ISSN 2363-2488

eurostat
Statistical books

Agriculture, forestry and fishery statistics

2014 edition

eurostat

eurostat
Statistical books

Agriculture, forestry and fishery statistics

2014 edition

eurostat

Europe Direct is a service to help you find answers to your questions about the European Union.

Freephone number (*):

00 800 6 7 8 9 10 11

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

More information on the European Union is available on the Internet (http://europa.eu).

Luxembourg: Publications Office of the European Union, 2015

ISBN 978-92-79-43201-9
ISSN 2363-2488
doi: 10.2785/59171
N° Cat: KS-FK-14-001-EN-N

Theme: Agriculture and fisheries
Collection: Statistical books

Printed in Belgium

PRINTED ON ELEMENTAL CHLORINE-FREE BLEACHED PAPER (ECF)

Foreword

Agriculture accounts for roughly 40 % of the EU budget. It is the only policy almost entirely funded from the EU budget, where European spending is largely complementary to national spending. The new Common Agricultural Policy (CAP) 2014–20 demonstrates the central role of statistics and the need for a solid knowledge base against which the policy can be monitored.

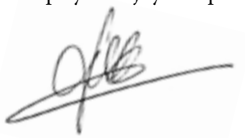
Agriculture covers 47 % of the EU territory and has a strong environmental impact. Agriculture uses soil, water and air, and it affects these resources and biodiversity, through land management practices, input use, cropping and livestock patterns. Without a thorough knowledge of what is produced where, by whom and how, it is not possible to target agricultural and related policy interventions to where they are most needed.

Our annual publication provides you with a selection of important and interesting EU indicators. Drawing from the huge amount of data available at Eurostat, our aim is to give an insight into European agriculture, forestry and fisheries; for example, which countries are the largest producers of cereals, tomatoes, apples, meat or milk, how many tonnes of fish were caught, what is the extent of aquaculture in the EU, and how have prices changed over recent years.

The *Agriculture, forestry and fishery statistics* statistical book maintains its emphasis on the most recent data available, but also provides an analysis of changes in farm holdings over a period of five or ten years. This edition also presents a contribution to the International Year of Family Farming with a special chapter on family farming in the EU.

You can find the content of this publication in a richer online format in Statistics Explained and the latest versions of the data can be downloaded from the Eurostat website.

I hope you enjoy this publication.



Marcel Jortay
Director, Sectoral and Regional Statistics

Abstract

The *Agriculture, forestry and fishery statistics* statistical book provides a selection of topical data. Information is presented for the European Union (EU) and its Member States, and is supplemented (when available) with data for EFTA members and for the acceding and candidate countries to the EU. This publication aims to cover some of the most popular data within the domain of agriculture, forestry and fishery statistics. It may be viewed as an introduction to European statistics in this area and provides a starting point for those who wish to explore the wide range of data that is freely available on Eurostat's website at: http://ec.europa.eu/eurostat.

Eurostat is the statistical office of the EU, situated in Luxembourg. Its task is to provide the EU with statistics at a European level that enable comparisons between countries and regions. Eurostat's mission is to be the leading provider of high quality statistics on Europe.

Acknowledgements

The editors would like to thank the many colleagues who were involved in its preparation, in particular, Johanna Pleijte and Johan Selenius (Special focus — Family farming in the EU; The evolution of farm holdings), Marco Artico, Ruben Garcia Nuevo, Annabelle Jansen and Garry Mahon (Agricultural accounts and prices), Jean-Claude Jeanty, Marjo Kasanko, Werner Kerschenbauer and Ute Walsemann (Crop production and orchards), Giovanni Dore, Pol Marquer and Teresa Rabade (Livestock and meat; Milk and milk products), Miroslav Kukučka and Johan Selenius (Agriculture and environment), Rajmund Laczko and Marilise Wolf-Crowther (Forestry), Anne Foltete, Andreas Lazar, Friderike Oehler and Vincent Tronet (Fisheries).

Editors

Roberta Forti and Michel Henrard

Contact details

Eurostat

Bâtiment Joseph Bech
5, rue Alphonse Weicker
L-2721 Luxembourg
LUXEMBOURG

E-mail: estat-user-support@ec.europa.eu

Production

This publication was produced by William Helminger, Alain Mahieu and Bruno Scuvée — CRI (Luxembourg) S.A.

For more information please consult

Eurostat website: http://ec.europa.eu/eurostat

Data extraction period

The statistical data presented in this publication were extracted during November 2014. The accompanying text was drafted in November and December 2014.

Table of contents

Introduction

This publication on *Agriculture, forestry and fishery statistics* presents a selection of tables and figures on a wide range of industry-related topics, covering the 28 EU Member States. The most recent data are presented where possible, the latest reference year (for some data sets) being 2013.

The official statistics in this publication are aimed at both specialists (including policymakers at EU and Member State level, enterprises, farms, producers' and consumers' associations, consultancy bodies, trade unions *et al.*) and generalists who have an interest in the subject. Statistics provide tools to help inform, monitor and measure progress towards agreed goals. As such, they are a key component of governance — for identifying needs, formulating objectives and orientating policies and goals — through evidence-based decision-making. For the European Commission, statistics are also required to support dialogue with the EU Member States and other partners.

The Common Agricultural Policy (CAP) is the agricultural policy of the EU. Its main objectives are to ensure a decent standard of living for farmers, to provide a stable and safe food supply chain at affordable prices for consumers, and to ensure the development of rural areas throughout the EU; a June 2013 reform of the CAP focused on the sustainable management of resources. Each of these objectives has been borne in mind when selecting the statistics shown in this publication.

There is no common forestry policy for the EU; rather, the Member States have their own national forestry policies. Nevertheless, an EU Forest Action Plan was adopted in 2006. Of the four objectives laid out, statistics are most readily available to help examine the need to improve the long-term competitiveness of the EU's forest sector.

The Common Fisheries Policy (CFP) is the fisheries policy of the EU. It sets catch limits, restricts the size of the fishing fleet that sets to sea, and lays down technical measures such as those relating to fishing gear. In addition, the CFP aims to help producers get a fair price for their produce and ensure that consumers can trust the seafood that they eat. A January 2014 reform of the CFP focused on environmental, economic and social sustainability. Statistics related to fishing production, aquaculture, catches, landings and the fishing fleet are presented in this publication.

The relative weight of agriculture, forestry and fisheries in the EU-28 economy has been in almost perpetual decline over the last 50 years. From 2000 to 2013 the share of agriculture, forestry and fisheries in the EU-28's total economic activity (as measured by gross value added) fell from 2.1 % to 1.7 %.

This edition of *Agriculture, forestry and fishery statistics* is divided into seven parts.

2014 has been declared the International Year of Family Farming by the United Nations' Food and Agriculture Organisation (FAO). The fact that the vast majority of farms in the EU (97 %) are classified as family farms turned 2014 into a particularly important year for agriculture in the EU.

Chapters 1 and 2 on family farming and the evolution of farm holdings provide readers with an overview of the structures of EU farms, their specificities among Member States and their development over time.

Chapters 3 to 5 present the EU's agricultural industry with information on the latest reference period and developments over time. These chapters move beyond a structural presentation of the EU's agricultural industry, providing information on agri-environmental issues, reflecting recent reforms of the CAP:

- Chapter 3 covers economic developments within the agricultural industry and presents data on output and input values, income indicators, as well as price trends;
- Chapter 4 presents the most recent data on some of the most important EU agricultural products, first for crops (cereals, sugar beet, oilseeds, vegetables, fruit, wine grapes and olives), then for orchards (apple trees, other fruits trees, main fruit varieties, olive trees and vines producing table grapes), for livestock and meat and finally for milk and milk products;
- Chapter 5 provides a small selection of indicators related to the interaction between agriculture and the environment. This year's edition focuses on the utilisation of nutrients in agricultural production and its impact on the environment;

The remaining two chapters go beyond agriculture to look at the state of the EU's forestry and fishery industries:

- Chapter 6 provides an overview of the most recent forestry data;
- Chapter 7 offers a summary of the state of the EU's fishing fleet, aquaculture, fishery catches and landings of fishery products.

This publication reflects only a relatively small proportion of the statistics that are collected on the agricultural, forestry and fishery industries. More detailed data as well as methodological information both for these topics and a much broader range of economic, social and environmental themes can be found on the Eurostat website at: http://ec.europa.eu/eurostat.

The Eurostat website offers free access to Eurostat's databases, predefined tables, methodological documents and publications.

1 Special focus: Family farming in the EU

The United Nations' Food and Agriculture Organisation (FAO) declared 2014 to be the International year of family farming. The FAO defines a family farm as '[...] an agricultural holding which is managed and operated by a household and where farm labour is largely supplied by that household'. Family farms are by far the most common farming model in the EU — encompassing a wide range of agricultural holdings (hereafter referred to as farms): from small, semi-subsistence farms with only family workers and farms which have to rely on other gainful activities for a diversified source of income, through to much larger, more productive farms (which maintain family management).

1.1 Structural profile of farms according to the extent of the family labour force — an analysis for the EU-28

Family farms accounted for almost 97 % of the farms in the EU …

Family farms dominate the structure of EU agriculture in terms of their numbers, their contribution to agricultural employment and, to a lesser degree, the area of land that they cultivate.

Table 1.1: Analysis of key indicators according to the extent of the family labour force, EU-28, 2010

	Total	Farms with only family workers	Farms where family workers make up 50 % or more (but not 100 %) of the regular labour force	Farms where family workers make up less than 50 % (but not 0 %) of the regular labour force	Farms with no family labour force
(thousands)					
Number of holdings	12 248	11 611	256	79	301
Utilised agricultural area (hectares)	175 815	99 419	19 056	9 618	47 722
Livestock (livestock units)	135 212	74 884	21 226	9 605	29 496
Regular labour force (annual work units)	9 183	7 377	540	317	949
(% of total)					
Number of holdings	100.0	94.8	2.1	0.6	2.5
Utilised agricultural area (hectares)	100.0	56.5	10.8	5.5	27.1
Livestock (livestock units)	100.0	55.4	15.7	7.1	21.8
Regular labour force (annual work units)	100.0	80.3	5.9	3.4	10.3

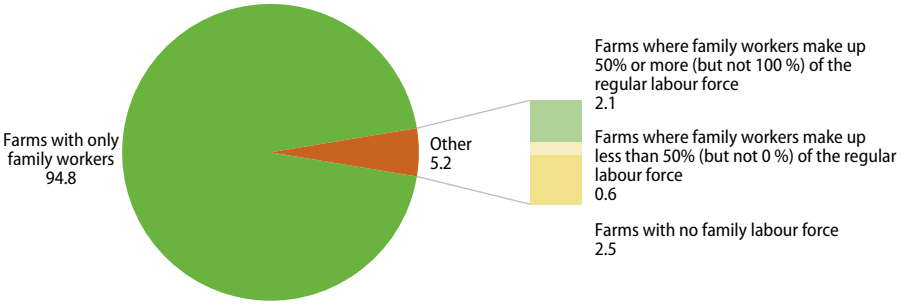
Source: Eurostat (Farm Structure Survey, 2010)

There were 12.2 million farms in the EU-28 in 2010, with the vast majority of these (96.9 %) classified as family farms. Based on the FAO definition, the term 'family farm' is hereafter used to refer to any farm under family management where 50 % or more of the regular agricultural labour force was provided by family workers; this aggregate can be broken down into those farms where labour was provided exclusively by the family (farms with only family workers) and those where 50 % or more (but not 100 %) of the labour force were family workers.

… while their share of the cultivated agricultural land was 67 %

Across all of the farms in the EU-28, family farms provided 86.2 % of the regular agricultural labour force and reared 71.1 % of all livestock in 2010. Their relative share of the total utilised agricultural area was lower, as they accounted for 67.4 % of the EU-28's farmed area (see Table 1.1). This may be attributed to many family farms being small holdings that operate on a semi-subsistence basis (producing essentially for their own consumption).

Figure 1.1: Share of total number of holdings according to the extent of the family labour force, EU-28, 2010
(% of farm holdings)

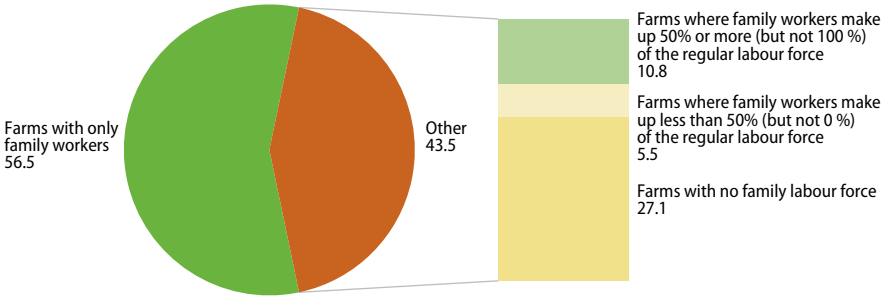


Source: Eurostat (Farm Structure Survey, 2010)

Family farms with only family workers (in other words, those where 100 % of the labour input on the farm was provided by family members) accounted for 94.8 % of the total number of farms in the EU-28 in 2010 (see Figures 1.1 and 1.2). Farms with only family workers provided four fifths (80.3 %) of the total regular agricultural labour force, they cultivated more than half (56.5 %) of the total agricultural area and reared more than half (55.4 %) of all livestock.

In 2010, there were 79 thousand farms in the EU-28 where family workers made up less than 50 % (but not 0 %) of the regular labour force and 301 thousand farms with no family labour force at all. Together, these non-family farms' accounted for 3.1 % of the total number of farms in the EU-28 and they cultivated almost one third (32.6 %) of the utilised agricultural area.

Figure 1.2: Share of utilised agricultural area according to the extent of the family labour force, EU-28, 2010
(% of utilised agricultural area)



Source: Eurostat (Farm Structure Survey, 2010)

Farms with no family labour were more prevalent than farms where family workers made up less than 50 % (but not 0 %) of the regular labour force. Farms with no family labour accounted for 2.5 % of all EU-28 farms, cultivated more than one quarter (27.1 %) of the utilised agricultural area, reared more than one fifth (21.8 %) of all livestock, and employed just over 1 in 10 (10.3 %) of the regular agricultural labour force in 2010. By contrast, EU-28 farms where family workers made up less than 50 % (but not 0 %) of the regular labour force accounted for 0.6 % of all farms, some 3.4 % of the regular agricultural labour force, 5.5 % of the cultivated land, and 7.1 % of the reared livestock.

Farms with no family labour force cultivated, on average, an area that was just over 18 times as large as the area cultivated by farms with only family workers

Figure 1.3 shows that family farms were, on average, consistently smaller than non-family farms; this was particularly true for farms with only family workers. Across the whole of the EU-28 in 2010, each farm with only family workers had, on average, 8.6 hectares (ha) of agricultural land. At 74.3 hectares per farm, the land cultivated by farms where family workers made up 50 % or more (but not 100 %) of the regular labour force was nine times as high as the average for farms with only family workers. Among non-family farms, the average agricultural area of each farm reached 121.2 hectares per holding for those farms where family workers made up less than 50 % (but not 0 %) of the regular labour force, and peaked at 158.3 hectares per holding for farms with no family labour; this latter figure was just over 18 times as high as the average for farms with only family workers.

