-154582	-177219	12168	-177886	-168175

Surprisingly high emissions from **D** (1% of 1990 total GHGs), higher than removals from **AR**!  
**Offset of 3.3 debits** with the FM sink important for some country.

Simulating the effect of the 2008 numbers over 1<sup>st</sup> CP (and considering all the accounting rules), the **credits from KP-LULUCF for EU should be around 1% of 1990 total GHGs.**

## Areas of AR and D for 1990-2008



EU 1990-2008: 7073 kha of AR, 2997 kha of D (total EU forest area 158000 kha)  
Comparability in D seems to be a problem ....

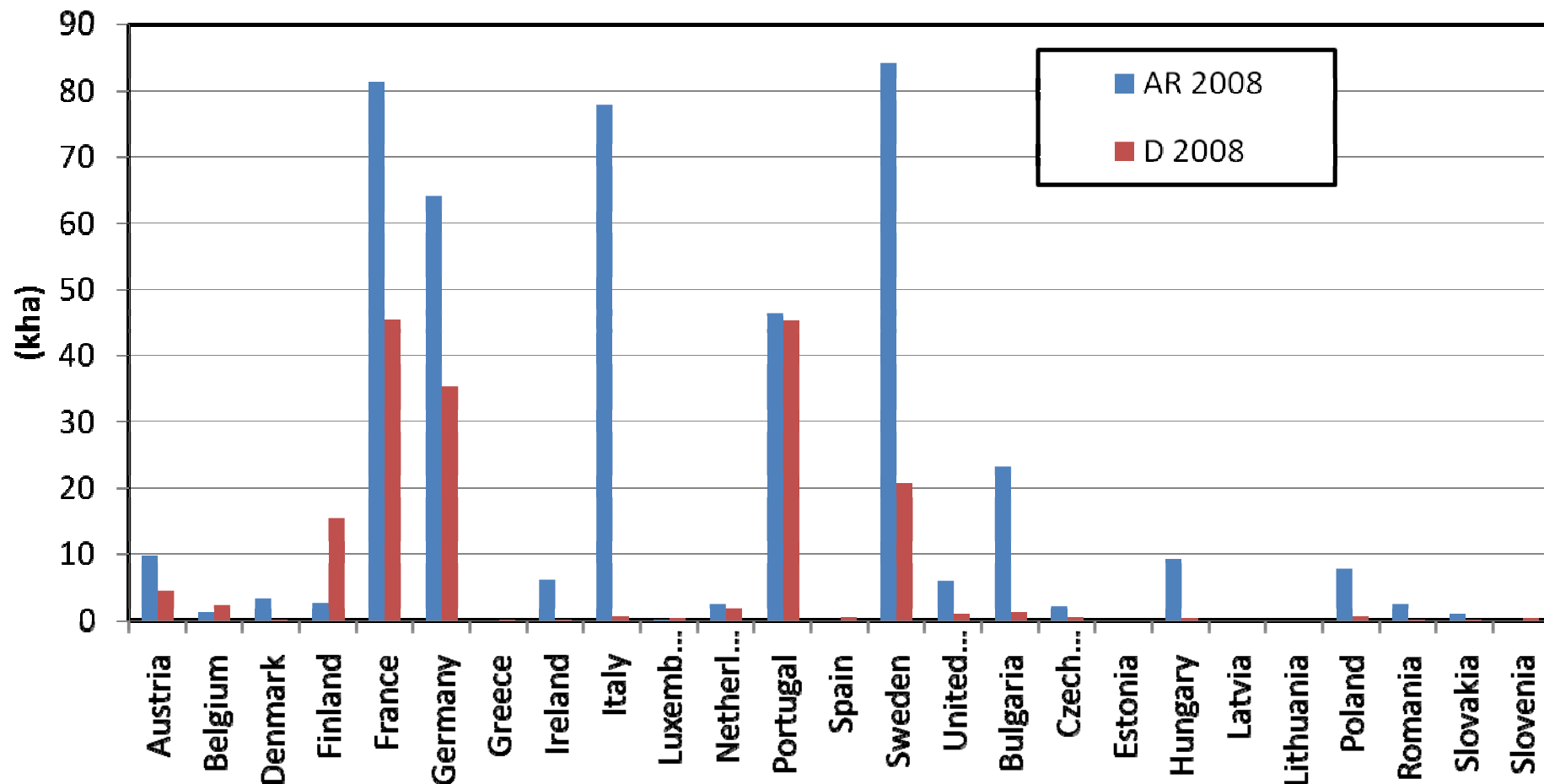
