Land cover and land use

Contents

1. Land cover 3
2. Agricultural area 4

Change in agricultural area 5

3. Irrigated land 6
4. Area under organic farming 7
5. Forestry 10

Forest and other wooded land 10

Woody vegetation 12

6. High Nature Value Farmland 13

Figures

Figure 1: Land cover classes 3
Figure 2: Share of UAA in different land uses at NUTS 2 level, 2013 4
Figure 3: Change in agricultural area including grassland, 2000-2012 5
Figure 4: Utilised agricultural area 2000-2016 5
Figure 5: Area under organic cultivation in the EU 2002-2016 7
Figure 6: Average annual growth rate of the share of UAA under organic farming, 2010-2016 8
Figure 7: Total UAA under organic farming and share of UAA under organic farming, 2016 8
Figure 8: Share of organic in total UAA by sector, EU-28, 2015 9
Figure 9: Area of forest available for wood supply, 2015 10
Figure 10: Forest and other wooded land over time, EU-28 10
Figure 11: Change in the extent of forest and other wooded land, 1990-2015 11
Figure 12: Percentage of woody vegetation on agricultural land 12
Figure 13: Share of HNV farmland in total UAA by NUTS 2 area, 2012 13

Tables

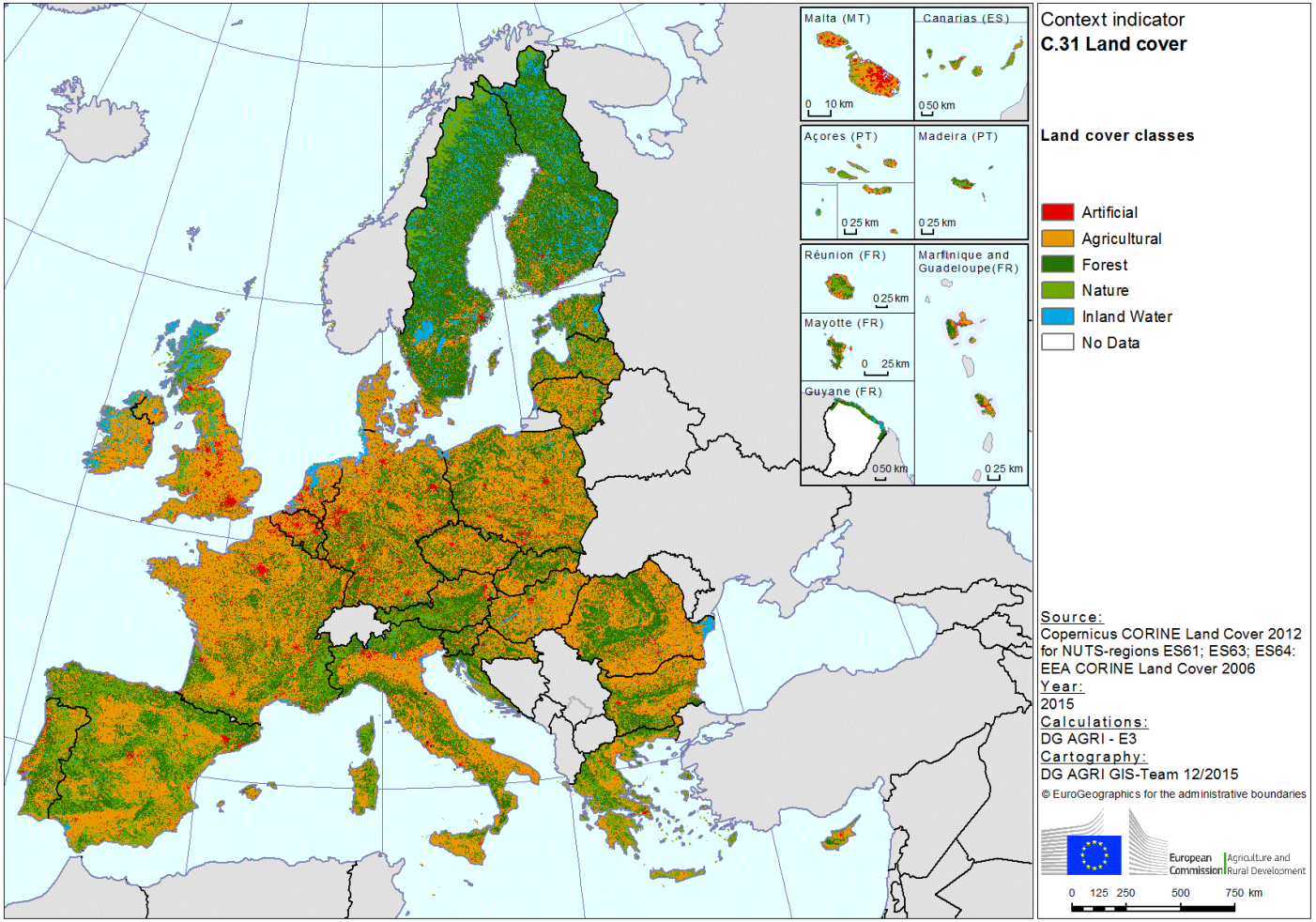
Table 1: Irrigated land, 2007-2013 6
Table 2: Main categories of organic land in the EU-28, 2016 9

Contact: DG Agriculture and Rural Development, Unit Farm Economics
Tel: +32-2-29 91111 / E-mail: AGRI-C3@ec.europa.eu

1. Land cover

- Agricultural land (including natural grassland) accounts for almost half of the European territory (48%) and has a notably higher share in the territory of the EU-N13 (57%) than in the EU-15 (39%).
- The share of the different land cover categories varies across Europe and is correlated with the physical characteristics of the territory such as mountains and remoteness of the area. Generally the countries with a lower percentage of agricultural area present higher percentages of forests.
- Taken together, agricultural land and forests (including natural grassland and transitional woodland-shrubs) represent around 85% of land cover in the EU-28, ranging from 52% in Malta to more than 90% in nine countries (Slovenia, Lithuania, Bulgaria, Latvia, Slovakia, Czech Republic, Poland, Croatia and Romania).