Figure 1.3: Average size of holdings according to the extent of the family labour force, EU-28, 2010 ([1])

([1]) Note that different scales are used on the y-axis for each part of the figure.
Source: Eurostat (Farm Structure Survey, 2010)

Farms in the EU-28 with only family workers had an average of 6.4 livestock units (LSUs) per holding in 2010. There was a wide disparity in the average number of animals reared by type of farm, as farms where family workers made up 50 % or more (but not 100 %) of the regular labour force had, on average, almost 13 times as many animals as farms with only family workers. Farms with no family labour force in the EU-28 reared, on average, almost 100 livestock units in 2010, while farms where family workers made up less than 50 % (but not 0 %) of the regular labour force reared, on average, 121 livestock units. As such, the average number of livestock reared in farms where family workers made up less than 50 % (but not 0 %) of the regular labour force was almost 20 times as high as on farms with only family workers.

EU-28 farms with only family workers had, on average, a regular labour force of 0.6 annual work units (AWUs) per holding in 2010; in other words, the total work performed on these farms over the course of a year was equivalent to 60 % of the work performed by a single person working full-time. Among farms where family workers made up 50 % or more (but not 100 %) of the regular labour force, the average size of the labour force was about three times as high (at 2.1 annual work units), while for farms with no family labour it was five times as high (3.1 annual work units), rising to just over six times as high (4.0 annual work units) for farms where family workers made up less than 50 % (but not 0 %) of the regular labour force.

While the average farm with no family labour force cultivated an agricultural area that was, on average 18.5 times as large as the agricultural area cultivated by farms with only family workers, the average labour force on farms with no family labour was merely 5.0 times as high as the labour force on farms with only family workers.

1.2 Structural profile of farms according to the extent of the family labour force — an analysis for the individual EU Member States

Almost 60 % of family farms in the EU-28 were located in Romania, Italy or Poland

Of the 11.9 million family farms in the EU-28 in 2010, almost one third (32.3 %) were located in Romania, while Italy (13.4 %) and Poland (12.6 %) were the only other EU Member States to record double-digit shares of the EU-28 total (see Table 1.2).

Table 1.2: Analysis of the number of holdings and utilised agricultural area according to the extent of the family labour force, 2010

	Number of holdings (thousands)					Utilised agricultural area (thousand hectares)				
	Total	Farms with only family workers	Farms where family workers make up 50 % or more (but not 100 %) of the regular labour force	Farms where family workers make up less than 50 % (but not 0 %) of the regular labour force	Farms with no family labour force	Total	Farms with only family workers	Farms where family workers make up 50 % or more (but not 100 %) of the regular labour force	Farms where family workers make up less than 50 % (but not 0 %) of the regular labour force	Farms with no family labour force
EU-28	12 248.0	11 610.9	256.4	79.4	301.4	175 815.2	99 419.4	19 055.7	9 618.0	47 722.0
Belgium	42.9	37.3	1.1	0.2	4.3	1 358.0	1 136.5	54.9	4.7	161.9
Bulgaria	370.5	361.4	2.5	1.3	5.4	4 475.5	1 064.2	213.8	486.5	2 711.1
Czech Republic	22.9	18.2	1.0	0.5	3.1	3 483.5	585.6	197.0	230.1	2 470.8
Denmark	42.1	33.1	5.3	1.5	2.2	2 646.9	1 268.7	791.6	365.9	220.7
Germany	299.1	251.0	33.4	9.7	5.1	16 704.0	8 829.7	3 114.3	1 804.8	2 955.2
Estonia	19.6	17.4	0.3	0.1	1.7	940.9	353.0	63.2	33.9	490.9
Ireland	139.9	127.2	11.7	0.6	0.3	4 991.4	3 938.1	578.0	34.6	440.7
Greece	723.1	706.0	13.4	3.0	0.7	5 177.5	3 213.5	221.0	31.0	1 712.0
Spain	989.8	867.5	41.7	15.1	65.4	23 752.7	14 102.7	1 458.2	864.1	7 327.6
France	516.1	342.8	47.1	12.5	113.7	27 837.3	10 427.6	5 095.3	1 912.6	10 401.8
Croatia	233.3	230.7	0.3	0.0	2.2	1 316.0	1 082.0	16.8	1.9	215.3
Italy	1 620.9	1 564.5	25.6	13.6	17.2	12 856.1	10 150.1	848.7	497.7	1 359.6
Cyprus	38.9	37.6	0.6	0.2	0.5	118.4	89.6	10.9	4.8	13.1
Latvia	83.4	79.0	3.1	1.2	0.2	1 796.3	1 120.3	248.8	408.2	19.0
Lithuania	199.9	196.7	1.7	0.9	0.7	2 742.6	1 859.9	246.5	266.1	370.1
Luxembourg	2.2	1.9	0.2	0.1	0.1	131.1	95.4	24.1	10.9	0.7
Hungary	576.8	564.8	2.1	0.8	9.2	4 686.3	2 097.2	220.3	102.9	2 266.0
Malta	12.5	12.1	0.3	0.1	0.1	11.5	10.4	0.7	0.2	0.2
Netherlands	72.3	57.8	8.9	1.4	4.2	1 872.4	1 410.2	330.3	29.1	102.7
Austria	150.2	138.0	5.8	2.3	4.1	2 878.2	2 328.0	154.7	73.8	321.7
Poland	1 506.6	1 489.4	9.3	2.9	5.1	14 447.3	12 018.6	441.0	415.7	1 572.1
Portugal	305.3	288.9	5.3	3.2	7.9	3 668.2	1 820.0	314.8	352.1	1 181.2
Romania	3 859.0	3 827.9	0.2	0.2	30.7	13 306.1	7 448.1	0.4	1.2	5 856.5
Slovenia	74.7	74.2	0.2	0.0	0.2	482.7	451.7	3.0	1.3	26.6
Slovakia	24.5	21.3	0.7	0.2	2.3	1 895.5	251.8	55.4	59.2	1 529.1
Finland	63.9	56.4	5.4	0.9	1.3	2 291.0	1 862.0	317.1	62.2	49.8
Sweden	71.1	61.3	3.8	0.7	5.2	3 066.3	1 924.1	419.2	91.6	631.5
United Kingdom	186.8	146.6	25.4	6.1	8.6	16 881.7	8 480.7	3 615.6	1 471.1	3 314.3
Iceland	2.6	1.8	0.3	0.0	0.5	1 595.7	1 109.5	196.3	33.0	257.0
Norway	46.6	35.7	10.0	0.5	0.5	1 005.9	683.7	294.5	16.5	11.2
Switzerland	59.1	42.3	9.2	1.1	6.4	1 047.8	675.2	210.7	41.6	120.3
Montenegro	48.9	48.7	0.1	0.0	0.1	221.3	211.4	1.2	0.1	8.6

Source: Eurostat (Farm Structure Survey, 2010)

Family farms in the EU-28 cultivated some 118 million hectares of utilised agricultural area in 2010. The largest areas under cultivation by family farms were located in France and Spain (almost 16 million hectares each) with 13.1 % of the EU-28 total each, while Poland, the United Kingdom and Germany also recorded double-digit shares of the EU-28 total.

Each family farm in Malta cultivated an average of just 0.9 hectares of utilised agricultural area in 2010. Family farms were also relatively small — on the basis of this comparison — in Romania, Cyprus, Bulgaria, Hungary, Croatia, Greece, Slovenia, Italy, Portugal and Poland, as each holding cultivated an average area of less than 10 hectares. At the other end of the spectrum, the largest family farms were in the United Kingdom (an average of 70.3 hectares per holding), while the average family farm in Luxembourg, Denmark, the Czech Republic and Germany cultivated in excess of 40 hectares.

One third of the non-family farms in the EU were located in France

Of the 381 thousand non-family farms in the EU-28, one third (33.2 %) were located in France and just over one fifth (21.2 %) in Spain; none of the remaining Member States accounted for more than the 8.1 % share of the EU-28 total recorded by Italy.

Non-family farms in the EU-28 cultivated 57 million hectares of utilised agricultural area in 2010 (compared with 118 million hectares for family farms). Just over one fifth (21.5 %) of the agricultural area in the EU-28 that was cultivated by non-family farms was located in France, while the next highest shares were recorded for Spain (14.3 %), Romania (10.2 %), Germany and the United Kingdom (both 8.3 %).

The smallest non-family farms were found in Malta (an average of 2.5 hectares of utilised agricultural area per farm), while non-family farms in the Netherlands, Cyprus, Belgium, Finland, Italy, Austria, Croatia and France were also relatively small. Indeed, non-family farms in each of these nine Member States cultivated, on average, less than 100 hectares of land in 2010. By contrast, the average size of non-family farms peaked in the Czech Republic, at 744 hectares per holding, while the utilised agricultural area cultivated by non-family farms was at least 400 hectares per holding in Slovakia, Ireland, Greece, Bulgaria and Lithuania. The predominance of very large non-family farms in some eastern Member States may be linked to corporate farms (often production cooperatives) being preserved during and after the major structural agricultural reforms that took place in the 1990s. In Greece, some very large non-family farms are characterised by large areas of common land used for rough grazing.

Figures 1.4–1.7 show the relative importance of family and non-family farms in 2010 (data for family farms are presented in a green shade). Family farms accounted for at least 99 % of all farms in Slovenia, Greece, Poland, Ireland,

Lithuania, Romania and Croatia and for upwards of 90 % in all but three of the remaining Member States, the exceptions being Belgium (89.7 %), the Czech Republic (84.2 %) and France (75.5 %).

In five EU Member States, non-family farms cultivated more than half of the total agricultural area

In 2010, family farms cultivated two thirds (67.4 %) of the EU-28's total utilised agricultural area. Their share of the utilised agricultural area peaked in Malta, at 97.0 %, while shares of more than 90 % were also recorded in Finland, Slovenia, the Netherlands, Luxembourg and Ireland. By contrast, non-family farms cultivated the majority of the utilised agricultural area in Hungary, Estonia, Bulgaria, the Czech Republic and Slovakia.

Figure 1.6 shows the distribution of livestock across different types of farm in 2010: family farms reared a majority of the livestock in 23 of the 28 EU Member States. The proportion of livestock reared by family farms rose above 90 % in Slovenia, Greece, Luxembourg, Ireland and Austria, peaking in Austria at 97.1 %. By contrast, there were five Member States where less than half of all livestock was reared in family farms. Four of these countries — Hungary, Estonia, the Czech Republic and Slovakia — also reported that family farms accounted for less than half of the total agricultural area that was farmed; they were joined by Cyprus.

The regular labour force of the EU-28's agricultural sector equated to 25.5 million persons in 2010. Adjusted for their working time over the course of the year, the total labour input of the EU-28's agricultural sector was much lower, at 9.2 million annual work units; these two figures give some idea as to the magnitude of the part-time and seasonal nature of the labour force within the agricultural sector.

Family farms provided, on average, 86.2 % of the EU-28's regular agricultural labour force in 2010 (see Figure 1.7). The share of family farms in the regular labour force was over 95% in Ireland, Greece, Poland, Slovenia and Romania, while in the vast majority of the remaining EU Member States it was at least 70 %.

In the Czech Republic and Slovakia, non-family farms provided more than 70 % of the regular agricultural labour force

By contrast, there were four exceptions: in France and Estonia the share of the regular agricultural labour force provided by family farms was approximately 55 % of the total, while the Czech Republic and Slovakia were the only EU Member States where non-family farms accounted for a majority of the regular agricultural labour force (76.1 % and 70.3 % of the total respectively).

Figure 1.4: Distribution of the number of holdings according to the extent of the family labour force, 2010
(% of farm holdings)

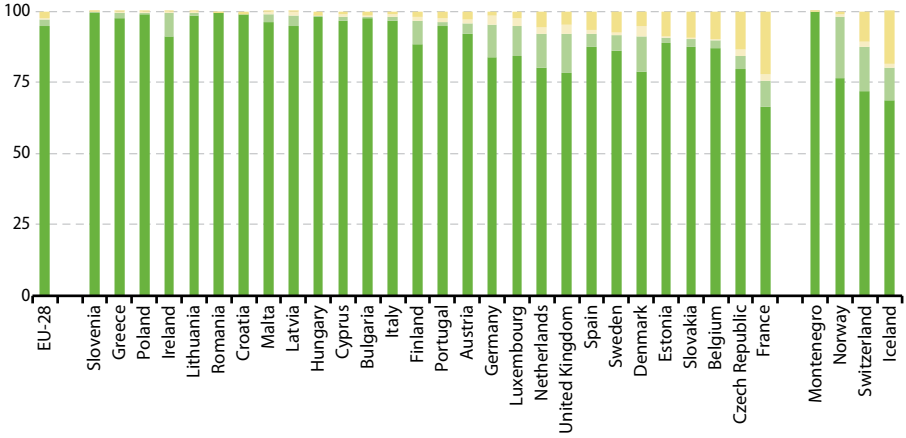
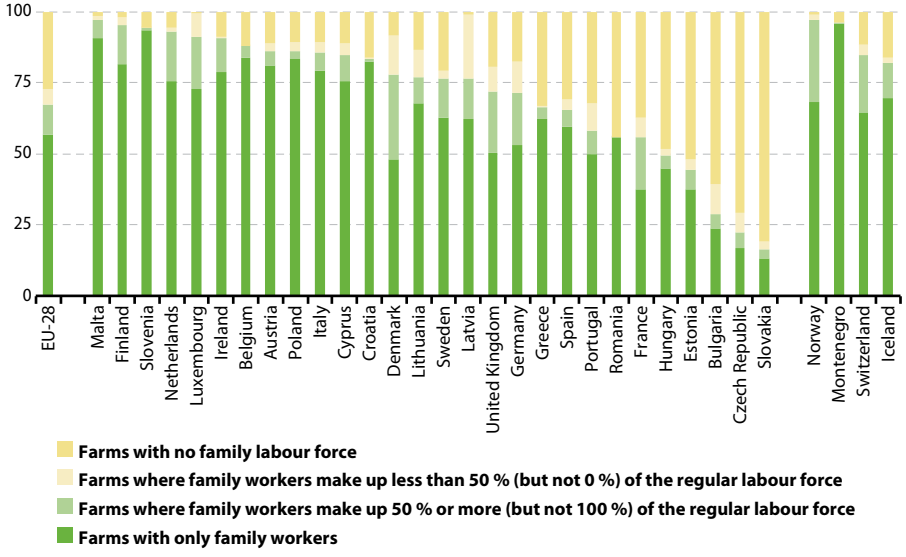


Figure 1.5: Distribution of the utilised agricultural area according to the extent of the family labour force, 2010
(% of utilised agricultural area)



Source: Eurostat (Farm Structure Survey, 2010)

Figure 1.6: Distribution of farm livestock according to the extent of the family labour force, 2010 (1)
(% of all livestock)