## Areas for the year 2008

**Table NIR 2. LAND TRANSITION MATRIX**

Areas and changes in areas between the previous and the current inventory year <sup>(1), (2), (3)</sup>

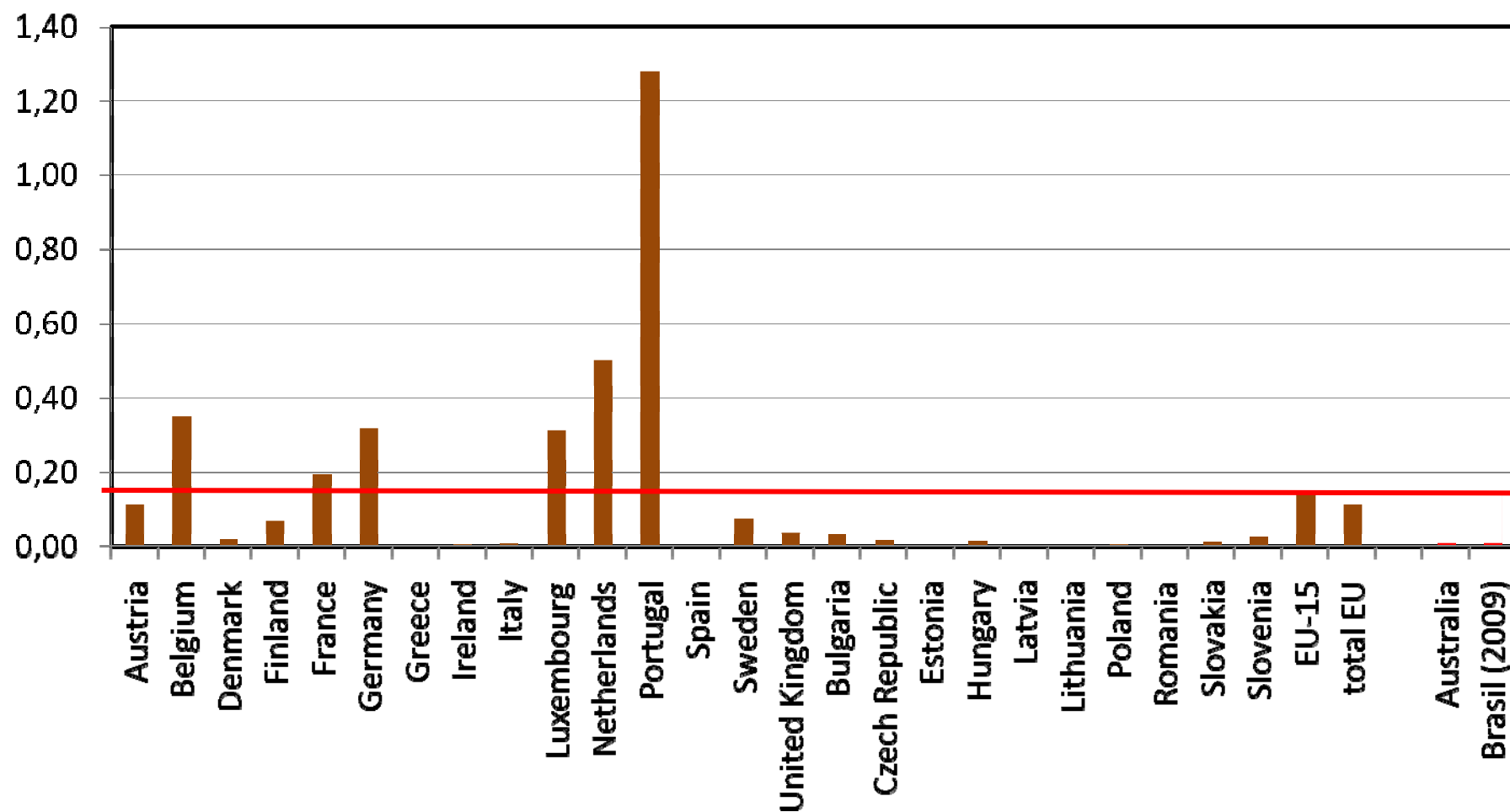
To current inventory  From previous inventory year		Article 3.3 activities		Article 3.4 activities				Other <sup>(5)</sup>	Total area at the beginning of the current inventory year <sup>(6)</sup>
		Afforestation and Reforestation	Deforestation	Forest Management (if elected)	Cropland Management (if elected)	Grazing Land Management (if elected)	Revegetation (if elected)		
		(kha)							
Article 3.3 activities	Afforestation and Reforestation	281,45	0,00						281,45
	Deforestation		0,00						0,00
Article 3.4 activities	Forest Management (if elected)		0,62	8.827,54					8.828,16
	Cropland Management <sup>(4)</sup> (if elected)	NA	NA		NA	NA	NA		NA
	Grazing Land Management <sup>(4)</sup> (if elected)	NA	NA		NA	NA	NA		NA
	Revegetation <sup>(4)</sup> (if elected)	NA			NA	NA	NA		NA
Other <sup>(5)</sup>		7,88	NA	NA	NA	NA	NA	303.561,89	303.569,77
Total area at the end of the current inventory year		289,33	0,62	8.827,54	NA	NA	NA	303.561,89	312.679,38