Figure 1: Land cover classes

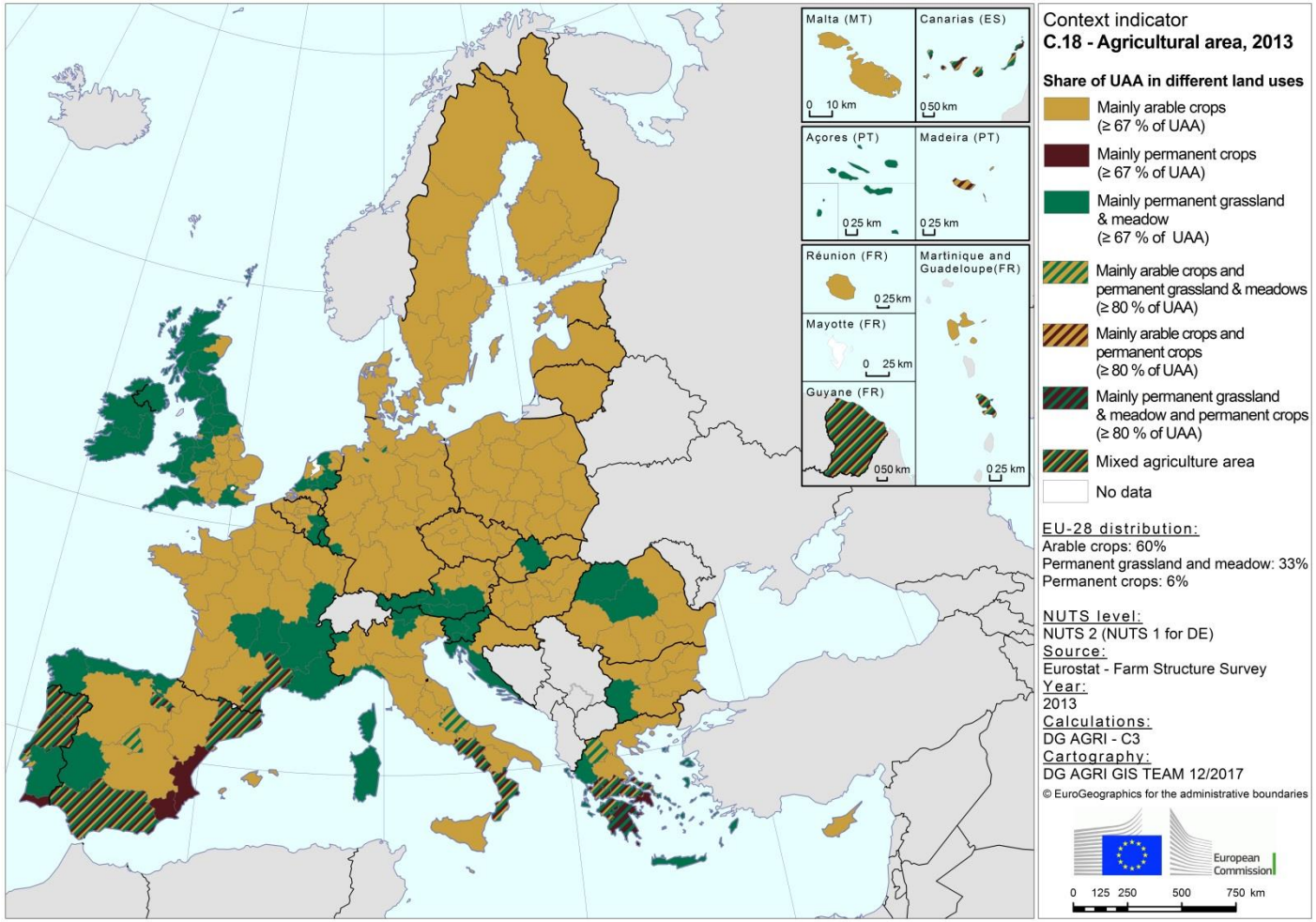


See also Common Context Indicator 31: Land cover

2. Agricultural area

- In the EU-28, the total utilised agricultural area (UAA) came to nearly 179 million ha in 2016.
- 71 % of the total agricultural land is located in the EU-15 and 28% in the EU-N13.
- France has the largest agricultural area (29 million ha) covering 16% of the total UAA in Europe, followed by Spain (24 million ha), the UK and Germany (both around 17 million ha).
- 59% of the UAA was used for arable crops in 2016, 34% for permanent grassland and meadow, and 7% for permanent crops.
- More than 18.6 million hectares (10.7% of UAA) were potentially irrigable in 2013. 95% of this area is located in the EU-15, mostly in Southern Europe.
- The agricultural area irrigated at least once in 2013 in the EU-28 came to just over 10 million hectares, accounting for 5.9% of the total UAA.

Figure 2: Share of UAA in different land uses at NUTS 2 level, 2013



See also

- Common Context Indicator 18: Agricultural area,
- Common Context Indicator 20: Irrigated land and
- Table [apro_acs_a] in the Eurostat database.

Change in agricultural area

- According to **satellite images (Corine Land Cover[1])**, the area covered by agricultural land decreased by 1.2% across the EU between 2000 and 2012.
- The most significant losses were observed in Poland and the UK, as well as in parts of Spain and Germany.
- On the other hand, agricultural land cover increased in Romania and Bulgaria, as well as in certain regions of Spain, Italy, Austria, France, Ireland and Sweden.
- **Statistical surveys** provide a slightly different picture (often linked to the methodology employed). They show a loss of 6.5% of the agricultural land between 2000 and 2016, close to 12.5 million ha.
- Most of these losses took place between 2000 and 2010 (-0.63% per year). Since 2010, the agricultural area has stabilised in the EU (-0.07% per year), except for Austria, which lost 15% of its agricultural land between 2010 and 2016.

See also
Common Context Indicator 31: Land cover
and table [apro_acs_a] in the Eurostat database.