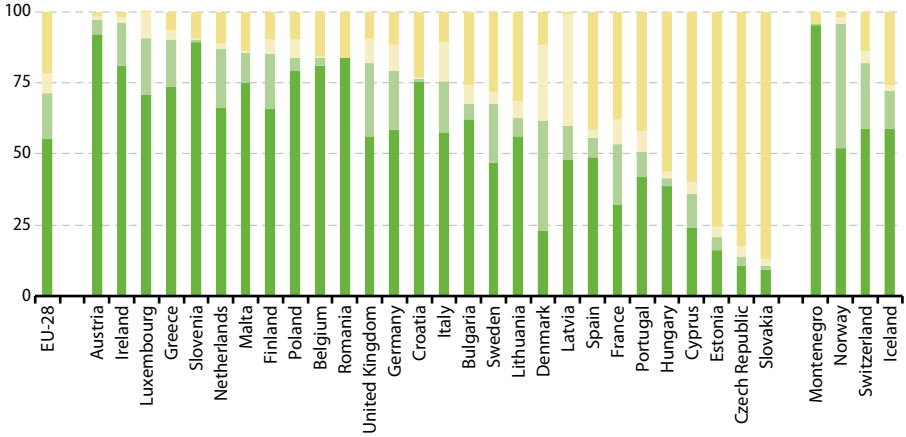
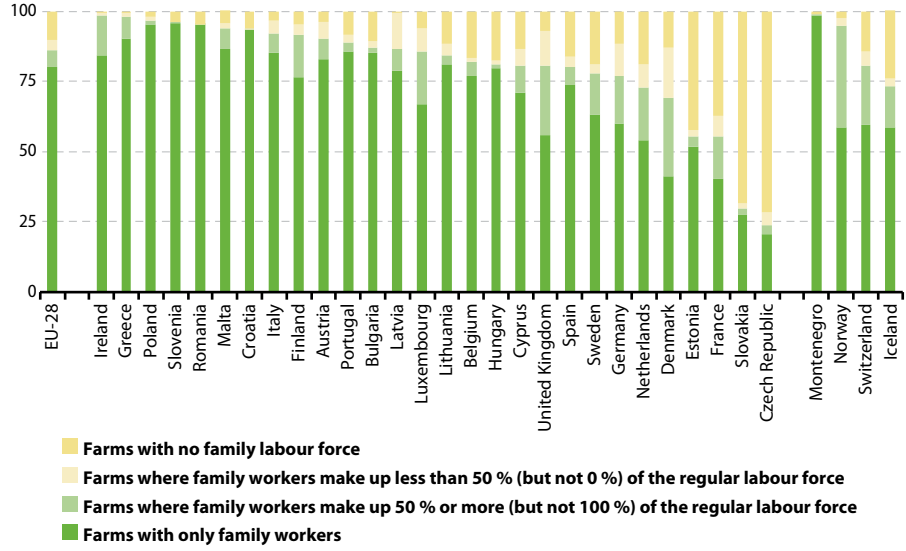
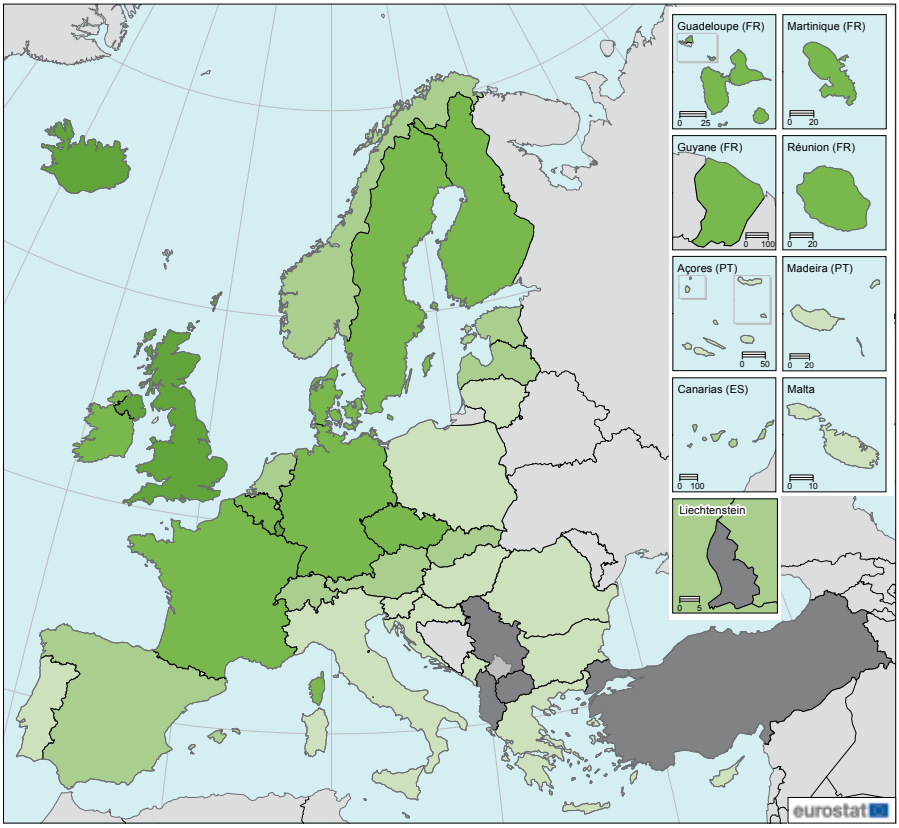


Figure 1.7: Distribution of the regular labour force according to the extent of the family labour force, 2010 (2)
(% of regular farm labour force)



(1) Based on livestock units.
(2) Based on annual work units.
Source: Eurostat (Farm Structure Survey, 2010)

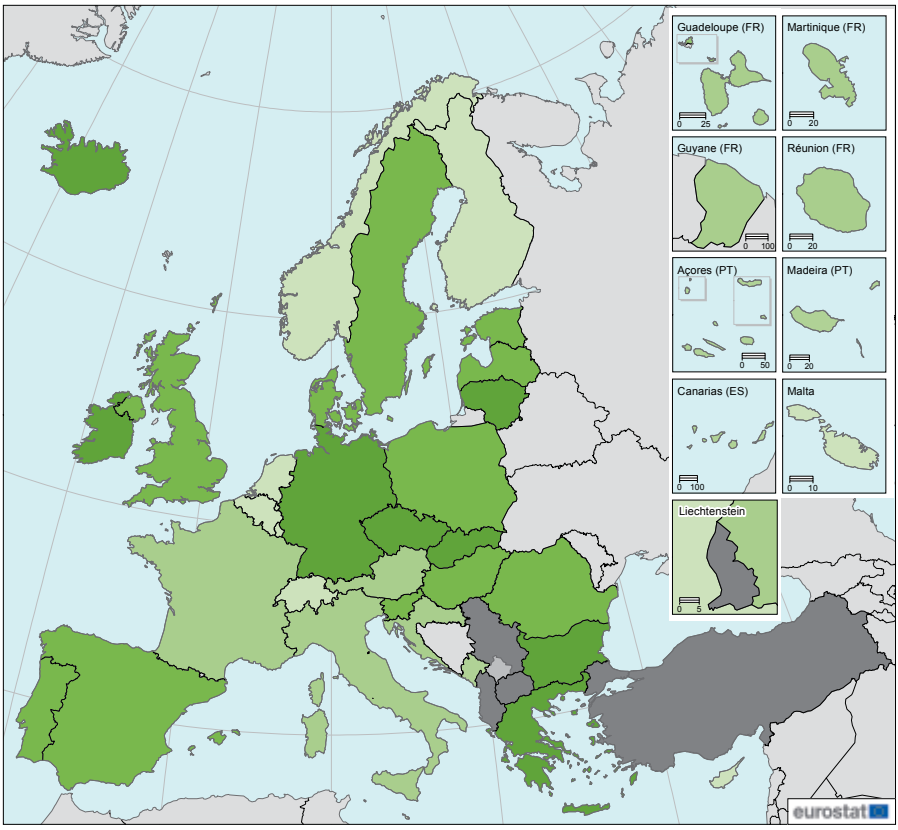
Map 1.1: Average utilised agricultural area per holding for farms with only family workers, 2010
(hectares)



Source: Eurostat (Farm Structure Survey, 2010)

Map 1.1 focuses exclusively on farms with only family workers; it presents the average agricultural area per holding for 2010. The smallest farms with only family workers were located in Malta, Romania, Cyprus and Bulgaria. By contrast, the largest farms with only family workers were located in the United Kingdom and Luxembourg.

Map 1.2: Average utilised agricultural area per holding for farms with no family labour force, 2010
(hectares)



Source: Eurostat (Farm Structure Survey, 2010)

Map 1.2 presents the same information for farms without any family labour force. Greece recorded the largest agricultural area among the EU Member States, with an average of almost 2 600 hectares for each farm without any family labour force in 2010, while the next highest area was recorded in Ireland (1 335 hectares per holding).

Luxembourg was the only EU Member State where farms with only family workers were, on average, larger than farms with no family labour force

In some of the EU Member States there were considerable differences between the average sizes (in terms of utilised agricultural area) of farms with only family workers and farms without any family labour force. For example, in 2010 in Bulgaria, farms without any family labour force were, on average, just over 170 times as large as farms with only family workers, while in the Romania the average size of farms without any family labour force was 100 times as large. By contrast, there was almost no difference in the average size of these two types of farm in Belgium, Finland and the Netherlands, while Luxembourg was the only EU Member State to report that farms with only family workers (51.6 hectares per holding) were, on average, larger than farms without any family labour force (14.4 hectares per holding).

1.3 Farm managers by age — an analysis for the EU-28

Almost 30 % of farm managers in the EU-28 were aged 65 years or more

There were 12.2 million farm managers in the EU-28 agricultural sector in 2010. Table 1.3 shows that some 3.6 million farm managers in the EU-28 were aged 65 or above, which equated to approximately 3 out of every 10 (29.7 %).

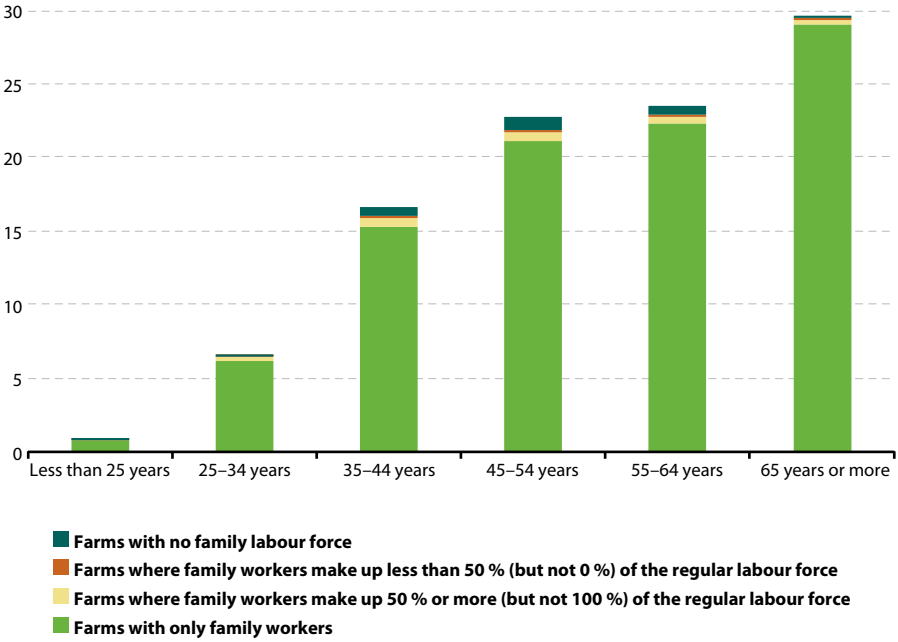
Table 1.3: Analysis of the number of managers according to their age and the extent of the family labour force, EU-28, 2010
(1 000)

	Total	Farms with only family workers	Farms where family workers make up 50 % or more (but not 100 %) of the regular labour force	Farms where family workers make up less than 50 % (but not 0%) of the regular labour force	Farms with no family labour force
Total (all ages)	12 248.2	11 611.0	256.5	79.4	301.4
Less than 25 years	97.0	91.5	2.5	0.7	2.4
25–34 years	816.0	760.5	23.3	6.6	25.7
35–44 years	2 031.5	1 877.2	60.8	16.9	76.6
45–54 years	2 789.2	2 579.5	79.5	22.4	107.8
55–64 years	2 882.8	2 738.5	58.0	17.7	68.7
65 years or more	3 631.6	3 563.8	32.5	15.1	20.2

Source: Eurostat (Farm Structure Survey, 2010)

Figure 1.8 presents an analysis of the age profile of farm managers in the EU-28 according to their age and type of farm. It shows that the most common age band for farm managers was that covering managers aged 65 or more, and that an absolute majority (53.2 %) of farm managers in the EU-28 were aged 55 or above, in other words close to or beyond the regular retirement age.

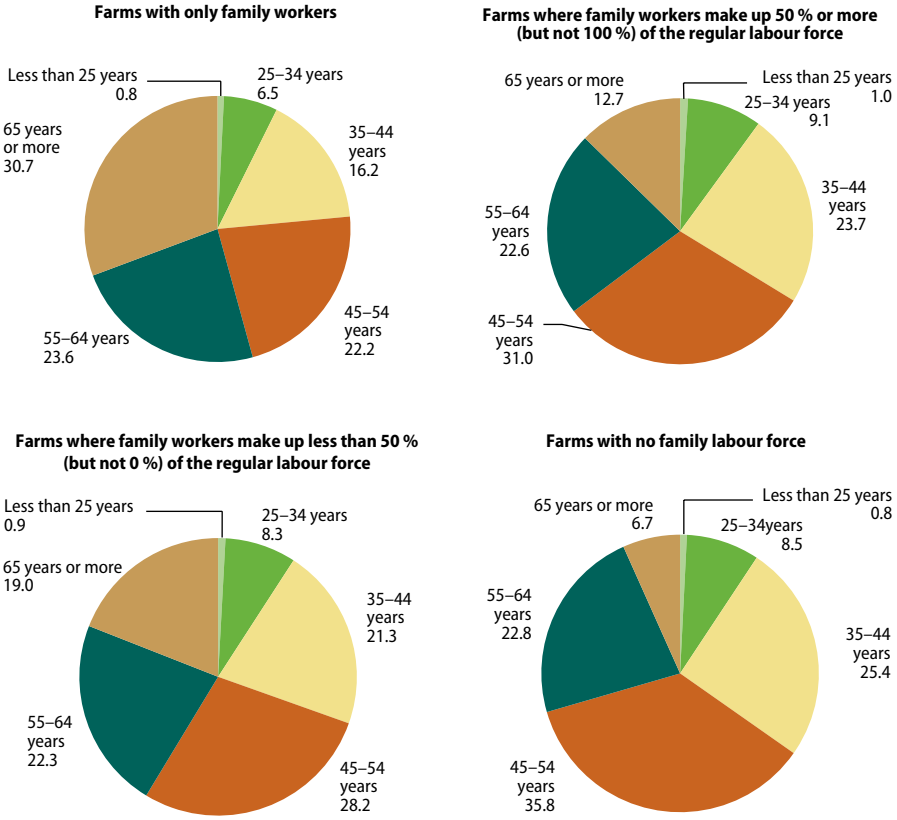
Figure 1.8: Share of the total number of managers according to their age and the extent of the family labour force, EU-28, 2010
(% of total number of managers of all ages)



Source: Eurostat (Farm Structure Survey, 2010)

There were relatively few young farm managers in the EU-28 in 2010. Managers younger than 25 years accounted for 0.8 % of the total number of farm managers across all types of farm, while those younger than 35 years represented 7.5 % of all managers.