## Areas for the year 2008

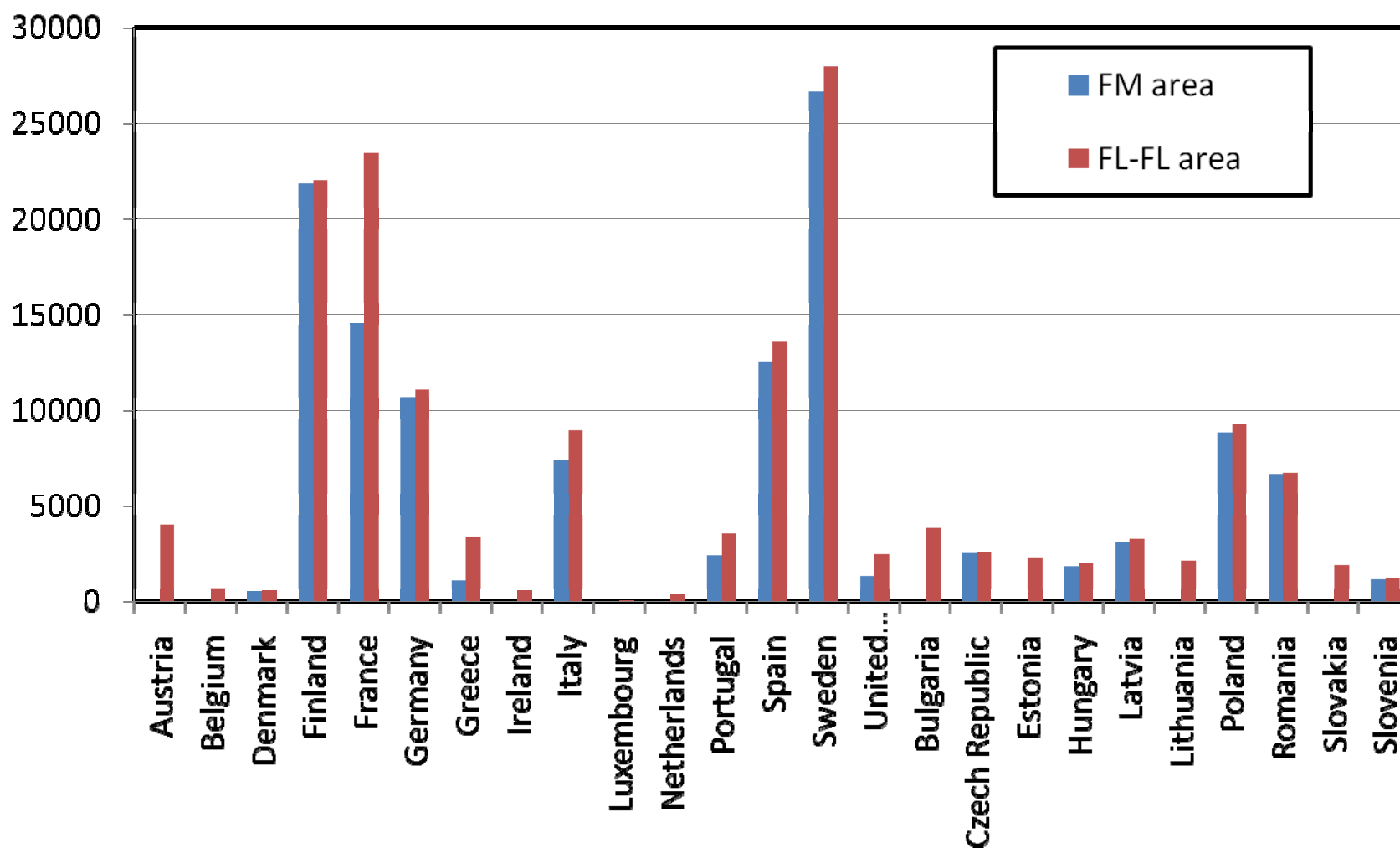


At EU level in 2008: 432 kha of AR, 177 kha of D (total EU forest area 158000 kha)  
AR for ES?