[1] http://land.copernicus.eu/pan-european/corine-land-cover

Figure 3: Change in agricultural area including grassland, 2000-2012

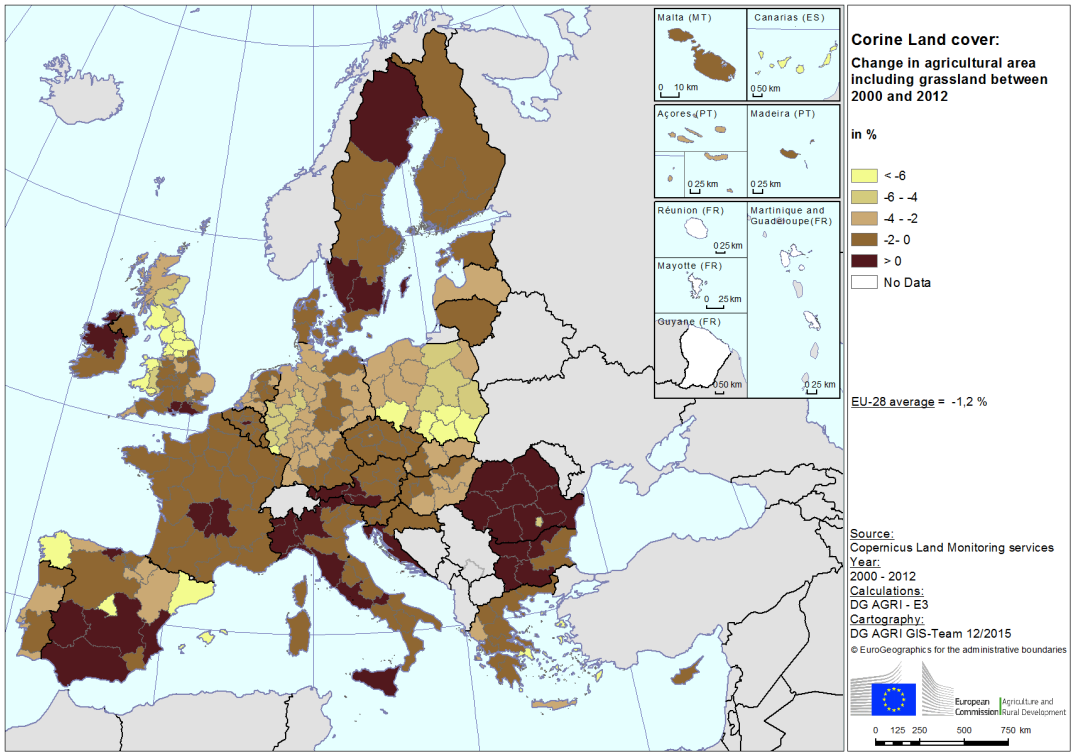
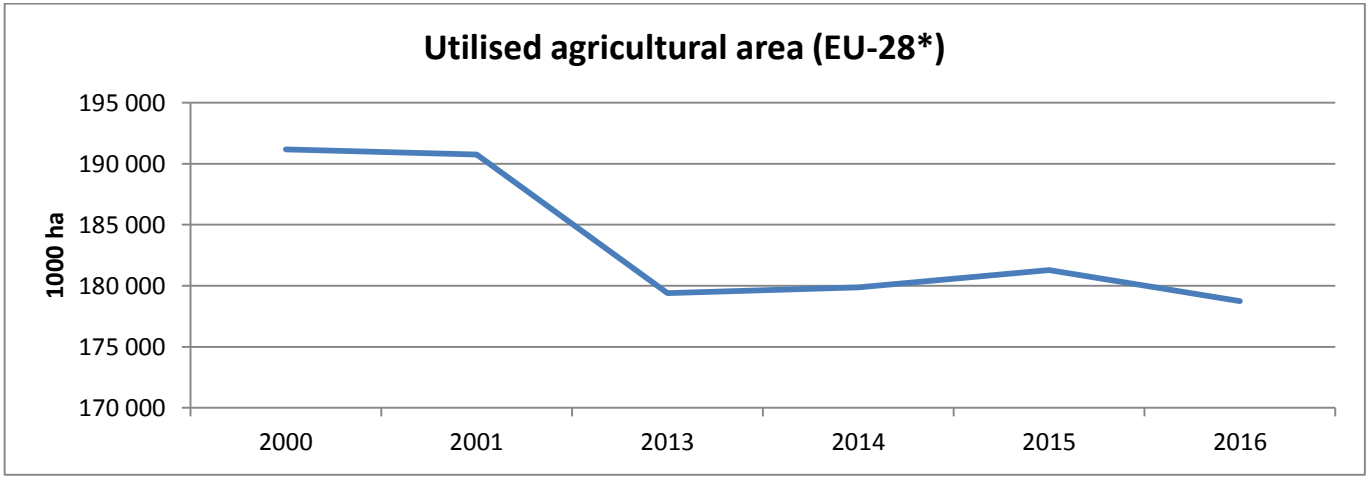


Figure 4: Utilised agricultural area 2000-2016



* no data for Bulgaria in 2005; no data for Italy in 2009 Data source: Eurostat

3. Irrigated land

- Irrigated land refers to the area irrigated at least once a year. It gives an indication of the pressure of agriculture on water resources. While the irrigable area, which is the area equipped for irrigation, does not show much variation from year to year, the irrigated area can in fact vary significantly due to meteorological conditions or the choice of crop, for instance.
- In 2013 the total irrigated area in the EU was 10.2 million hectares, accounting for 5.9% of the total Utilised Agricultural Area (UAA).
- Southern European countries like Spain, France, Italy, Greece and Portugal show the highest amounts of irrigated land. Indeed, in Southern Europe agriculture accounts for more than 50% of water abstractions (e.g., Spain 60%, Greece 88%).
- Spain, France, Italy, Greece and Portugal together account for 86% of the total irrigated land. On the other hand, in Denmark and the Netherlands irrigated UAA makes up less than 3% of the total UAA.

See also Common Context Indicator 20: Irrigated land

Table 1: Irrigated land, 2007-2013

Indicator	C.20 Irrigated land		Change of irrigated land
Measurement	Total irrigated land	% irrigated of total UAA	
Source	Eurostat - Farm Structure Survey		
Year	2013		2007-2013
Unit	ha	%	%
Country			
Belgium	5 740	0.4	1.1
Bulgaria	98 670	2.1	35.8
Czech Republic	17 840	0.5	-10.4
Denmark	241 980	9.2	-4.8
Germany	365 590	2.2	:
Estonia	310	0.0	:
Ireland	0	0.0	0.0
Greece	1 164 620	24.0	-9.0
Spain	2 898 970	12.4	-11.2
France	1 423 640	5.1	-5.8
Croatia	13 430	0.9	55.8
Italy	2 866 330	23.7	7.5
Cyprus	24 670	22.6	-21.1
Latvia	410	0.0	-33.9
Lithuania	1 600	0.1	60.0
Luxembourg	:	:	:
Hungary	141 190	3.0	61.1
Malta	3 660	33.6	30.2
Netherlands	101 770	5.5	-49.7
Austria	51 680	1.9	19.0
Poland	45 550	0.3	-36.8
Portugal	477 160	13.1	13.2
Romania	152 840	1.2	-11.9
Slovenia	2 540	0.5	56.8
Slovakia	24 600	1.3	-37.1
Finland	9 510	0.4	:
Sweden	51 870	1.7	-4.2
United Kingdom	49 130	0.3	-64.4
EU-28	10 235 300 exc. LU	5.9	-1.1
EU-15	9 707 990 exc. LU	7.8	-1.4
EU-N13	527 310	1.1	3.3