Figure 1.9: Share of the total number of managers according to their age and the extent of the family labour force, EU-28, 2010
(% of total number of managers for the specified extent of the family labour force)



Source: Eurostat (Farm Structure Survey, 2010)

Figure 1.9 shows the proportion of EU-28 farm managers, by age, for four different types of farm in 2010. The most striking aspect is the high proportion of farms with only family workers who were managed by persons aged 65 or more (30.7 %) or by persons aged 55–64 (23.6 %). This could be contrasted with the results for farms without any family labour force, where across the EU-28 those aged 65 or more accounted for merely 6.7 % of all farm managers. These figures suggest that farm managers working for corporations and cooperatives were much more likely to have retired by the age of 65.

1.4 Farm managers by age — an analysis for the individual EU Member States

As noted above, in 2010 some 7.5 % of farm managers in the EU-28 were young farmers (defined here as those younger than 35 years). Poland had the highest proportion of young farm managers (14.7 % of all Polish farm managers) in 2010, while the Czech Republic and Austria were the only other EU Member States to report that more than 10 % of their farm managers were younger than 35 (see Table 1.4).

By contrast, in Portugal almost half (46.5 %) of all farm managers were aged 65 or above, while in Romania, Bulgaria, Italy, Lithuania and Greece at least one third of all farm managers were aged 65 or above. These figures suggest that older farm managers (working beyond 65) were principally located in the southern EU Member States and in several of the Member States that joined the EU in 2004 or more recently — although there were some exceptions among those Member States that joined the EU in 2004 or more recently, most notably Poland, the Czech Republic and Slovakia (where a relatively low proportion of farm managers was aged 65 or above).

In Portugal, almost half of the managers in farms with only family workers were aged 65 and over, while in Germany the same share was 5.4 %

Figures 1.10–1.13 provide an analysis for 2010 of the distribution of farm managers, by age, and for four different types of farm. Among those farms with only family workers (see Figure 1.10) there were considerable differences in the age of farm managers between EU Member States. For example, in Portugal, almost half (47.6 %) of all managers in farms with only family workers were aged 65 or above. This could be contrasted with the situation in Germany, where just 5.4 % of managers in farms with only family workers were aged 65 or above. These examples are synonymous with more general patterns, namely, that older managers were more likely to continue working beyond the common retirement age in countries where relatively small family farms predominated (Portugal, Romania, Bulgaria, Italy, Lithuania, Greece, Cyprus and Spain). By contrast, the likelihood that managers in farms with only family workers would retire close to the common retirement age was much higher in a group of EU Member States ranging from France, Luxembourg and Germany in the west, through Austria to Poland and the Czech Republic in the east, as well as in Finland.

Table 1.4: Analysis of the number of managers according to their age and the extent of the family labour force, 2010
(1 000)

	All managers on farms	Managers on family farms				Managers on non-family farms			
		Of all ages	Less than 35 years	35–64 years	65 years or more	Of all ages	Less than 35 years	35–64 years	65 years or more
EU-28	12 248.2	11 611.0	852.0	7 195.2	3 563.8	301.4	28.1	253.2	20.2
Belgium	42.9	37.3	1.7	27.7	7.9	4.3	0.3	3.4	0.5
Bulgaria	370.5	361.4	24.4	199.6	137.4	5.4	0.5	4.4	0.4
Czech Republic	22.9	18.2	2.3	13.3	2.6	3.1	0.2	2.7	0.2
Denmark	42.1	33.1	1.4	24.4	7.3	2.2	0.1	2.1	0.0
Germany	299.2	251.0	18.0	219.5	13.5	5.1	0.3	4.6	0.3
Estonia	19.6	17.5	1.0	11.1	5.4	1.8	0.3	1.3	0.1
Ireland	139.9	127.2	8.5	86.3	32.5	0.3	0.0	0.3	0.0
Greece	723.1	706.0	48.0	420.1	238.0	0.7	0.1	0.4	0.1
Spain	989.8	867.5	43.7	547.6	276.2	65.4	5.3	54.0	6.1
France	516.1	342.8	25.6	261.1	56.0	113.7	10.1	99.6	4.0
Croatia	233.3	230.7	9.3	147.9	73.6	2.2	0.3	1.9	0.1
Italy	1 620.9	1 564.5	76.3	896.9	591.2	17.2	1.8	12.9	2.5
Cyprus	38.9	37.6	0.9	24.1	12.6	0.5	0.0	0.4	0.1
Latvia	83.4	79.0	4.2	50.8	24.0	0.2	0.0	0.1	0.0
Lithuania	199.9	196.7	11.3	116.3	69.1	0.7	0.1	0.6	0.1
Luxembourg	2.2	1.9	0.1	1.4	0.3	0.0	0.0	0.0	0.0
Hungary	576.8	564.8	39.5	357.1	168.2	9.2	1.0	7.5	0.7
Malta	12.5	12.1	0.6	8.3	3.2	0.0	0.0	0.0	0.0
Netherlands	72.3	57.8	1.8	44.0	12.0	4.2	0.2	3.6	0.4
Austria	150.2	138.0	14.8	111.9	11.3	4.1	0.3	3.5	0.4
Poland	1 506.6	1 489.4	218.7	1 145.6	125.1	5.1	0.5	4.2	0.4
Portugal	305.3	288.9	6.6	144.8	137.6	7.9	0.9	5.8	1.2
Romania	3 859.1	3 827.9	276.5	2 089.0	1 462.5	30.7	4.0	25.5	1.2
Slovenia	74.6	74.2	3.2	48.3	22.6	0.2	0.0	0.2	0.0
Slovakia	24.5	21.3	1.4	14.6	5.3	2.3	0.2	1.9	0.1
Finland	63.9	56.4	4.6	46.5	5.3	1.3	0.1	1.1	0.1
Sweden	71.1	61.3	2.8	41.7	16.9	5.2	0.3	4.2	0.7
United Kingdom	186.8	146.6	4.9	95.5	46.3	8.6	1.0	7.0	0.6
Iceland	2.6	1.8	0.1	1.4	0.3	0.5	0.1	0.4	0.0
Norway	46.6	35.7	3.3	28.7	3.8	0.5	0.0	0.4	0.0
Switzerland	59.1	42.3	3.2	37.0	2.1	6.4	0.5	4.9	1.0
Montenegro	48.9	48.7	2.7	29.8	16.2	0.0	0.0	0.0	0.0

Source: Eurostat (Farm Structure Survey, 2010)

Figure 1.11 shows that for farms where family workers made up 50 % or more (but not 100 %) of the regular labour force, a smaller proportion of managers tended to work beyond the age of 65. The highest proportion was recorded in Portugal, where just over one third (34.2 %) of all managers working on farms where family workers made up 50 % or more (but not 100 %) of the regular labour force were aged 65 or more. This was considerably higher than in the other EU Member States, as the next highest share was recorded in Ireland (23.2 %), followed by Slovenia, Malta, Cyprus, the United Kingdom and Latvia (all 20–21 %). At the other end of the spectrum, in Luxembourg there were no managers aged 65 or more working on farms where family workers made up 50 % or more (but not 100 %) of the regular labour force.

There was a much higher likelihood that farm managers working on non-family farms were aged 65 or more in the southern EU Member States

The situation in non-family farms is presented in Figures 1.12 and 1.13. The highest proportion of elderly farm managers (those aged 65 and over) in non-family farms was recorded in the southern EU Member States of Portugal (57.3 %), Greece (52.7 %) and Italy (49.2 %), and to a somewhat lesser degree in Malta (37.5 %), Spain (35.2 %) and Cyprus (33.9 %), as well as Ireland (34.7 %).

It is interesting to contrast the situation in Romania between farms with only family workers and non-family farms. For the former, Romania recorded the second highest proportion (38.2 %) of managers aged 65 or above, whereas the propensity for Romanian farmers working in non-family farms to take retirement around the common retirement age was considerably higher than the EU-28 average, as just 3.9 % of the managers in non-family farms were aged 65 or above.

Figure 1.10: Distribution of managers in farms with only family workers, by age of manager, 2010
(% of total number of managers working in farms with only family workers)

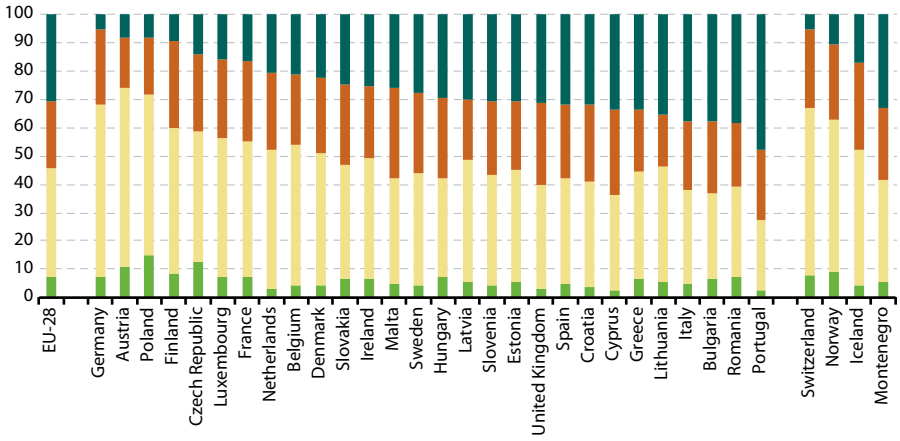
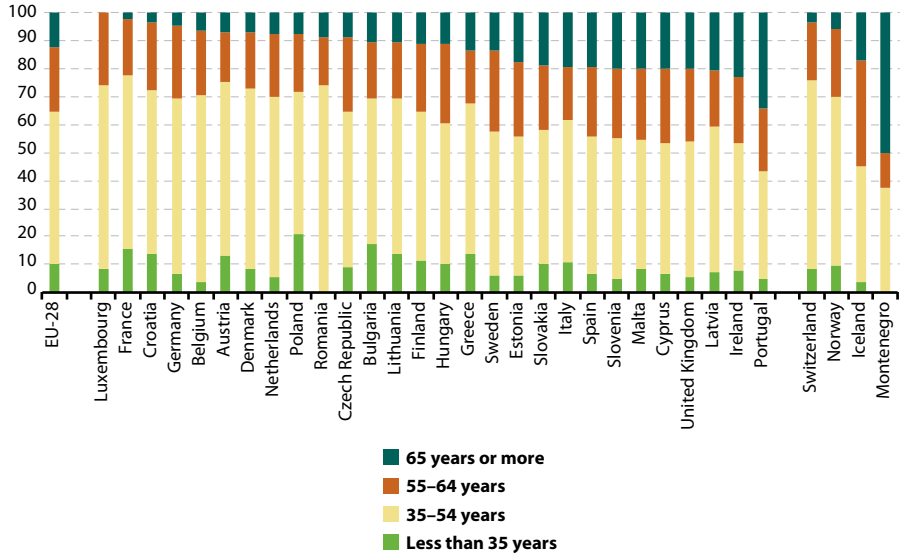


Figure 1.11: Distribution of managers in farms where family workers make up 50 % or more (but not 100 %) of the regular labour force, by age of manager, 2010
(% of total number of managers working in farms where family workers make up 50 % or more (but not 100 %) of the regular labour force)



Source: Eurostat (Farm Structure Survey, 2010)

Figure 1.12: Distribution of managers in farms where family workers make up less than 50 % (but not 0 %) of the regular labour force, by age of manager, 2010
(% of total number of managers working in farms where family workers make up less than 50 % (but not 0 %) of the regular labour force)

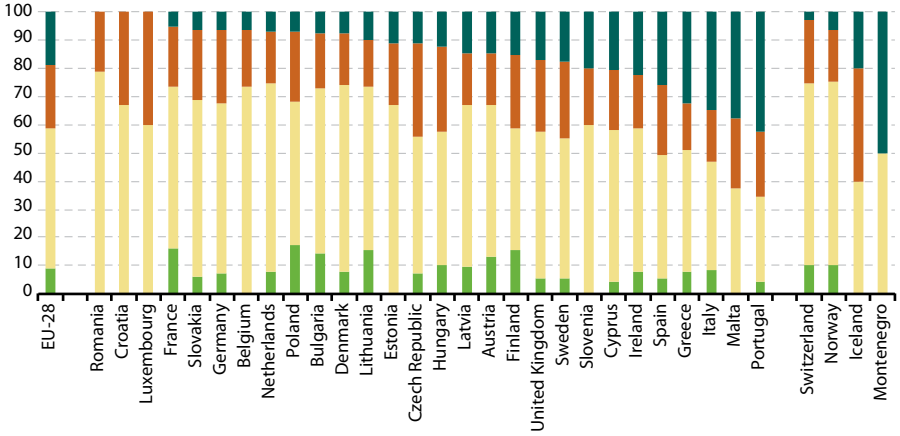
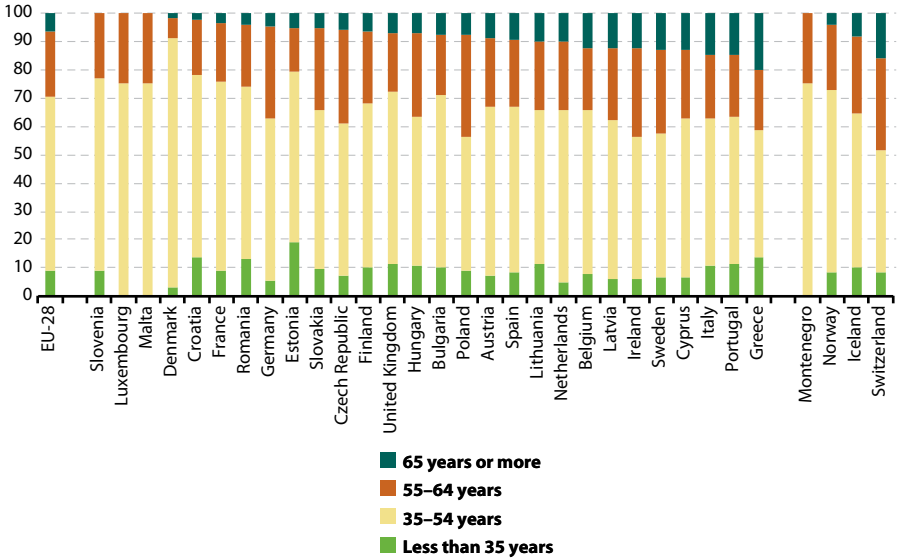


Figure 1.13: Distribution of managers in farms with no family labour force, by age of manager, 2010
(% of total number of managers working in farms with no family workers)



Source: Eurostat (Farm Structure Survey, 2010)

DATA SOURCES AND AVAILABILITY

Within the EU, a farm structure survey (FSS) is carried out every three or four years as a sample survey, and once every 10 years as a census. The legal basis for the FSS is Regulation 1166/2008 of 19 November 2008, which defines the information to be collected from individual farms, observing strict rules of confidentiality, before comparable data are sent to Eurostat.