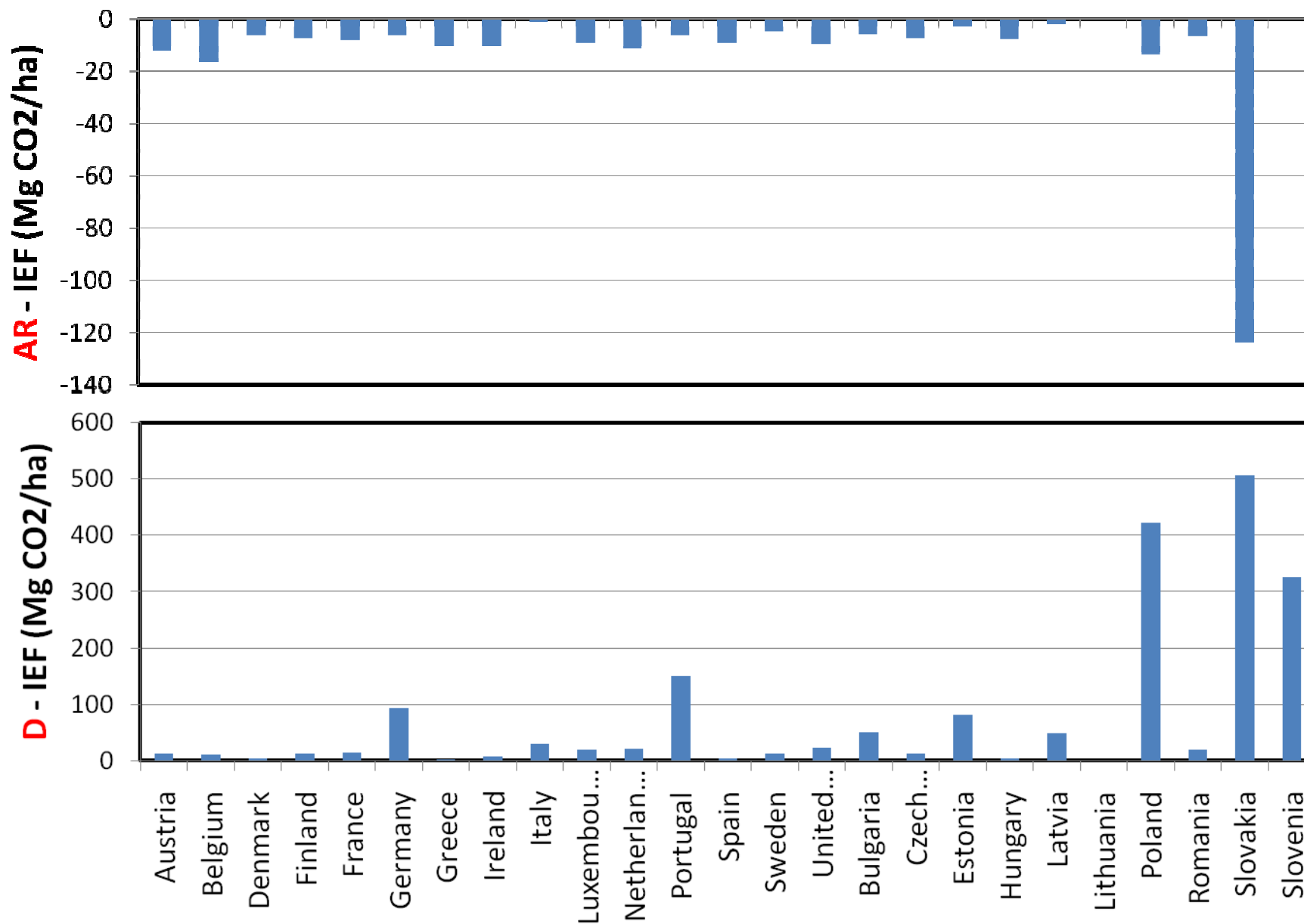
## D occurred in the year 2008 (% of total forest area)