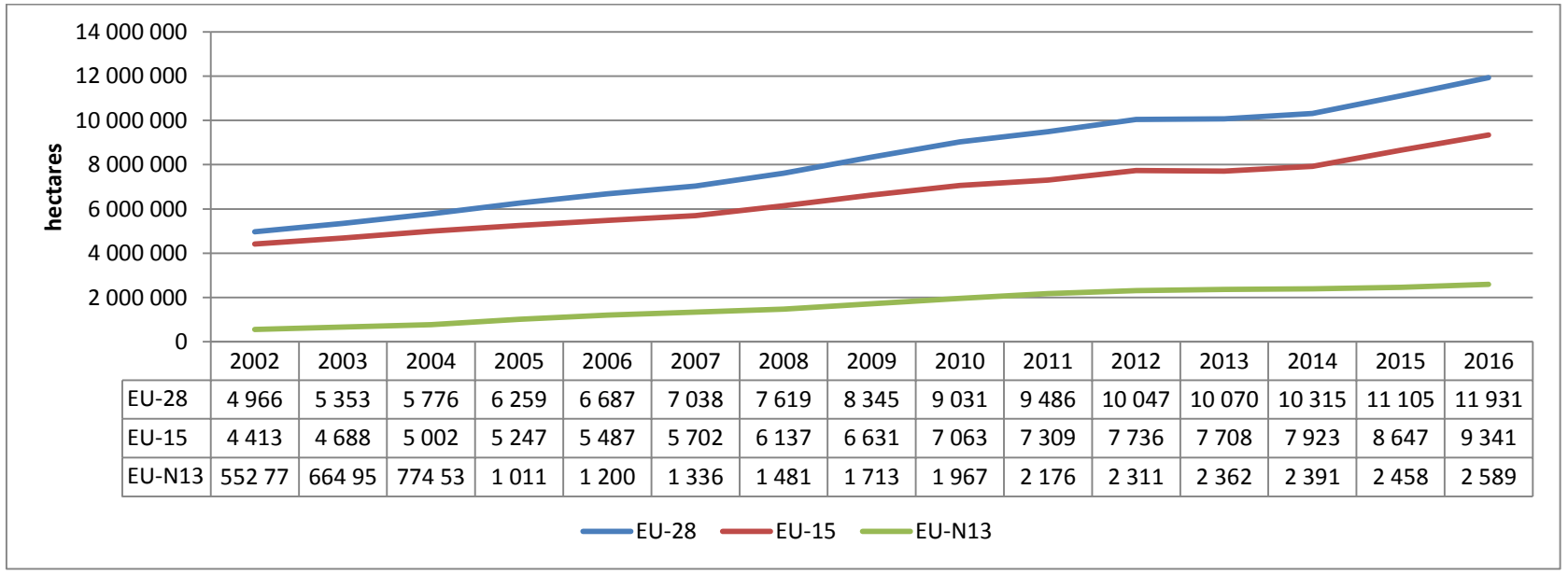
Note: EU aggregates are calculated on the basis of data available.

4. Area under organic farming

- The total area under organic farming in the EU-28 (i.e. the fully converted area and the area under conversion) came to almost 12 million ha in 2016 and accounted for 6.7% of the total UAA.
- The **share of area under conversion** in the total organic area can give an indication of the potential growth in the organic sector in the near future. At EU level[2], the area under conversion represented 23.8% of the total organic area in 2016. The greatest relative growth in the coming years is likely to come from Bulgaria and Croatia where this share was at 77.5% and 68.8% respectively. On the other hand, the United Kingdom, Greece and the Netherlands have less than or around 10% of the total organic area under conversion.

See also Common Context Indicator 19: Agricultural area under organic farming and the report on Facts and figures on organic agriculture in the European Union

Figure 5: Area under organic cultivation in the EU 2002-2016



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28	4 966	5 353	5 776	6 259	6 687	7 038	7 619	8 345	9 031	9 486	10 047	10 070	10 315	11 105	11 931
EU-15	4 413	4 688	5 002	5 247	5 487	5 702	6 137	6 631	7 063	7 309	7 736	7 708	7 923	8 647	9 341
EU-N13	552 77	664 95	774 53	1 011	1 200	1 336	1 481	1 713	1 967	2 176	2 311	2 362	2 391	2 458	2 589

[2] No data on area under conversion available for DE and AT.

Figure 6: Average annual growth rate of the share of UAA under organic farming, 2010-2016