An agricultural census collects information about all farms and aims to present a detailed picture of the structure of agricultural activities, from an economic, social and environmental point of view. Topics covered in an agricultural census generally include:

- the size of farms in terms of utilised agricultural area and economic output;
- the farming system in use and its ownership;
- the type of agricultural products grown, their output, area and yield;
- the number and type of livestock;
- rural development, management;
- secondary activities and agro-environmental aspects;
- the agricultural labour force.

The results presented in this chapter cover the 2010 census, which was carried out in the EU Member States (note: only a sample survey was carried out in Croatia), as well as Iceland, Norway, Switzerland and Montenegro.

The basic unit underlying the FSS is the farm: a technical-economic unit, under single management, engaged in agricultural production. Although the thresholds for defining a farm can be different between countries, the survey covers 98 % of the utilised agricultural area and 98 % of the livestock of each country ([1]). In Regulation 1166/2008 it was decided to include common land as part of the utilised agricultural area. As such, the information collected through the census for 2010 includes common land within the agricultural area of each EU Member State. This change resulted in both the utilised agricultural area and the number of large farms without family labour increasing considerably in certain Member States (for example, Greece).

([1]) for more information see: Farm structure survey-thresholds (http://ec.europa.eu/eurostat/statistics-explained/index.php/Farm_structure_survey_-_thresholds)

Key indicators and concepts

Using data from the latest agricultural census, and applying the FAO definition for family farms at an operational level, it is possible to analyse farms on the basis of their labour input. Family farms may be defined as those:

- farms with exclusively family labour;
- farms that have predominately family labour (at least 50 % of the regular labour force).

By contrast, non-family farms are defined as:

- farms with predominately non-family labour (less than 50 % of the regular labour force);
- farms without any family labour.

Labour force data are provided in terms of numbers of persons and annual work units; due to the high share of seasonal and part-time work in agriculture, it is generally considered appropriate to assess labour input using data presented in annual work units. One annual work unit corresponds to the work performed by one person who is occupied on a farm on a full-time basis. Full-time means the minimum hours required by the national provisions governing contracts of employment. If these provisions do not explicitly indicate the number of hours, then 1 800 hours are taken to be the minimum (225 working days of eight hours each).

The livestock unit is a reference unit which facilitates the aggregation of livestock from various species and age via the use of specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal. The reference unit used for the calculation of livestock units (one unit) is the grazing equivalent of one adult dairy cow producing 3 000 kg of milk annually, without additional concentrated foodstuffs.

2 The evolution of farm holdings

The latest agricultural census in the European Union (EU) was conducted for the 2009 or 2010 reference years. This chapter presents results for a selection of indicators, comparing the situation in 2010 with earlier years, in particular, 2005 when a farm structure survey (FSS) was conducted. The chapter focuses on the change in the number and relative importance of agricultural holdings — referred to hereafter as farms — of various size categories; their size is determined either by a physical characteristic (the utilised agricultural area — UAA) or an economic measure (the standard output).

It should be noted that some methodological and legislative changes occurred between the 2005 and 2010 surveys: in the Czech Republic, Germany, Poland, Slovakia and the United Kingdom there was a reduction in the coverage of the survey that resulted from an increase in the minimum size threshold of farms. By contrast, in Italy, where thresholds are determined at a regional level, the overall impact of the change in thresholds was to increase the size of the surveyed population. These changes impact not just on the data for these EU Member States but also on the aggregated data for EU aggregates (such as EU-27 or EU-28). The impact of these changes is greatest on the data for those size classes which regroup smaller farms.

2.1 Analysis of farms according to farm size in terms of area

The first part of this chapter focuses on a size class analysis of farms based on their utilised agricultural area. It should be noted that this indicator does not include land occupied by buildings or farmyards and that some farms may not have any utilised agricultural area if they only rear livestock in animal housing (for example, poultry farms).

In 2010, there were 12.2 million farms in the EU-28: collectively their utilised agricultural area encompassed 176 million hectares (ha), or 1.76 million km². The land used by farms in the EU-28 accounted for approximately 40 % of the total land area.

The structure of farming in the EU was made up of two contrasting types of farm: on the one hand, the vast majority of farms cultivated a relatively small area, and on the other, there were a small number of farms that cultivated much larger areas.

Around four fifths (80.3 %) of all farms in the EU-28 had less than 10 hectares of utilised agricultural area, and together these smaller farms cultivated some 12.2 % of the utilised agricultural area. By contrast, only 5.9 % of the farms in the EU-28 cultivated 50 hectares or more of land for agricultural purposes, however, these larger farms collectively cultivated two thirds (66.6 %) of the total utilised agricultural area. Table 2.1 shows that between these two extremes, EU-28 farms with 10 or more hectares but less than 20 hectares of utilised agricultural area accounted for broadly similar shares of the number of farms (7.5 % of the total) and the utilised agricultural area (7.3 % of the total).

Table 2.1: Distribution of holdings and utilised agricultural area by size class (UAA), EU, 2005 and 2010

Size classes in hectares	Number of holdings			Utilised agricultural area		
	EU-27		EU-28	EU-27		EU-28
	2005	2010	2010	2005	2010	2010
	(thousands)			(thousand hectares)		
Total	14 482	12 015	12 248	171 996	174 499	175 815
	(% share within total) (1)			(% share within total) (1)		
0	2.0	2.2	2.1	0.0	0.0	0.0
> 0 to < 2	48.3	46.9	47.0	3.0	2.4	2.4
2 to < 5	21.2	20.1	20.2	5.6	4.4	4.4
5 to < 10	10.9	10.9	10.9	6.4	5.2	5.3
10 to <20	7.1	7.5	7.5	8.4	7.3	7.3
20 to < 30	2.8	3.1	3.1	5.8	5.3	5.3
30 to < 50	2.9	3.3	3.3	9.3	8.8	8.8
50 to < 100	2.8	3.3	3.2	16.4	15.9	15.9
100 or more	2.0	2.7	2.7	45.2	50.9	50.7

(1) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvaareg)

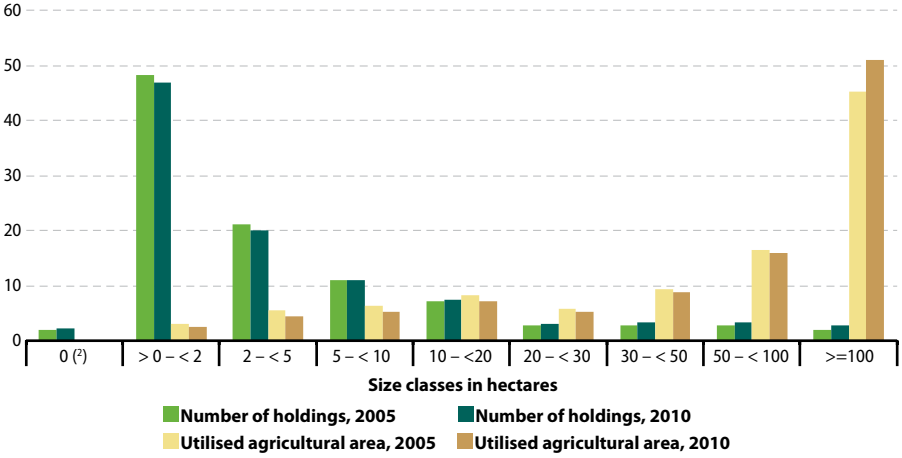
The average farm size in the EU-27 rose from 11.9 hectares to 14.5 hectares between 2005 and 2010; the largest farms grew most

An analysis of farms between 2005 and 2010 is available for the EU-27 (in other words for the EU-28 without Croatia), although it should be noted that the coverage of the surveys changed between 2005 and 2010 in several Member States (see Data sources and availability for more information). Between 2005 and 2010, the overall number of farms in the EU-27 fell by 17.0 % while their utilised agricultural area increased by 1.5 %. As a consequence the average size of each farm rose from 11.9 hectares in 2005 to 14.5 hectares in 2010. Among the largest farms, those with 100 hectares or more of utilised agricultural area, the average farm size grew from 265 hectares per farm in 2005 to 273 hectares per farm in 2010.

The share of agricultural area cultivated by smaller farms fell and that of larger farms grew

Figure 2.1 shows the distribution of farms and their utilised agricultural area by size class, comparing the EU-27 data for 2005 and 2010. Over this period, farms with 100 hectares or more of utilised agricultural area were the only size class to record an increase in their share of the total land area that was cultivated for agricultural purposes in the EU-27.

Figure 2.1: Distribution of holdings and utilised agricultural area by size class (UAA), EU-27, 2005 and 2010 ([1])
(% share of total)



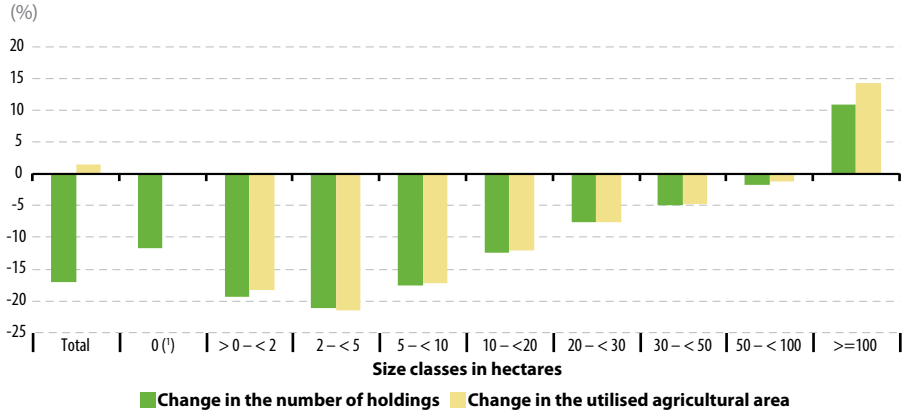
([1]) Shares may not sum to 100 % due to rounding.
([2]) By definition the size class of farms with 0 hectares of utilised agricultural area has no area.
Source: Eurostat (online data code: ef_kvaareg)

The share of the total number of farms in the EU-27 accounted for by farms with no utilised agricultural area increased slightly between 2005 and 2010. By contrast, the shares for the next two smallest size classes, covering farms with more than zero hectares but less than five hectares, both fell between 2005 and 2010. The share of the total number of farms accounted for by farms with five or more hectares but less than 10 hectares was unchanged in 2010 compared with 2005, while the share for each of the larger size classes increased.

The increase in the utilised agricultural area of farms with at least 100 hectares outweighed the decrease in the utilised agricultural area of all other farms

Figure 2.2 shows the percentage change in the number of agricultural holdings and their utilised agricultural area by size class between 2005 and 2010 in the EU-27; these changes reflect not just the developments in the shares between the different size classes but also the overall change in the number of farms and the total utilised agricultural area. As can clearly be seen, the only size class that recorded increases for its number of farms and utilised agricultural area was the class covering farms with 100 hectares or more. Given that the overall utilised agricultural area was higher in 2010 than in 2005, this confirms that the increase in the utilised agricultural area of farms with 100 hectares or more was larger than the combined decrease in the utilised agricultural area of farms in all other size classes. The largest decreases were generally recorded for the smallest size classes, but it should be noted that these are the classes most likely to be influenced by changes in survey thresholds.

Figure 2.2: Change in the number of holdings and utilised agricultural area by size class (UAA), EU-27, 2005–10



(1) By definition the size class of farms with 0 hectares of utilised agricultural area has no change in its area.
Source: Eurostat (online data code: ef_kvaareg)

Between 2000 and 2010 the largest farms (with 100 hectares or more) in the EU-15 increased in number and average size (area), while the overall number of farms fell

Looking over a longer period of time, namely between the agricultural census results for 2000 and 2010, developments can be analysed for the EU-15 (the group of 15 Member States before the successive enlargements of 2004, 2007 and 2013). Between 2000 and 2010 the total number of farms in the EU-15 fell by just over one fifth (– 22.8 %), while the total utilised agricultural area was relatively unchanged (– 0.5 %); as a result, the average size of farms increased, on average, by 5.4 hectares per farm to reach 24.1 hectares per farm.

The structural changes, in terms of the shares of each size class, were quite profound, particularly in terms of the utilised agricultural area. The share of the total number of farms in the EU-15 that had 100 hectares or more of utilised agricultural area increased by 2.1 %, whereas their share of the total utilised agricultural area increased by 36.1 %. The average size of these largest farms in the EU-15 increased from 233 hectares per farm in 2000 to 251 hectares per farm in 2010. Not only did their share in the total number of farms increase, but their number also increased in absolute terms: there were 26.2 % more farms with 100 hectares or more of utilised agricultural area in 2010 than in 2000 and their combined utilised agricultural area increased by 35.9 %.

Among the EU Member States the number of farms increased between 2005 and 2010 only in Ireland and Malta

A similar analysis for each of the EU Member States is presented in Tables 2.2 and 2.3. Overall, Ireland and Malta stand out as the only EU Member States where the number of farms and the utilised agricultural area was higher in 2010 than in 2005. A fall in the number of holdings and in the utilised agricultural area was reported by 14 of the Member States. The remaining 11 Member States (no comparison available for Croatia) reported a similar situation to that observed for the EU-27 as a whole, namely, an increase in utilised agricultural area but a decline in the overall number of farms. Among those Member States where the utilised agricultural area was lower in 2010 than in 2005, the largest decreases, in terms of hectares, were reported by Spain, Romania, Austria, Germany and Poland, whereas the largest percentage falls were recorded by Cyprus (– 21.8 %) and Austria (– 11.9 %).