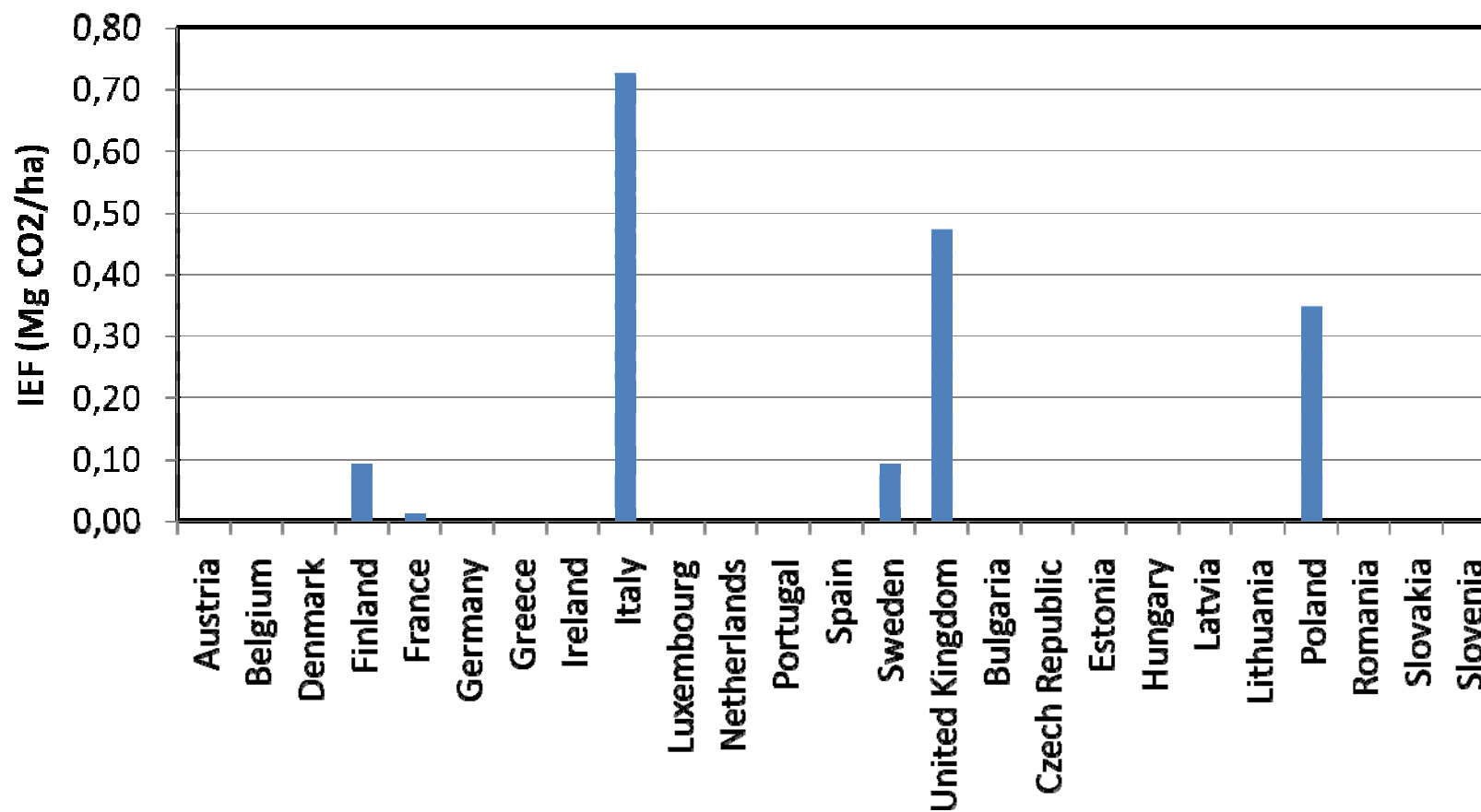
## Area of FM



## Emission factor



## FM mineral soil



**Synthesis of selected supplementary  
information on KP LULUCF activities  
reported by MS in their NIRs  
(focus on EU-15)**

## Description of how the definitions of each activity under Art. 3.3 and each elected activity under Art. 3.4 have been implemented and applied consistently

In most cases, definitions of KP activities have been applied with a broad interpretation. For instance, most countries considered as “directly human induced AR” any expansion in forest area since 1990 (but some MS had problems during review).

Most countries considered all forest area falling into the “forest management” definition, with few exceptions (e.g. France, Greece, Portugal and Austria). Portugal has distinguished CM and GM into areas with a set of specific management practices (e.g no-till) from those without specific management practices.

## Precedence conditions and/or hierarchy among Art. 3.4 activities

Areas with potential conflict or overlapping between activities are present mainly in Southern Europe (e.g. agroforestry systems).

MS	Hierarchy	Comments
Denmark	FM-CM-GM	-
Portugal	CM-GM-FM	According to the NIR 2010 there is an inconsistent application of this hierarchy, with current precedence of FM on both others lands (to be improved in the future)
Spain	FM-CM	Additionally there is defined a secondary hierarchy within the CM lands, as follows: i) Transitions from herbaceous crops (including fallow lands) to woody crops, ii) Practice of soil management in woody crops and iii) Transitions between woody crops

## Land-related information

The majority of the EU-15 Member States reported a single geographical boundary at country level due to the fact that the systems underpinning GHG estimations (data collecting systems, databases, QA/QC and verification procedures) have been designed for the entire country scale (further breakdown of the country area would risk generating random uncertainty for smaller units).