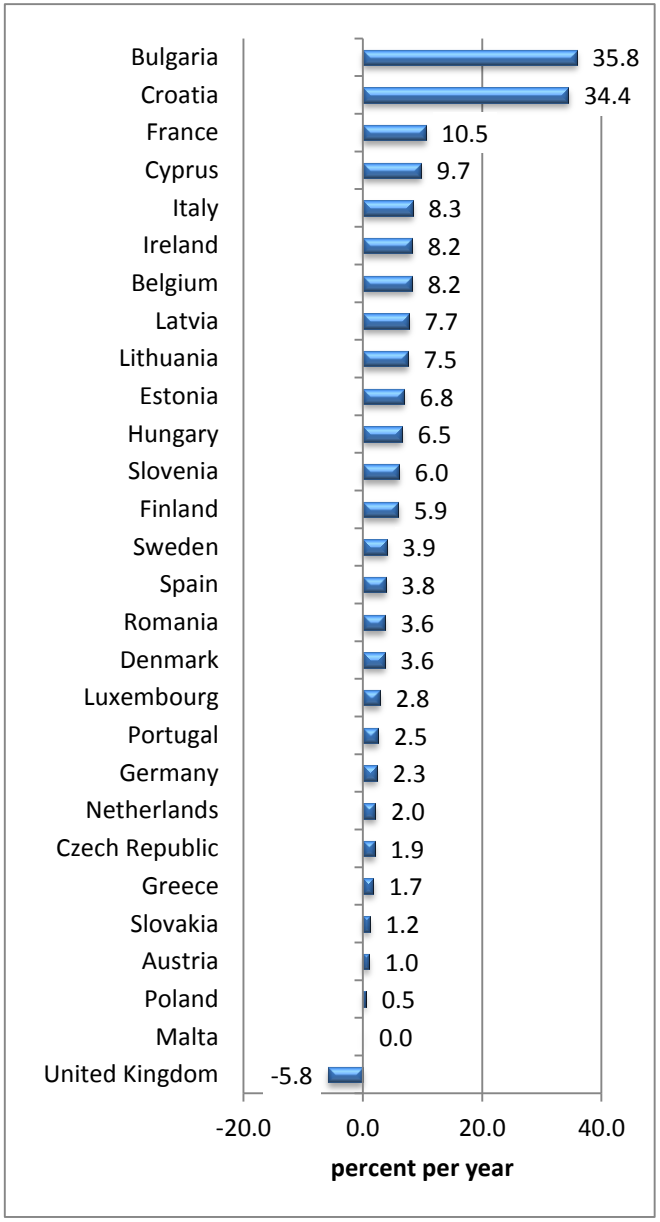
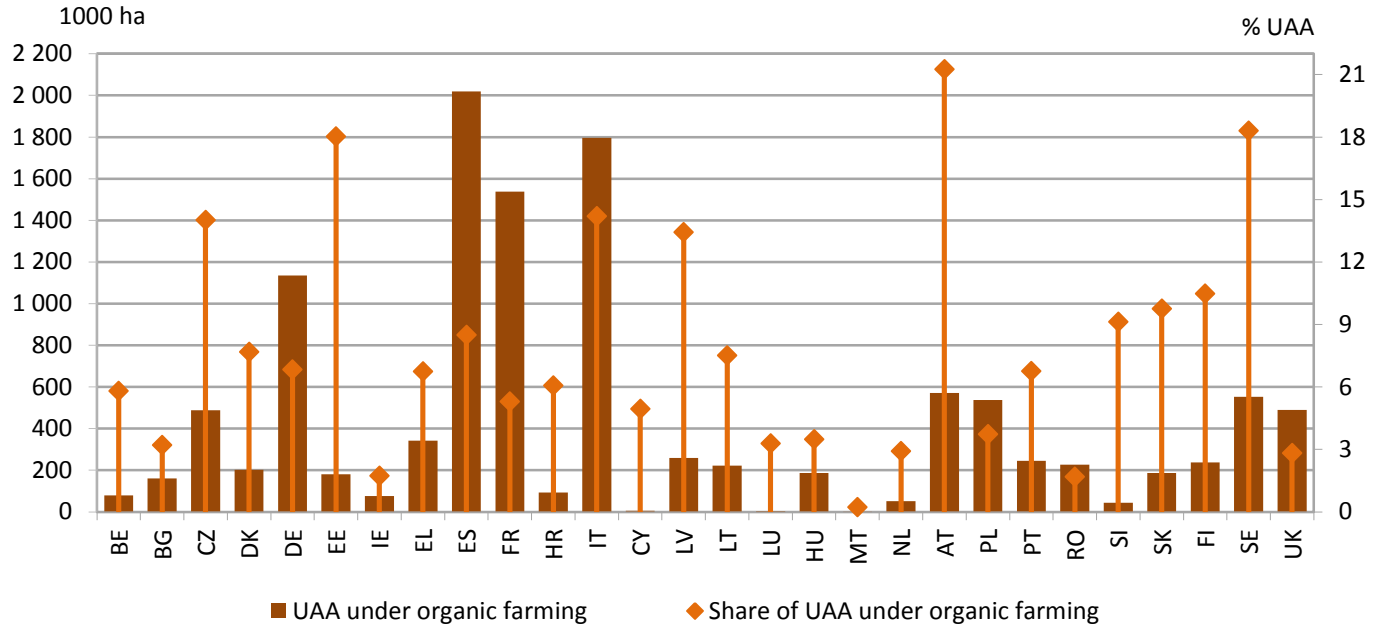


Figure 7: Total UAA under organic farming and share of UAA under organic farming, 2016



- The share of UAA devoted to organic production is increasing rapidly. For the period 2010 - 2016, the organic area increased by 32% in the EU-28, with an average annual growth rate of 4.4%. This average annual increase is particularly significant in Bulgaria (+35.8%), but also in Croatia (+34.4%).
- The size of the organic area differs substantially among Member States. In absolute terms, 4 Member States accounted for more than half (54%) of the total organic area in the EU-28 in 2016, namely Spain (2.0 million ha), Italy (1.8 million ha), France (1.5 million ha) and Germany (1.1 million ha).
- The importance of organic farming in terms of its share in total UAA at national level in 2016 was highest in Austria (21.3%), Sweden (18.3%) and Estonia (18.0%).

- The EU organic area is almost equally divided between permanent grassland (45%) and arable land (44%), the remaining 11% are used for permanent crops/orchards.
- Cereals cover more than 30% of the total UAA of the EU but only 16% of the organic UAA. One element of explanation lies in the fact that permanent pastures are easier and less risky to convert to organic farming than other types of crops (e.g. arable crops).

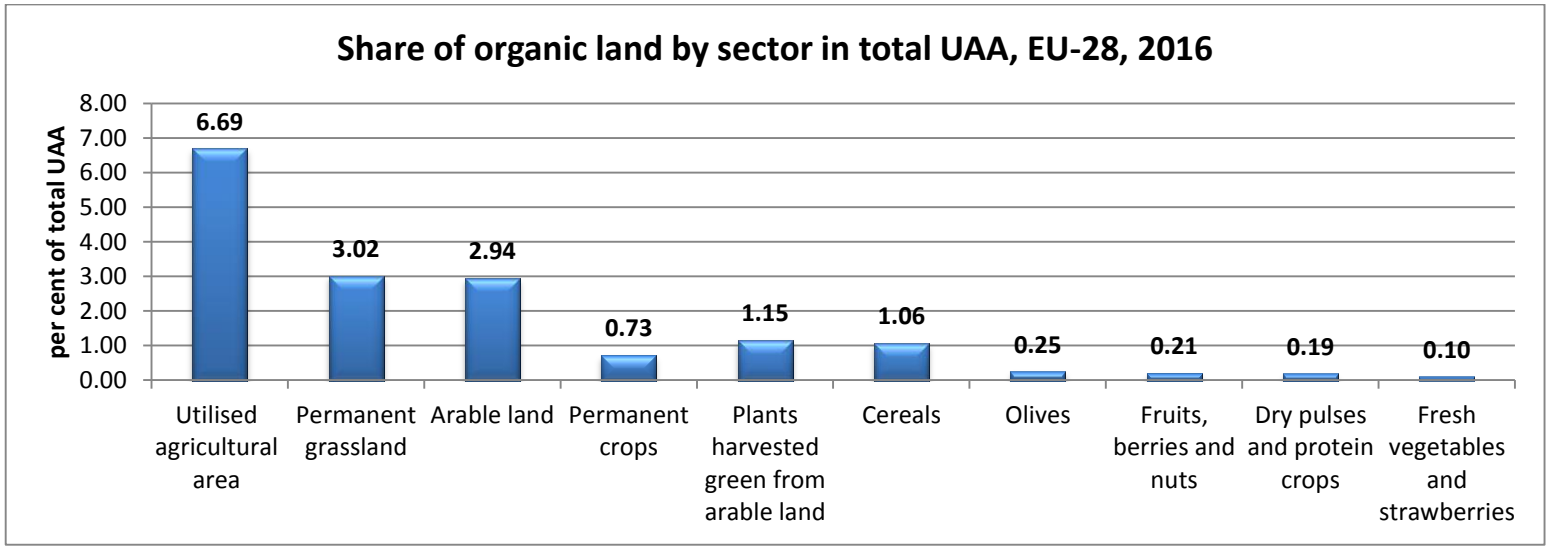
See also the report on Facts and figures on organic agriculture in the European Union