Table 2.2: Distribution of holdings by size class (UAA), 2005 and 2010

	Total number of holdings (thousands)		Share of each size class within the total (%) (1)									
			0 hectares		0 to < 2 hectares		2 to < 10 hectares		10 to < 50 hectares		50 or more hectares	
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010
EU-28	:	12 248	:	2.1	:	47.0	:	31.1	:	13.9	:	5.9
EU-27	14 482	12 015	2.0	2.2	48.3	46.9	32.1	31.0	12.8	14.0	4.8	6.0
Belgium	52	43	1.8	2.2	12.8	10.0	25.0	22.5	43.9	44.3	16.5	21.1
Bulgaria	535	370	2.6	3.5	85.4	79.6	9.5	11.1	1.4	3.5	1.0	2.3
Czech Republic	42	23	2.5	1.3	33.5	8.7	28.1	23.8	20.7	36.4	15.2	29.9
Denmark	52	42	0.8	3.8	1.1	1.2	19.5	21.4	46.5	40.4	32.1	33.3
Germany	390	299	0.3	0.5	6.6	4.8	30.1	19.7	41.3	46.5	21.7	28.5
Estonia	28	20	0.2	0.8	17.3	11.3	47.8	42.4	26.5	31.2	8.2	14.3
Ireland	133	140	0.1	0.1	1.3	1.6	19.5	16.5	61.3	63.6	17.8	18.2
Greece	834	723	0.7	0.9	48.9	50.8	39.9	37.6	9.7	9.8	0.8	1.0
Spain	1 079	990	1.5	2.3	27.5	27.3	39.8	37.9	22.0	22.1	9.2	10.5
France	567	516	1.0	1.8	13.2	12.9	21.1	21.2	29.5	26.9	35.2	37.2
Croatia	:	233	:	0.1	:	52.5	:	36.7	:	9.3	:	1.3
Italy	1 729	1 621	0.2	0.3	49.3	50.6	36.0	33.6	12.3	12.8	2.2	2.8
Cyprus	45	39	0.7	1.3	68.6	73.9	24.9	19.7	5.0	4.3	0.8	0.9
Latvia	129	83	0.4	0.4	22.6	11.5	47.9	49.2	25.7	32.5	3.4	6.4
Lithuania	253	200	0.0	0.1	10.5	16.2	66.9	62.4	20.3	17.0	2.3	4.3
Luxembourg	2	2	0.0	0.9	10.6	9.1	18.8	17.3	24.9	24.1	45.3	49.1
Hungary	715	577	7.3	7.4	74.3	71.6	12.1	12.6	4.6	6.0	1.6	2.4
Malta	11	13	1.7	2.7	87.4	86.1	10.6	10.8	0.3	0.4	0.0	0.0
Netherlands	82	72	1.8	2.4	12.8	11.1	28.7	29.4	43.7	41.5	13.1	15.7
Austria	171	150	0.3	0.7	10.7	10.8	39.9	37.8	42.7	43.2	6.4	7.5
Poland	2 476	1 507	0.4	0.5	48.7	23.6	36.5	53.3	13.5	20.8	0.8	1.8
Portugal	324	305	0.4	0.5	48.5	49.9	37.4	36.1	10.6	10.1	3.2	3.4
Romania	4 256	3 859	3.2	3.5	63.9	70.8	30.6	23.6	1.9	1.6	0.3	0.5
Slovenia	77	75	0.0	0.3	23.2	27.2	61.7	56.7	14.6	15.2	0.4	0.6
Slovakia	68	24	3.1	3.0	78.7	35.7	11.1	36.6	3.4	12.5	3.8	12.2
Finland	71	64	0.5	0.6	2.4	2.3	18.7	19.3	59.6	54.9	18.8	23.0
Sweden	76	71	1.1	1.0	0.6	0.8	30.9	33.0	42.7	41.3	24.8	23.9
United Kingdom	287	187	13.4	2.2	12.1	2.4	21.6	18.7	27.0	38.0	26.0	38.7
Iceland	:	3	:	1.2	:	1.9	:	1.5	:	6.2	:	89.6
Norway	53	47	2.3	3.8	1.9	2.3	27.0	24.7	63.7	61.6	5.1	7.6
Switzerland	64	59	1.7	2.3	6.3	6.5	26.3	24.1	63.3	63.9	2.5	3.3
Montenegro	:	49	:	1.2	:	72.2	:	21.2	:	3.7	:	1.8

(1) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvaareg)

Table 2.3: Distribution of utilised agricultural area by size class (UAA), 2005 and 2010

	Total UAA (thousand hectares)		Share of each size class within the total (%) (1)									
			0 hectares		0 to < 2 hectares		2 to < 10 hectares		10 to < 50 hectares		50 or more hectares	
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010
EU-28	:	175 815	:	0.0	:	2.4	:	9.8	:	21.4	:	66.6
EU-27	171 996	174 499	0.0	0.0	3.0	2.4	12.1	9.6	23.5	21.3	61.6	66.9
Belgium	1 386	1 358	0.0	0.0	0.5	0.3	5.0	3.9	42.5	36.8	52.1	59.0
Bulgaria	2 729	4 476	0.0	0.0	8.8	3.2	6.7	3.6	5.3	6.2	79.1	86.9
Czech Republic	3 558	3 484	0.0	0.0	0.3	0.1	1.5	1.0	5.6	5.6	92.6	93.4
Denmark	2 708	2 647	0.0	0.0	0.0	0.0	2.6	2.3	21.7	15.4	75.7	82.2
Germany	17 035	16 704	0.0	0.0	0.1	0.1	3.6	2.3	23.6	20.8	72.7	76.8
Estonia	829	941	0.0	0.0	0.8	0.3	7.8	4.6	18.2	13.8	73.2	81.3
Ireland	4 219	4 991	0.0	0.0	0.0	0.1	4.0	2.9	50.4	46.1	45.6	50.9
Greece	3 984	5 178	0.0	0.0	8.8	6.0	36.3	22.8	39.0	26.7	15.9	44.6
Spain	24 855	23 753	0.0	0.0	1.3	1.3	8.1	7.3	21.0	20.8	69.6	70.6
France	27 591	27 837	0.0	0.0	0.3	0.2	2.2	1.9	16.5	13.4	81.1	84.5
Croatia	:	1 316	:	0.0	:	7.7	:	29.4	:	32.2	:	30.8
Italy	12 708	12 856	0.0	0.0	5.9	5.7	21.4	18.8	33.8	33.8	38.9	41.7
Cyprus	152	118	0.0	0.0	14.3	16.0	31.0	26.4	29.5	28.5	25.1	29.0
Latvia	1 702	1 796	0.0	0.0	1.5	0.5	18.9	12.5	36.8	29.5	42.9	57.4
Lithuania	2 792	2 743	0.0	0.0	1.3	1.7	28.4	19.8	33.5	25.0	36.8	53.5
Luxembourg	129	131	0.0	0.0	0.2	0.1	1.8	1.6	13.6	11.7	84.4	86.6
Hungary	4 267	4 686	0.0	0.0	4.3	2.9	8.7	7.0	15.9	15.8	71.0	74.3
Malta	10	11	0.0	0.0	54.3	52.1	41.2	42.2	3.8	5.4	0.0	0.0
Netherlands	1 958	1 872	0.0	0.0	0.5	0.5	6.3	5.9	48.3	42.8	44.8	50.8
Austria	3 266	2 878	0.0	0.0	0.7	0.7	10.8	10.2	49.1	51.1	39.4	38.1
Poland	14 755	14 447	0.0	0.0	5.9	3.3	29.6	27.1	41.0	40.1	23.5	29.5
Portugal	3 680	3 668	0.0	0.0	4.2	4.3	14.0	12.8	18.5	16.9	63.3	66.0
Romania	13 907	13 306	0.0	0.0	14.0	12.9	36.6	25.9	9.5	8.4	40.0	52.8
Slovenia	485	483	0.0	0.0	4.3	4.5	47.9	42.4	38.1	41.0	9.8	12.1
Slovakia	1 879	1 896	0.0	0.0	1.5	0.5	1.6	2.0	2.7	3.5	94.2	94.0
Finland	2 264	2 291	0.0	0.0	0.0	0.0	3.7	3.3	47.7	39.4	48.6	57.2
Sweden	3 192	3 066	0.0	0.0	0.0	0.0	4.2	4.6	24.4	22.5	71.4	72.8
United Kingdom	15 957	16 882	0.0	0.0	0.2	0.0	2.0	1.3	12.5	10.7	85.4	87.9
Iceland	:	1 596	:	0.0	:	0.0	:	0.0	:	0.3	:	99.7
Norway	1 035	1 006	0.0	0.0	0.1	0.1	8.7	7.2	72.2	65.9	19.0	26.8
Switzerland	1 062	1 048	0.0	0.0	0.4	0.4	9.8	8.4	79.9	78.6	9.9	12.6
Montenegro	:	221	:	0.0	:	10.4	:	19.0	:	16.1	:	54.5

(1) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvaareg)

The increase in the relative importance of larger farms (50 hectares or more) was almost universal among the EU Member States

Concerning changes in structure, nearly all of the EU Member States recorded an increase between 2005 and 2010 in the share of larger farms (those with 50 hectares or more of utilised agricultural area). Sweden was one exception as the share of these larger farms in the total number of farms fell slightly. Malta was another exception as there were no farms of this size, although the share of farms in the size class of 10 to less than 50 hectares (the largest size class in which there were farms in Malta) recorded an increase.

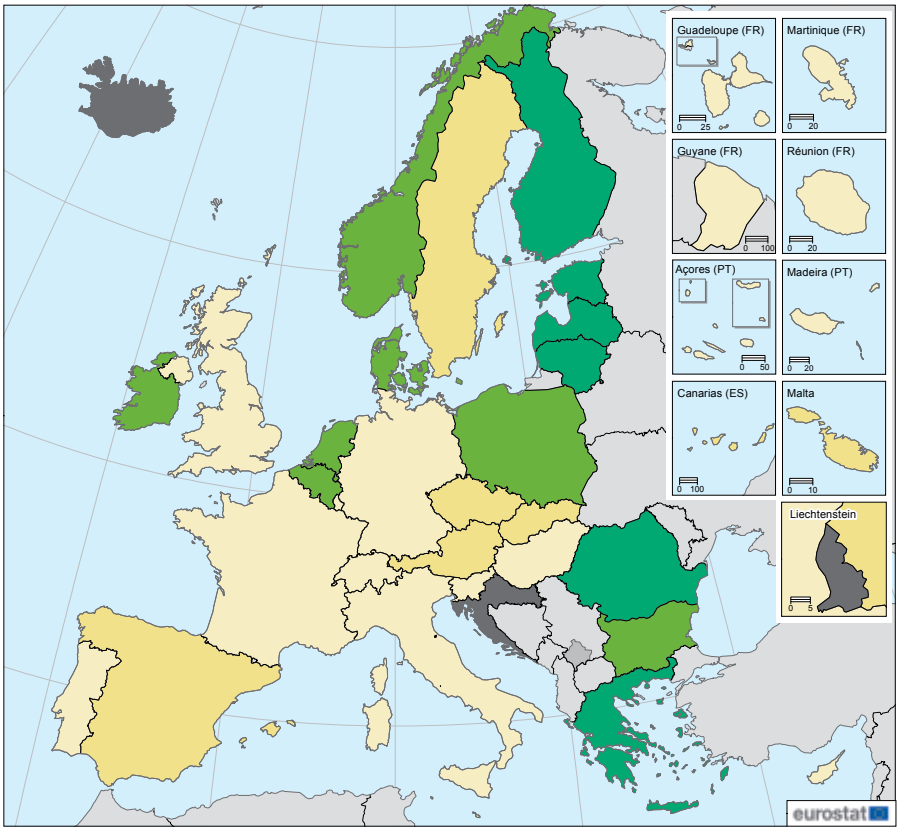
The share of utilised agricultural area cultivated by these larger farms (with 50 hectares or more of utilised agricultural area) also increased in nearly every EU Member State. Map 2.1 illustrates how the relative importance of these larger farms changed between 2005 and 2010. Overall, in the EU-27, the share of utilised agricultural area cultivated by larger farms increased by 5.3 percentage points between 2005 and 2010, to reach 66.9% of the total land that was cultivated. Those Member States where the share of larger farms increased by at least 8.0 percentage points between 2005 and 2010 included the Baltic Member States (Estonia, Latvia and Lithuania), Finland, Romania and Greece. By contrast, in Austria and Slovakia the larger farms' share of utilised agricultural area fell, while in Malta, the Czech Republic, Spain and Sweden, the increase in their share was less than 2.0 percentage points.

The average number of animals per farm increased in the EU-27 from 9.5 livestock units in 2005 to 11.2 livestock units in 2010

Across the whole of the EU-28 there were 135 million farm animals in terms of livestock units (LSUs) in 2010 (see Table 2.4), an average of 11.0 livestock units per farm. Nearly half (49.1 %) of these animals (measured in livestock units) were reared by larger farms with 50 hectares or more of utilised agricultural area, while smaller farms (with less than 10 hectares of utilised agricultural area) accounted for close to one quarter (24.0 %) of the total.

Data for the EU-27 show that the overall number of animals (in livestock units) decreased 2.2 % between 2005 and 2010. Because this fall was smaller than the equivalent fall in the number of farms, the average number of animals per farm increased from 9.5 livestock units in 2005 to 11.2 livestock units in 2010.

Map 2.1: Farms with 50 or more hectares utilised agricultural area: change in the share of the total utilised agricultural area, 2005–10
(%)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat

EU-27: share increased by 5.3 percentage points

- < 2
- 2 - < 5.3
- 5.3 - < 8
- >= 8
- Data not available

0 200 400 600 800 km

Source: Eurostat (online data code: ef_kvaareg)

Table 2.4: Distribution of livestock and the labour force by size class (UAA), EU, 2005 and 2010

Size classes in hectares	Livestock			Directly employed labour force		
	EU-27		EU-28	EU-27		EU-28
	2005	2010	2010	2005	2010	2010
	(thousand livestock units)			(thousand annual work units)		
Total	137 141	134 192	135 212	12 716	9 761	9 946
	(% share within total) (1)			(% share within total) (1)		
0	6.8	9.1	9.1	1.5	1.8	1.8
> 0 to < 2	5.6	4.6	4.7	27.3	23.8	23.9
2 to < 5	5.8	4.6	4.7	20.4	18.1	18.2
5 to < 10	6.3	5.5	5.5	13.9	13.6	13.7
10 to <20	9.9	8.7	8.7	11.0	11.7	11.6
20 to < 30	7.5	6.8	6.8	4.9	5.5	5.5
30 to < 50	12.6	11.7	11.7	5.5	6.3	6.2
50 to < 100	19.9	19.9	19.8	6.1	7.3	7.2
100 or more	25.7	29.4	29.3	9.5	12.0	11.9

(1) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvaareg)

The shares of livestock in the farms with zero hectares of utilised agricultural area increased substantially

The distribution of these animals across farms of different sizes changed between 2005 and 2010. Most notable were the increased shares for the very smallest and the very largest farms: the share of animals (in livestock units) reared on farms in the EU-27 with no utilised agricultural area increased by 2.3 percentage points to 9.1 % of the total, while the share of animals reared on farms with at least 100 hectares of utilised agricultural area increased by 3.7 percentage points to 29.4 % of the total. The share for the next largest size class (50 to less than 100 hectares) was unchanged, whereas the livestock share of all other size classes fell between 2005 and 2010.

Farms with less than 10 hectares of utilised agricultural area occupied more than half of the labour force

In 2010, the directly employed labour force in agriculture was 9.9 million annual work units. The directly employed labour force includes farm holders and working members of their family as well as workers employed directly by the farm, regardless of whether they work regularly or not. A work unit corresponds to the work performed by one person who is occupied on a farm on a full-time basis. It should be noted that many farmers and farm workers pursue agriculture as a part-time activity and agriculture is characterised by seasonal labour peaks, where large numbers of workers may be hired for a relatively short period of time. This can be seen from the average size of the labour force per farm, which was 0.81 annual work units in the EU-28 in 2010.