Nevertheless, several large countries report two (e.g. Finland) or more geographical boundaries (e.g. France, Greece, Italy, Spain and UK, all of them by administrative regions).

## Methodology used to develop the land transition matrix

To be complete and consistent, the sum of total reported areas should match the official statistics of total national area and be constant over time. While this “land balance principle” appears satisfied in the vast majority of MS, few MS had some difficulty in understanding how to fill table NIR 2 and some minor reporting problems (e.g. the total reported area being much lower than total national area because the cells “other” were not filled).

Some MS reported difficulties in assessing land use changes.

## Maps and/or database to identify the geographical locations, and the system of identification codes for the geographical

MS	Methods			Land identification and tracking features for the “lands” or “units of lands”
	NFI	Mapping (including EO –Earth Observations methods)	Land registry systems	
Austria	X			Statistical methods, random distribution of units of land
Belgium	X	X		Georeferenced points and orthophotoplans collections, aerial photographs (in 1990) and cadastre/land parcel integrated system. High resolution images (in 2000) used for clarification of NFI plot in doubt
Denmark	X	X		Land cover EO generated maps
Finland	X			Statistical methods, GPS coordinate of the NFI plots, random distribution of units of land
France		X		Statistical methods, random distribution of units of land or lands
Germany		X		Precise geographical locations and its shapes in wall-to-wall mapping approach
Greece			X	National land registry
Ireland		X		Sectoral ARD land registry, GPS database. Data is submitted to internal verification and QAQC procedure .
Italy	X		X	NFI plots coordinates (AR), thus random distribution of units of land. Land statistics for D for each region of the country
Luxemburg				na
Netherlands		X		ARD activities are recorded on a pixel basis
Portugal	X	X		NFI codes and intersection overlaid on Land use map
Spain		X	X	AR data is based on land registry system. D is based on CLC maps
Sweden	X			NFI data, random distribution of units of land
UK			X	Statistics by forest authorities

MS	Reporting Method used for identifying the geographical locations	Approach used for land representation
<b>Austria</b>	1	2/3
<b>Belgium</b>	1	3
<b>Denmark</b>	1	3
<b>Finland</b>	1	3
<b>France</b>	1	1/2
<b>Germany</b>	1	2 (3 strating with 2008)
<b>Greece</b>	1	1
<b>Ireland</b>	2 for AR and 1 for D	3
<b>Italy</b>	1	3 for AR and 2 for D
<b>Luxembourg</b>	na	na
<b>Netherlands</b>	2	3
<b>Portugal</b>	1	3
<b>Spain</b>	1	1/2
<b>Sweden</b>	1	3
<b>UK</b>	1	1/2

There is not much information on the EU 15's MS NIR on the system of identification codes for the geographical locations

## Justification when omitting any carbon pool

	Pools/sources not considered	Activity	Demonstration/Reasoning, including the very short methods description
<b>Austria</b>	DOM	AR/ D	DOM is assumed <i>not to occur</i> under slow ecosystem dynamics/ In DOM the standing dead tress is considered as “loss”
<b>Belgium</b>			
<b>Denmark</b>	No C pool is omitted for FM	CM, GM	Only perennial woody crops or vegetation is reported so far (not annual)
<b>Finland</b>	DOM	AR	Assumed to be marginal over short period of time since 1990
<b>France</b>	Dead wood	D	
<b>Germany</b>	SOM, LT	FM	Reasoning based on system functioning
	DOM	AR	Reasoning based on system functioning
<b>Greece</b>	DOM, SOM	AR, D, FM	Not yet assessed
<b>Ireland</b>	SOM	FM	Statistical supported data that this pool is not a source
<b>Italy</b>	No C pool is omitted		
<b>Luxembourg</b>	na	na	
<b>Netherlands</b>	DOM (LT, DW)	AR	Statistics based on NFI data
	SOM (mineral and organic soils)	AR, D	Not yet reported
<b>Portugal</b>	LT, DW, SOM	AR, D, FM	FM is non Key category, so Tier 1 IPCC
<b>Spain</b>	SOM, DOM	AR, D FM	Reasoning based on system functioning
	DOM is omitted	CM	Assuming a priori this pool does not exist
<b>Sweden</b>	No C pool is omitted		
<b>United Kingdom</b>	No C pool is omitted		