Table 2: Main categories of organic land in the EU-28, 2016

Main categories of organic land in the EU-28, 2016	organic land (ha)	% of total organic land	% of total UAA (conventional and organic)
Utilised agricultural area	11 931 589	100%	6.7
Permanent grassland	5 380 933	45%	3.0
Arable land	5 250 789	44%	2.9
Permanent crops	1 299 867	11%	0.7
Plants harvested green from arable land	2 056 980	17%	1.2
Cereals for the production of grain	1 890 134	16%	1.1
Olives (data from 2015)	*454 154*	*4%*	*0.3*
Fruits, berries and nuts	381 704	3%	0.2
Dry pulses and protein crops	336 957	3%	0.2
Fresh vegetables and strawberries	182 441	2%	0.1

Source: Eurostat (online data code: org_cropar)

Figure 8: Share of organic in total UAA by sector, EU-28, 2015



Source: Eurostat (online data code: org_cropar)

5. Forestry

Forest and other wooded land

- In 2015, forests covered more than 161 million ha in the EU-28 and represented 36% of the total area. Other wooded land (OWL) represented only a small part (4.7%) of the EU-28 total area.
- The area of forests available for wood supply (FAWS) amounted to 134.5 million ha in the EU-28, of which 77% (103.5 million ha) is located in the EU-15 and 23% (30.9 million ha) in the EU-N13. In the EU-28, FAWS corresponded to 83.5% of the total forest area and this share was quite similar in the EU-15 (84.1%) and in the EU-N13 (81.6%).
- In the EU-28, the area of forest and other wooded land showed an increase of 5.2% (8.9 million ha) between 1990 and 2015. The biggest increase in relative terms was registered in Ireland (55.8%), followed by Italy (21.8%) and Hungary (21.6%).
- In absolute terms, Italy, Spain and France showed the biggest increase in forests and other wooded land.

See also Common Context Indicator 29: Forest and other wooded land (FOWL)

Figure 9: Area of forest available for wood supply, 2015

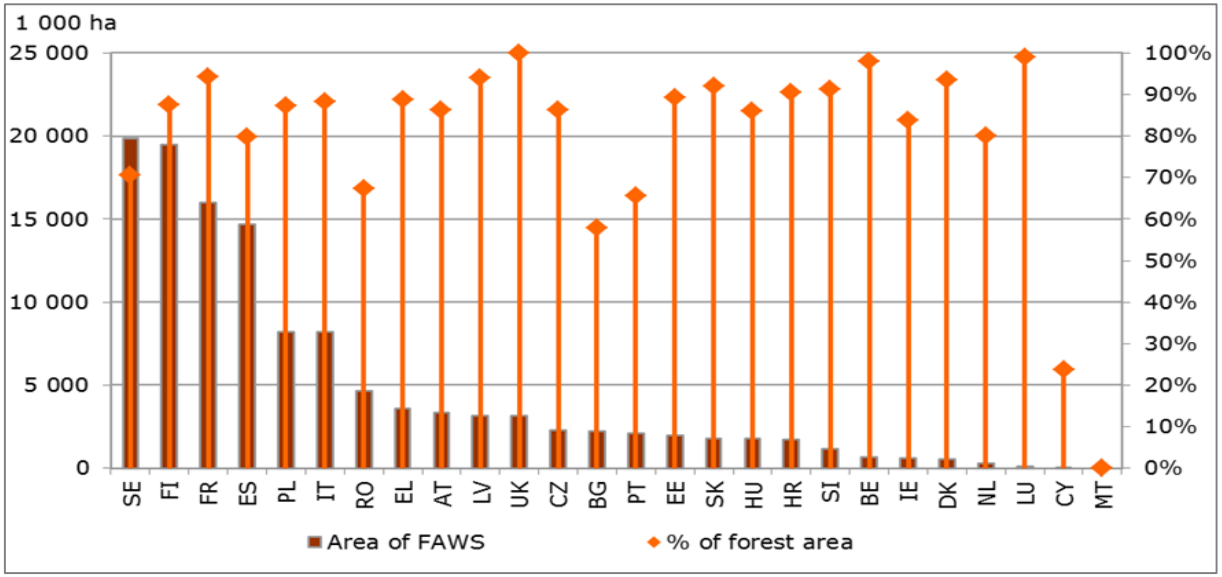
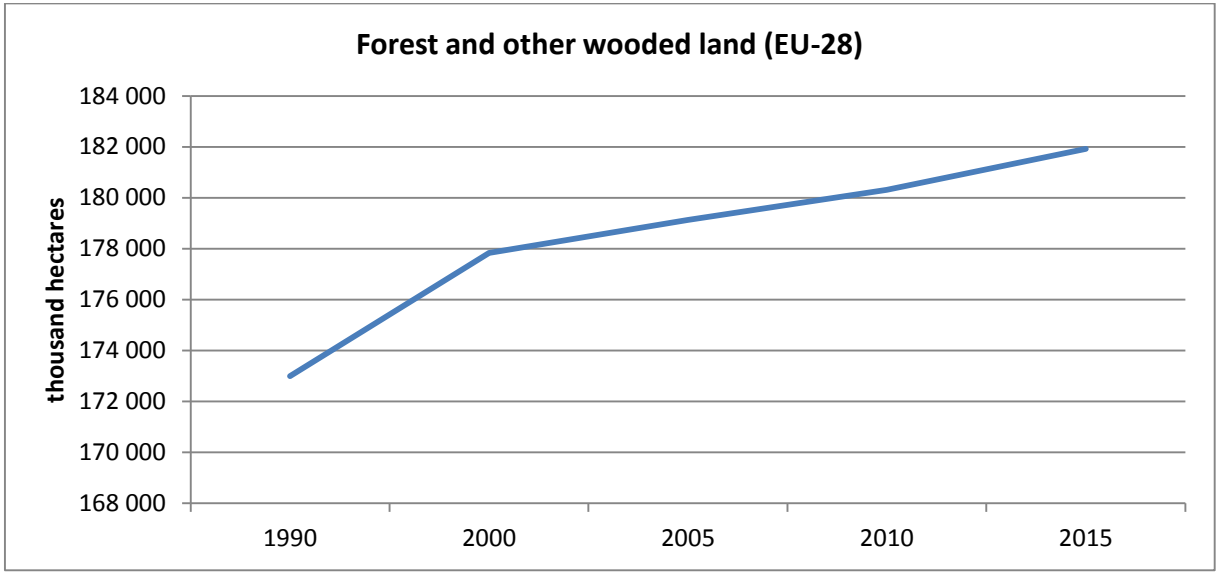