Whereas farms with at least 50 hectares cultivated two thirds of the overall utilised agricultural area and reared half of the livestock in the EU-28, they occupied just under one fifth (19.1 %) of the directly employed labour force. Smaller farms, with less than 10 hectares of utilised agricultural area, occupied more than half (57.6 %) of the labour force.

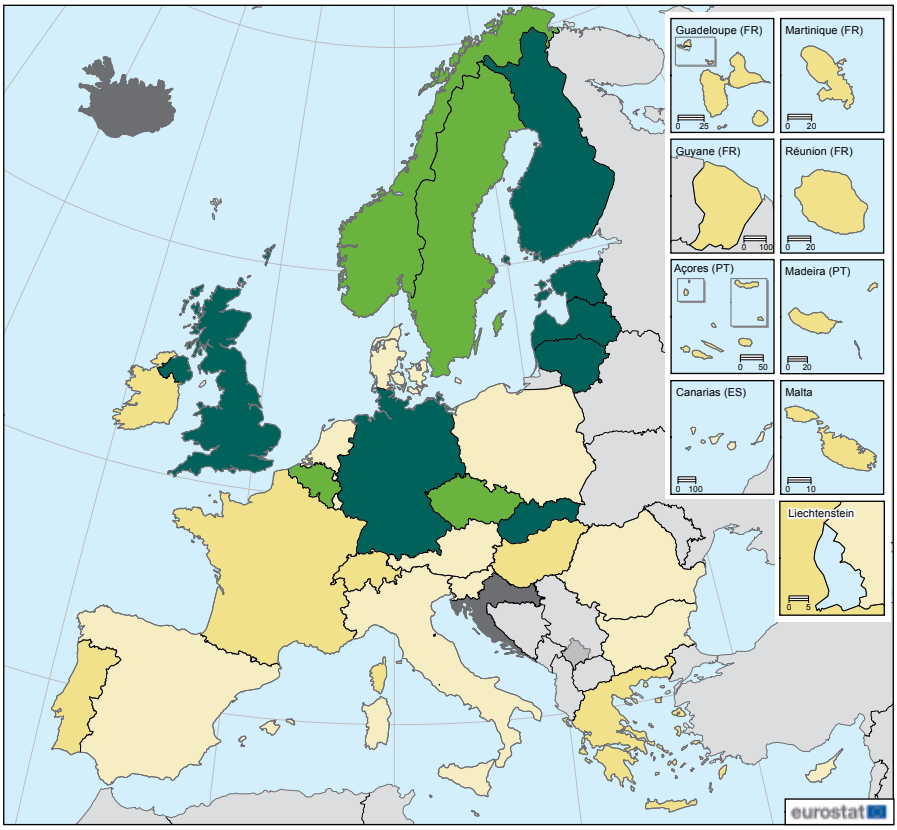
The share of the labour force fell in the size classes of farms with less than 10 hectares of utilised agricultural area while it increased in all other size classes

Between 2005 and 2010 the average size of EU-27 farms (in terms of their labour force) fell from 0.88 annual work units to 0.81 annual work units, with a 23.2 % contraction in labour input which fell from 12.7 million annual work units to 9.8 million annual work units. The share of the labour force in farms with no utilised agricultural area increased in the EU-27 by 0.3 percentage points to 1.8 % in 2010. Apart from this size class, there was a general pattern between 2005 and 2010 that the share of the labour force fell for those farms with less than 10 hectares of utilised agricultural area while it increased in all other size classes.

In percentage point terms, the largest reduction in labour input (– 3.4 percentage points) was registered for the smallest size class (farms with more than zero but less than two hectares). As the average size of farms got progressively larger, their share of the total labour force increased between 2005 and 2010. This was the case for farms with 10 to less than 20 hectares, and this pattern became even more apparent among much larger farms. Indeed, the share of the EU-27's agricultural labour that was accounted for by farms with 100 hectares or more increased by 2.5 percentage points over the period 2005–10.

The change between 2005 and 2010 in the relative importance of larger farms (with 50 hectares or more of utilised agricultural area) in terms of their share of the total agricultural labour force can be seen in Map 2.2. Across the EU-27, the labour force share of these larger farms increased by 3.8 percentage points to reach 19.3 % in 2010. Those EU Member States where the share of larger farms rose by at least 7.0 percentage points between 2005 and 2010 included Slovakia, the Baltic Member States, Finland, the United Kingdom and Germany. In none of the EU Member States did the share of the labour force employed by larger farms decline. The smallest increases were recorded in Ireland, Greece, Portugal, France and Hungary; there were no farms of this size in Malta.

Map 2.2: Farms with 50 or more hectares utilised agricultural area: change in the share of the directly employed labour force, 2005–10
(%)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat

EU-27: share increased by 3.8 percentage points

- < 1
- 1 - < 3.8
- 3.8 - < 7
- >= 7
- Data not available

0 200 400 600 800 km

Source: Eurostat (online data code: ef_kvaareg)

2.2 Analysis of farms according to size in terms of output

The second part of this chapter continues with the analysis of farms by size, but using size classes based on the value of their standard output: coefficients are calculated as the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock; these coefficients are calculated at a regional level for each product. The standard output of each farm can be calculated combining the coefficients with information on how many hectares of different types of crops it has and how many head of different types of livestock.

As can be seen from Table 2.5, in the EU-28 in 2010 each of the size classes of farms with less than EUR 15 000 of standard output had higher shares of the number of farms than their shares of utilised agricultural area. By contrast, for each of the size classes of farms with EUR 15 000 or more of standard output the reverse was true, indicating that these farms were generally larger in terms of utilised agricultural area.

Table 2.5: Distribution of holdings and utilised agricultural area by size class (standard output), EU, 2005 and 2010

Size classes in EUR	Number of holdings			Utilised agricultural area		
	EU-27		EU-28	EU-27		EU-28
	2005	2010	2010	2005	2010	2010
	(thousands)			(thousand hectares)		
Total	14 482	12 015	12 248	171 996	174 499	175 815
	(% share within total) (1)			(% share within total) (1)		
0	2.0	2.0	2.0	0.2	0.6	0.6
> 0 to < 2 000	44.0	42.7	42.6	4.9	4.0	4.1
2 000 to < 4 000	17.1	15.7	15.8	4.8	3.6	3.6
4 000 to < 8 000	13.0	12.4	12.5	6.7	5.3	5.4
8 000 to < 15 000	7.5	8.0	8.0	7.1	6.4	6.5
15 000 to < 25 000	4.4	4.9	4.9	7.0	6.4	6.4
25 000 to < 50 000	4.4	5.1	5.1	11.7	11.1	11.2
50 000 to < 100 000	3.3	3.9	3.8	15.4	14.7	14.7
100 000 to < 250 000	2.8	3.4	3.4	20.5	21.4	21.3
250 000 to < 500 000	0.9	1.2	1.2	9.9	11.7	11.6
500 000 or more	0.4	0.7	0.7	11.8	14.6	14.6

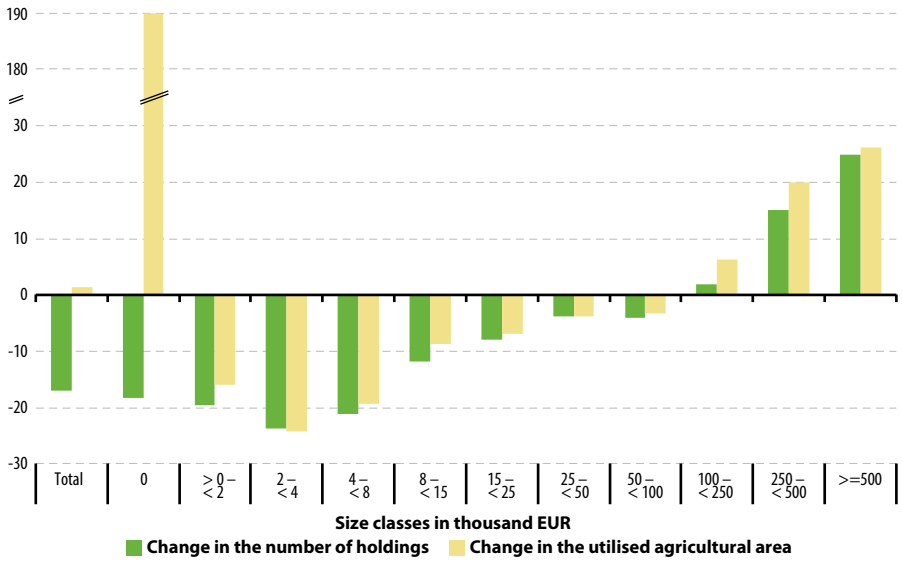
(1) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvecsleg)

The very largest farms, with a standard output of EUR 0.5 million or more, cultivated 14.6 % of the total utilised agricultural area in the EU-28, but this size class accounted for only 0.7 % of the total number of farms. Combining several of the larger size classes, while only one in five (19.1 %) farms across the EU-28 had a standard output of EUR 15 000 or more, these farms cultivated four fifths (79.8 %) of the utilised agricultural area. By contrast, more than two fifths (44.6 %) of farms in the EU-28 had a standard output of less than EUR 2 000 and these farms accounted for just one twentieth (4.6 %) of the total utilised agricultural area.

The increase in the utilised agricultural area of farms with at least EUR 100 000 of standard output outweighed the decrease of all other farms

As noted earlier, the comparison of data for 2005 and 2010 for the EU-27 is influenced to some extent by changes in the coverage of the surveys. Figure 2.3 focuses on the percentage changes in the number of farms in the EU-27 and their utilised agricultural area between 2005 and 2010, with an analysis by standard output size class; this figure can be compared with Figure 2.2 which presented a similar analysis based on size classes of the utilised agricultural area. The overall pattern is broadly similar, with growth in the number of farms and the utilised agricultural area reported by the largest size classes — in this case all classes where standard output was at least EUR 100 000 — and with a fall in the number of farms and utilised agricultural area for nearly all of the smaller size classes. The largest decreases were generally recorded for the smallest size classes, but it should be noted that these are the classes most likely to be influenced by changes in survey thresholds. The one major difference between this analysis using the standard output and that based on the utilised agricultural area is the large increase in the utilised agricultural area of farms in the size class with EUR 0 standard output: the quarter of a million farms in this size class cultivated 0.6 % of the utilised agricultural area in the EU-27 in 2010 having held a share of just 0.2 % in 2005. The category of farms with no standard output includes farms with fallow land, permanent grassland and meadow that is not used for production, and kitchen gardens.

Figure 2.3: Change in the number of holdings and utilised agricultural area by size class (standard output), EU-27, 2005–10
(%)



Source: Eurostat (online data code: ef_kvecsleg)

An analysis for each of the EU Member States (see Table 2.6) indicates that the increase in the share of the number of farms in the largest size classes (in this case farms with a standard output of EUR 250 000 or more) was widespread, with only Cyprus recording a fall in their share between 2005 and 2010, although there was no change in the share in Greece. In percentage point terms, the highest increases were in Luxembourg, Belgium and the Netherlands, as well as in the Czech Republic and the United Kingdom. In 2010, 3 in 10 (30.4 %) Dutch farms had a standard output of EUR 250 000 or more, while one in five farms in Belgium and Denmark were also in this size class.

Around three quarters of the utilised agricultural area in Slovakia and the Czech Republic was cultivated by farms with a standard output of at least EUR 250 000

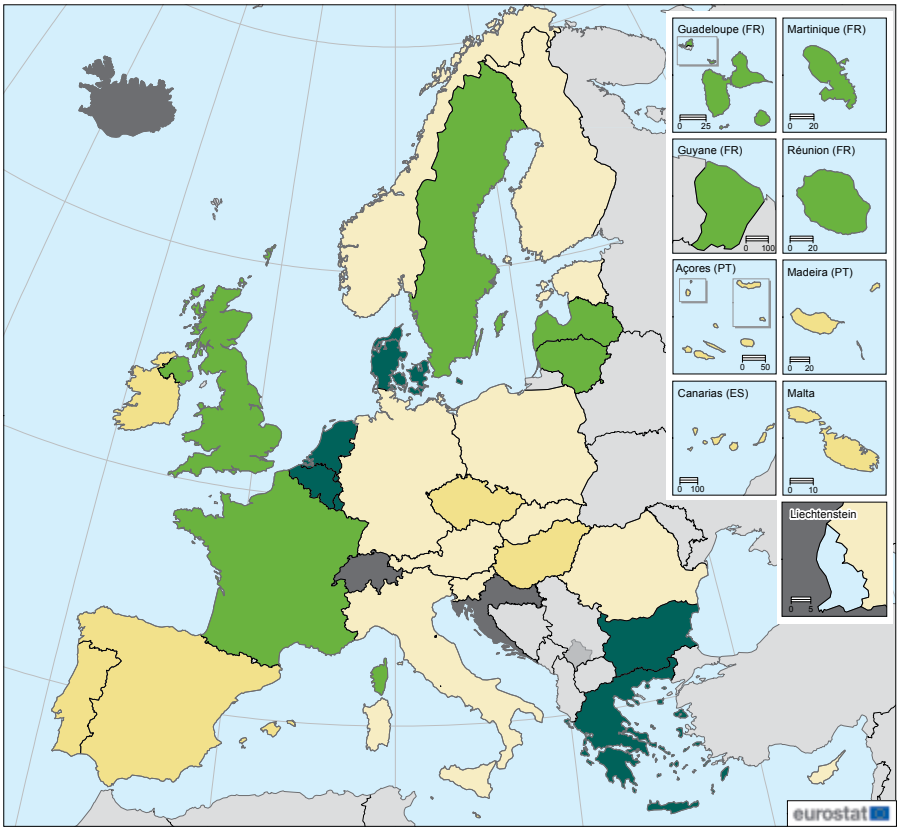
The change between 2005 and 2010 in the relative importance of these larger farms (with a standard output of EUR 250 000 or more) in terms of their share of the total utilised agricultural area is shown in Map 2.3. Increases of at least 10.0 percentage points were recorded in six of the EU Members States, with the largest gains in Greece (up 32.8 percentage points). In four Member States — Spain, Hungary, Malta and the Czech Republic — larger farms (with a standard output of at least EUR 250 000) saw their share of the utilised agricultural area fall slightly (by no more than 1.0 percentage point).