## Information that demonstrates that AR is direct human-induced

	Type of information / justification provided				
	Areas converted, either subject to subsidies or not, have been reported in registries either for authorization or compilation of land use changes	Whole national territory covered by legal instruments for Land planning / management, therefore any change in land use is directly human-induced	Where a conversion results in a land use subject to management practice, the conversion is considered directly human-induced	As all land area is under management (i.e. subject to some kind of human interactions), all changes are considered as directly human-induced	A decision to change the use of a land or a decision not to continue the previous management practices has been made, which allow for conversion
<b>Austria</b>		X			
<b>Belgium</b>				X	
<b>Denmark</b>				X	
<b>Finland</b>					X
<b>France</b>					
<b>Germany</b>		X			
<b>Greece</b>	X				
<b>Ireland</b>	X				
<b>Italy</b>		X			
<b>Luxembourg</b>					
<b>Netherland</b>				X	
<b>Portugal</b>				X	
<b>Spain</b>	X				
<b>Sweden</b>			X		
<b>UK</b>	X				

## Information on how harvesting ..... is distinguished from deforestation

MS	Short description of the approach
<b>Austria</b>	Differentiation of temporarily unstocked areas (e.g. harvested area, disturbances) and deforestation is made by actual procedures implemented by NFIs (e.g. written procedure for field assessment, training of field staff to rightly distinguish between them). For deforestation field assessment procedure involve identification of the significant visible changes in soil structure or ground vegetation which may not represent the natural succession of a forest (e.g. consequences of anthropogenic activities like ploughing, crop production, mowing or construction activities or natural abortion of the forest and its stand by e.g. landslides)
<b>Belgium</b>	Permits released by the regional forestry authorities, thus the fate of all land is known (usually deforestation occurs only for new settlements purpose)
<b>Denmark</b>	Deforested land is detected by analysis of satellite images, further on confirmed by additional sources (i.e. documentations). Mandatory period for reforestation of cut areas is 10 years
<b>Finland</b>	If NFI sample plot is on a clearcut area, the field assessor assesses if there are signs for permanent conversion or only cut. Maximum period allowed for regeneration is 3 years, with a usual delay in reforestation of 2 years.
<b>France</b>	Land use/cover assessment is able to identify the land use and activity change on annual basis
<b>Germany</b>	Law and observance of its implementation ensure that cut or natural disturbance area is reestablished as forest
<b>Greece</b>	Only legally executed deforestations are considered under "D", while the land that lost illegally the forest cover is not classified as deforested, but as areas that temporary loss of woody vegetation
<b>Ireland</b>	NFI to identify if the lands are unstocked or deforested (5 years periodicity)
<b>Netherlands</b>	Mapping method used to ensure differentiation between deforestation and non deforestation tree cover loss
<b>Portugal</b>	With current methodology if in 5 years the forest is not restored then the land is deemed deforested
<b>Spain</b>	NFI cycles (10 years) suppose to capture any not regenerated areas (eg after forest fires)
<b>Sweden</b>	Missing forest cover identified for two consecutive inventories is not enough to classify the plot as deforested, but additional observable changes (as presence of infrastructure)
<b>UK</b>	Felling licences system, in the near future doubled by new NFI, ensures the relevant activity areas are captured

## Information on the size and geographical location of forest areas that have lost forest cover but which are not yet classified as deforested

Scarce information is available

**Thanks!**