Figure 10: Forest and other wooded land over time, EU-28



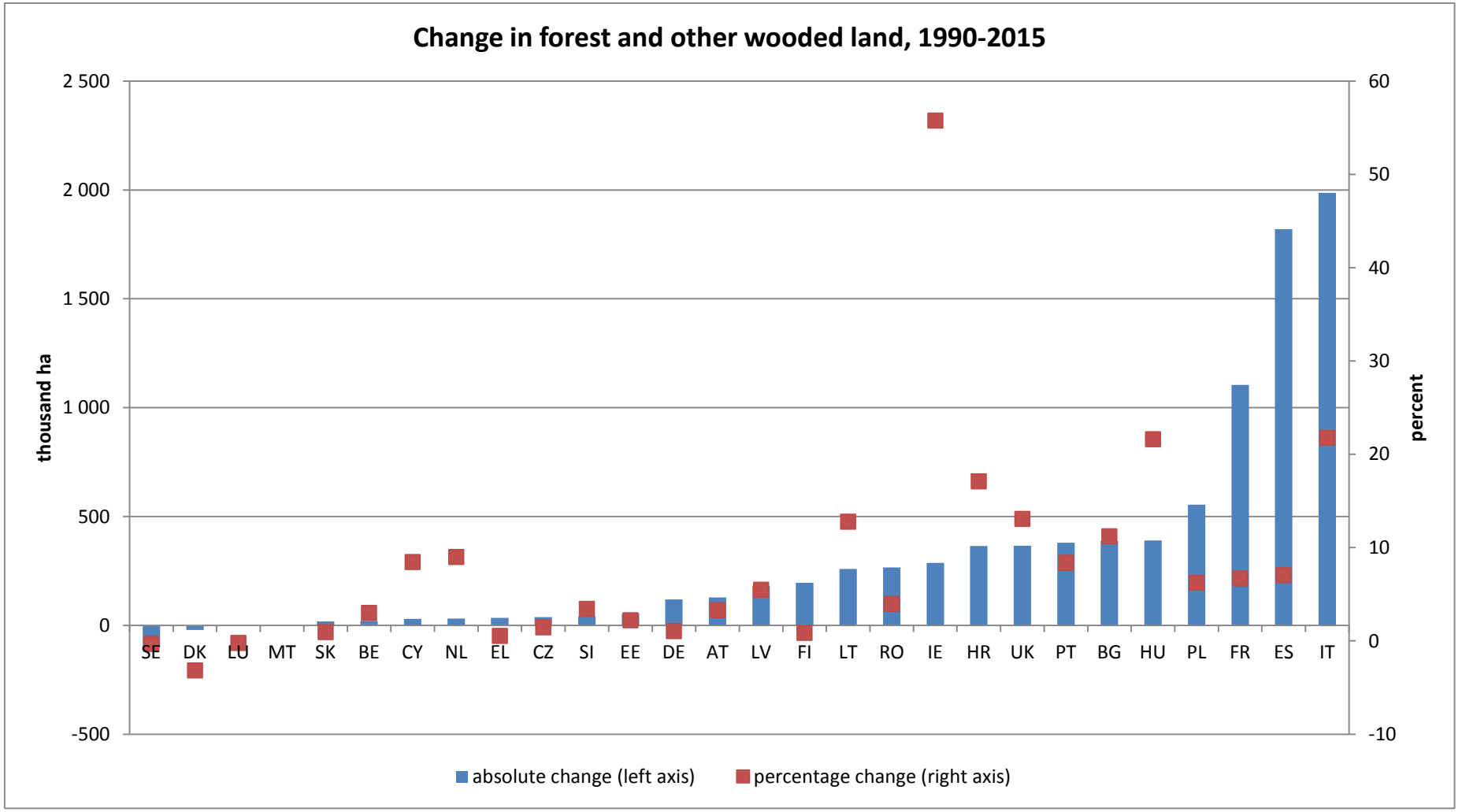
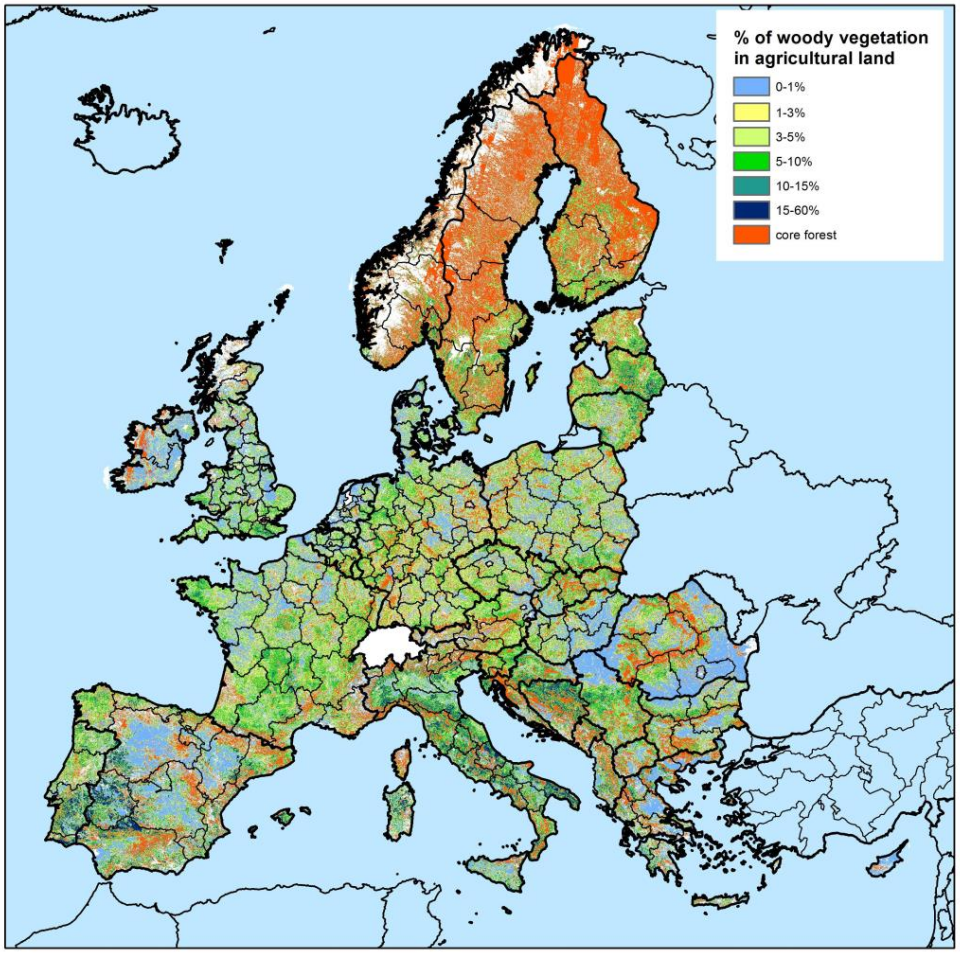


Figure 11: Change in the extent of forest and other wooded land, 1990-2015

Woody vegetation

- Figure 12 shows the percentage of woody vegetation in agricultural land. The map was produced from the Copernicus Forest High resolution layer, which has a spatial resolution of 25m (the service element produced specifically for the JRC).
- A morphological analysis was carried out to distinguish 1) *patches of interspersed woody vegetation* (tree lines and small tree patches) into the agricultural matrix; 2) *forest edges*, which have a high ecological value when adjacent or close to agricultural areas, and 3) *forest cores* (in red in the map, as they are mostly not in agricultural land by definition).
- The map only shows the abundance of woody semi natural elements large enough to be detected by satellites; hence, it does not show all the semi natural vegetation occurring in agricultural land, which comprises also isolated trees, small woodlots, herbaceous strips and grassy patches, due to their small size.
- The percentage of woody vegetation (edges + interspersed) is calculated as the % of cropland covered by woody vegetation.
- The map allows identifying spatial patterns in Europe, for instance agricultural areas with low or very low presence of woody vegetation like arable lands in the Danubian Plain between Bulgaria and Romania, the cereal district in Castilla y Leon (Spain), the large grasslands/meadows and pastures in Ireland and the arable land in the Hungarian Plain.
- There are areas that, despite being intensive and highly productive agricultural region, have a higher share of woody vegetation, such as the Po Plain in Northern Italy, Central France or Brittany, West Germany and to some extent also eastern England.
- More complex agricultural landscape show of course higher value, as it is the case of Agroforestry systems in Extremadura (Western Spain), Sardinia and Portugal, or the complex cultivation patterns of Galicia (NW Spain), Tuscany or Langhe/Monferrato (Central Piedmont, NW Italy).

Figure 12: Percentage of woody vegetation on agricultural land



Spatial unit: EU river basins. Reference year 2005. The analysis is based on modelling.
Source: JRC

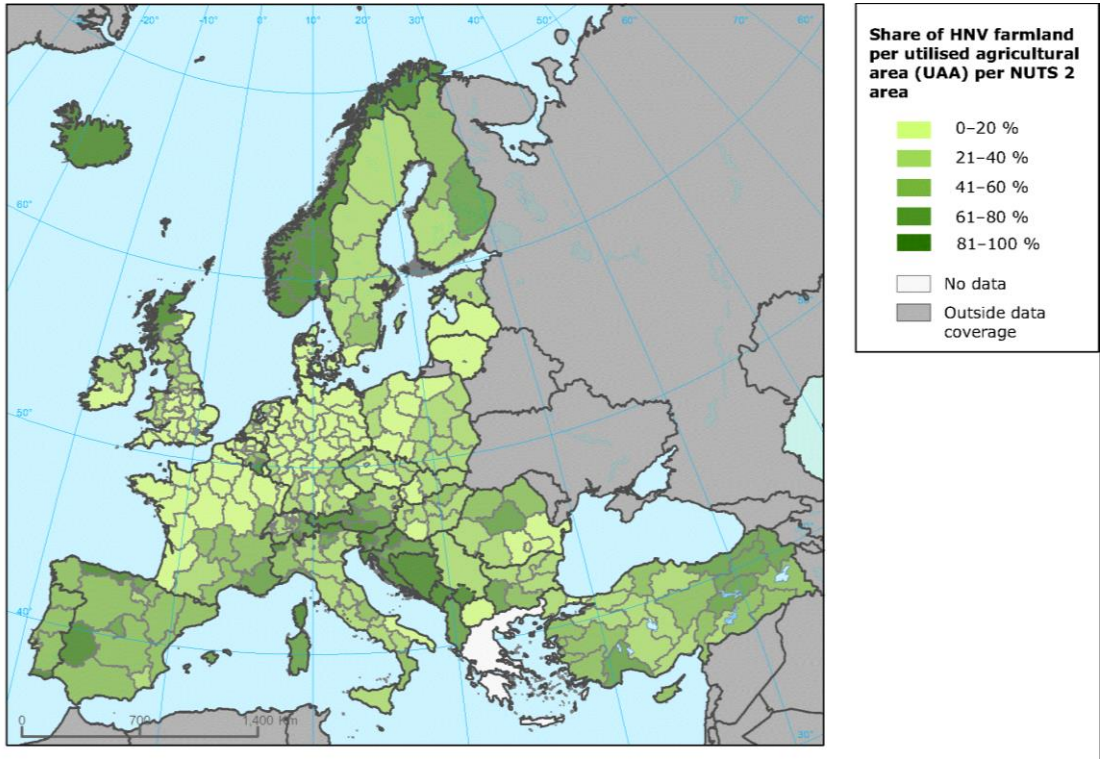
6. High Nature Value Farmland

- The map shows the estimated distribution and presence likelihood of HNV farmland per NUTS 2 region, calculated as a share of the UAA.

- The enhanced update of HNV farmland in Europe was carried out in 2012 according to the JRC/EEA methodology described in Paracchini, M. L.; Petersen, J.-E.; Hoogeveen, Y.; Bamps, C.; Burfield, I. and van Swaay, C., 2008. *High Nature Value Farmland in Europe. An estimate of the distribution patterns on the basis of land cover and biodiversity data*, JRC report EUR 23480 EN. The main focus of the 2012 exercise was to update the HNV farmland dataset based on the Corine Land Cover data 2006 and to include countries previously not part of the European HNV farmland assessment.

- The map shows that hotspots of HNV farmland are located in Mediterranean, mountainous and marginal areas, while the Atlantic and Continental zones are mostly suffering from a low HNV presence.

Figure 13: Share of HNV farmland in total UAA by NUTS 2 area, 2012



See also: https://www.eea.europa.eu/data-and-maps/data/high-nature-value-farmland

For a state of play on assessing high nature value farming in the EU, see Common Context Indicator 37: High Nature Value farming