Table 2.6: Distribution of holdings by size class (standard output), 2005 and 2010 ([1])
(% share of each size class within the total)

	Size classes in EUR									
	0		> 0 to < 4 000		4 000 to < 25 000		25 000 to < 250 000		250 000 or more	
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010
EU-28	:	2.0	:	58.5	:	25.4	:	12.3	:	1.9
EU-27	2.0	2.0	61.1	58.4	24.9	25.3	10.6	12.4	1.3	1.9
Belgium	0.1	0.4	7.8	6.8	22.1	20.4	54.7	50.8	15.2	21.6
Bulgaria	0.2	0.3	86.7	84.6	11.7	12.1	1.2	2.5	0.2	0.5
Czech Republic	0.3	0.6	48.0	16.7	30.3	43.7	15.8	28.4	5.6	10.6
Denmark	0.4	2.9	4.3	4.7	43.5	35.4	34.8	36.7	17.0	20.4
Germany	0.2	0.2	10.5	2.6	31.6	31.6	47.4	52.0	10.2	13.7
Estonia	0.4	18.0	63.4	40.9	28.6	28.1	6.4	11.0	1.2	2.0
Ireland	0.0	0.0	14.6	24.8	51.1	49.1	33.5	25.0	0.9	1.0
Greece	0.0	0.7	50.8	52.1	41.6	39.3	7.5	7.8	0.1	0.1
Spain	0.6	1.8	38.3	37.8	39.5	37.4	19.8	20.7	1.8	2.3
France	0.1	0.4	17.2	14.4	23.0	23.7	53.1	52.5	6.6	9.0
Croatia	:	0.2	:	60.3	:	33.4	:	6.0	:	0.2
Italy	1.4	1.5	45.0	46.8	38.4	32.9	14.0	17.1	1.2	1.8
Cyprus	0.8	0.8	68.4	72.1	23.0	20.0	6.9	6.4	0.8	0.7
Latvia	0.0	9.2	82.7	64.5	15.3	21.2	1.8	4.7	0.1	0.4
Lithuania	0.1	1.6	62.0	71.7	36.0	22.5	1.9	3.9	0.1	0.3
Luxembourg	0.0	:	6.9	5.9	24.5	21.4	63.7	60.9	4.9	12.3
Hungary	3.2	3.5	81.1	78.0	13.1	14.7	2.4	3.5	0.3	0.4
Malta	25.7	24.9	51.5	50.6	17.4	18.8	4.9	5.3	0.4	0.5
Netherlands	0.1	0.2	2.8	2.7	22.9	24.9	48.9	41.8	25.2	30.4
Austria	0.3	0.2	27.8	22.9	39.7	38.5	31.3	36.6	1.0	1.8
Poland	6.1	2.8	64.2	48.7	25.0	38.6	4.5	9.5	0.1	0.4
Portugal	0.7	0.9	62.9	61.7	28.2	28.3	7.5	8.3	0.6	0.8
Romania	1.0	2.6	86.0	86.0	12.6	10.7	0.4	0.6	0.0	0.1
Slovenia	0.1	0.0	42.9	44.7	48.8	45.2	8.1	9.9	0.1	0.2
Slovakia	0.1	1.3	89.6	58.2	6.2	26.7	2.7	9.0	1.5	4.8
Finland	0.0	1.9	18.2	14.8	41.2	44.1	39.3	36.4	1.2	2.7
Sweden	3.2	3.1	23.1	22.1	41.7	43.9	28.0	26.1	4.0	4.8
United Kingdom	12.5	1.0	22.1	17.2	29.7	33.1	30.1	38.1	5.7	10.6
Iceland	:	0.0	:	1.5	:	24.7	:	68.3	:	5.4
Norway	0.0	0.1	4.1	2.4	42.7	41.8	50.2	51.3	3.1	4.5
Switzerland	:	0.0	:	3.4	:	21.3	:	68.9	:	6.4
Montenegro	:	2.6	:	81.5	:	15.6	:	0.4	:	0.0

([1]) Shares may not sum to 100 % due to rounding.
Source: Eurostat (online data code: ef_kvecsleg)

Map 2.3: Farms with EUR 250 000 or more standard output: change in the share of total utilised agricultural area, 2005–10
(%)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat

EU-27: share increased by 4.7 percentage points

- < 0.6
- 0.6 - < 4.7
- 4.7 - < 10
- >= 10
- Data not available

0 200 400 600 800 km

Source: Eurostat (online data code: ef_kvecsleg)

DATA SOURCES AND AVAILABILITY

A comprehensive farm structure survey is carried out by EU Member States every 10 years, and is known as an agricultural census. Intermediate sample surveys are carried out three times between these basic surveys. The survey data are aggregated to different geographic levels (countries, regions, and for basic surveys also districts) and arranged by size class (according to utilised agricultural area and standard output), area status, legal status of the farm, objective zone and farm type.

In preparation for the 2010 census a new legal basis was developed: Regulation (EC) 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods.

Thresholds and coverage

The basic unit underlying the survey is the farm, a technical-economic unit under single management engaged in agricultural production. Until 2007, the farm structure survey covered all farms whose utilised agricultural area was at least one hectare (ha) as well as farms of less than one hectare if their market production exceeded certain natural thresholds. Under the new legislation, the minimum threshold for farms changed from one hectare to five hectares of utilised agricultural area for the 2010 survey. The new five hectare threshold was adopted in the Czech Republic, Denmark, Germany and the United Kingdom. In Luxembourg, the threshold was changed to three hectares, in Slovakia to two hectares, and in the Netherlands the threshold was set at a minimum of EUR 3 000 of standard output.

This new legislation also changed the coverage of the survey from 99 % of the standard gross margin to 98 % of the utilised agricultural area and 98 % of the livestock.

Treatment of common land

Common land is land that does not belong to an agricultural holding, but upon which common rights apply. Common land in the EU consists of pasture, horticultural land or other land, with a large proportion being used for grazing animals. In Regulation 1166/2008 it was decided to include common land as part of the utilised agricultural area. As such, the information collected through the census for 2010 includes common land within the agricultural area of each EU Member State. The inclusion of common land was conducted using three different methods, each of which has an impact when analysing the utilised agricultural area, the permanent

grassland and characteristics of each holding. This change in 2010 resulted in the utilised agricultural area and the number of large farms increasing considerably in certain Member States (for example, Greece).

Key indicators and concepts

The utilised agricultural area describes the area actually used for farming. It includes the land categories: arable land; permanent grassland; permanent crops; other agricultural land such as kitchen gardens. The term does not include unused agricultural land, woodland and land occupied by buildings, farmyards, tracks, ponds, and similar areas (not used as agricultural land). The standard output of an agricultural product (crop or livestock) is the average value of agricultural output at farm-gate prices, in euro per hectare or per head of livestock. There is a regional coefficient for each product based on an average value over five years. Until 2007, the farm structure survey used the standard gross margin to classify farms by type of farming and by economic size but this was replaced by the concept of standard output for the 2010 census. It should be noted that the standard output excludes direct payments.

The farm labour force is made up of all individuals who have completed their compulsory education (having reached school-leaving age) and who carried out farm work on the surveyed farm during the 12 months up to the survey day. The figures include holders, even when not working on the farm, whereas their spouses are counted only if they carry out farm work on the farm. The regular labour force covers the family labour force and permanently employed (regular) non-family workers. The family labour force includes the holder and the members of his / her family who carried out farm work (including all persons of retirement age who continue to work on the farm).

One annual work unit corresponds to the work performed by one person who is occupied on a farm on a full-time basis. Full-time means the minimum hours required by the national provisions governing contracts of employment. If these provisions do not explicitly indicate the number of hours, then 1 800 hours are taken to be the minimum (225 working days of eight hours each).

The livestock unit is a reference unit which facilitates the aggregation of livestock from various species and age via the use of specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal. The reference unit used for the calculation of livestock units (one unit) is the grazing equivalent of one adult dairy cow producing 3 000 kg of milk annually, without additional concentrated food-stuffs.

3 Agricultural accounts and prices

One of the principal objectives of the Common Agricultural Policy (CAP) is to provide farmers with a reasonable standard of living. Although this concept is not defined explicitly within the CAP, a range of indicators — including those on income development from farming activities — may be used to determine the progress being made towards this objective. Economic accounts for agriculture (EAA) provide an insight, among others, into:

- the economic viability of agriculture;
- the evolution of income received by farmers;
- the structure and composition of agricultural production and intermediate consumption;
- relationships between prices and quantities of both inputs and outputs.

A 2003 reform of the CAP introduced a new system of direct payments, known as the single payment scheme. Its goal was to ensure a safety net for farmers in the form of basic income support, decoupled from production, while stabilising farmers' incomes from their sales to market (which are subject to volatility). To maximise their profits, farmers were encouraged to respond to market signals — producing goods that consumers want — and to look after the farmland while fulfilling environmental, animal welfare and food safety standards.

The European Commission launched a public debate on the future of the CAP during 2010. Its outcome, coupled with input from the European Council and Parliament, led the Commission to present a communication in November 2010, titled 'The CAP towards 2020: meeting the food, natural resources and territorial challenges of the future' (COM(2010) 672 final). This was followed,

in October 2011, by a set of legal proposals concerning the future of the CAP. After almost two years of negotiations, a political agreement was reached on 26 June 2013, and these new proposals came into effect on 1 January 2014. With a budget of EUR 303.1 billion foreseen for the 2014–20 period, direct payments will continue to form a significant part of the EU's agricultural and rural development budget.

3.1 Agricultural output

The economic accounts for agriculture show that the total output of the agricultural industry (comprising the output values of crops and animals, agricultural services and the goods and services produced from inseparable non-agricultural secondary activities) in the EU-28 in 2013 was an estimated EUR 412.5 billion at basic prices. The equivalent of 60.9 % of the value of agricultural output generated was spent on intermediate consumption (input goods and services). The residual gross value added at basic prices was the equivalent of 39.1 % of the value of total output in 2013 or EUR 161.2 billion.

Final output

The output value of the EU-28's agricultural industry at producer prices (therefore excluding subsidies, less taxes on products) was an estimated EUR 408.8 billion in 2013. France was the largest agricultural producer in the EU-28 (EUR 73.6 billion or 18.0 % of the EU-28 total), followed by Germany (13.0 %), Italy (12.2 %) and Spain (10.7 %); relative to its size, the Netherlands accounted for quite a high share of the EU-28's agricultural output (6.7 %).

During the 2005–13 period, the value of agricultural output rose in all of the EU Member States other than Greece (where output fluctuated but was largely unchanged). The highest increases in output value (in absolute terms) were recorded for the two largest producers, namely France and Germany, output rising by EUR 17.4 billion and EUR 14.4 billion respectively. There were also relatively large increases in agricultural output in the United Kingdom, Poland, Spain, Italy and the Netherlands.

Table 3.1: Output value of the agricultural industry at producer prices, 2005 and 2011–13

	Value (EUR million)				Share of EU-28 (%)	
	2005	2011	2012	2013	2005	2013
EU-28	309 723.4	391 035.6	403 703.2	408 858.7	100	100
Belgium	6 547.9	7 701.4	8 451.8	8 530.5	2.1	2.1
Bulgaria	3 356.0	4 261.2	4 303.5	3 862.4	1.1	0.9
Czech Republic	3 424.2	4 781.2	4 840.9	4 881.5	1.1	1.2
Denmark	7 865.5	10 569.4	11 860.3	11 881.2	2.5	2.9
Germany	38 946.0	52 299.0	53 800.0	53 314.4	12.6	13.0
Estonia	521.3	806.9	894.1	876.2	0.2	0.2
Ireland	5 311.5	6 642.4	7 077.1	7 457.9	1.7	1.8
Greece	10 641.4	10 780.4	10 549.7	10 295.0	3.4	2.5
Spain	35 406.9	40 281.0	41 685.7	43 759.2	11.4	10.7
France	56 220.6	71 670.9	76 312.6	73 597.3	18.2	18.0
Croatia	2 243.9	2 530.7	2 479.8	2 441.5	0.7	0.6
Italy	41 896.6	47 607.5	48 429.3	49 931.2	13.5	12.2
Cyprus	654.1	706.3	719.6	736.4	0.2	0.2
Latvia	487.1	752.2	926.1	850.7	0.2	0.2
Lithuania	1 433.2	2 407.5	2 792.4	2 786.6	0.5	0.7
Luxembourg	287.7	348.5	412.0	461.1	0.1	0.1
Hungary	5 701.8	7 658.1	7 417.4	7 535.2	1.8	1.8
Malta	109.7	126.5	125.9	130.1	0.0	0.0
Netherlands	20 302.1	25 425.2	26 257.8	27 297.8	6.6	6.7
Austria	5 150.4	7 105.2	7 193.7	7 022.6	1.7	1.7
Poland	14 119.4	21 711.6	22 407.4	22 537.6	4.6	5.5
Portugal	5 498.0	6 015.5	6 258.3	6 541.9	1.8	1.6
Romania	12 667.1	18 048.3	14 410.2	18 160.2	4.1	4.4
Slovenia	982.9	1 223.8	1 149.1	1 169.5	0.3	0.3
Slovakia	1 625.0	2 246.4	2 395.7	2 245.1	0.5	0.5
Finland	3 209.8	4 493.0	4 728.6	4 835.7	1.0	1.2
Sweden	4 297.2	5 928.5	6 396.9	6 299.0	1.4	1.5
United Kingdom	20 816.4	26 907.1	29 427.5	29 421.1	6.7	7.2
Norway	3 131.6	4 033.4	4 445.9	4 387.1	1.0	1.1
Switzerland	6 507.2	8 184.2	8 204.4	8 096.4	2.1	2.0

Source: Eurostat (online data code: aact_eaa01)

Figure 3.1: Real change in the main components of the agricultural industry, EU-28, 2012–13
(%)

Source: Eurostat (online data codes: aact_eaa04 and aact_ali01)

Table 3.2 shows that the main components of the EU-28's agricultural industry in 2013 were crop output (50.8 % of the total) and animal output (41.5 %); agricultural services (4.8 %) and inseparable secondary activities — generally the processing of agricultural products — provided the residual shares (4.8 % and 2.9 %). The agricultural products accounting for the highest share of output value in the EU-28's agricultural industry in 2013 were milk (14.1 %) and cereals (13.0 %), while pig and cattle output also accounted for relatively large shares (9.4 % and 7.9 %). More information on the production of agricultural products is provided in Chapter 4.

Table 3.2 also shows the annual change in EU-28 agricultural output in volume terms between 2012 and 2013 (2.0 %). The volume of crop output rose by 3.8 %, with the biggest rates of increase being recorded for oilseeds (16.3 %) and cereals (9.3%). The biggest rates of decline were recorded for olive oil (– 36.1 %), followed by sugar beet (– 4.8 %), fresh vegetables (–0.6 %) and plants and flowers (– 0.4 %).

Table 3.2: Real change in the main components of agricultural output, EU-28, 2012–13

	Annual change, 2012–13			Share in output value of the agricultural industry (at producer prices, 2013)
	Volume (at producer prices)	Real value (at producer prices)	Real value (at basic prices)	
Agricultural industry	2.0	0.2	0.1	100.0
Crop output	3.8	– 1.9	– 2.1	50.8
Cereals	9.3	– 11.9	– 12.1	13.0
Oilseeds	16.3	:	:	2.7
Sugarbeet	– 4.8	– 7.9	– 8.8	0.8
Fresh vegetables	– 0.6	0.7	0.8	6.9
Plants and flowers	– 0.4	:	:	5.0
Potatoes	1.0	24.9	24.7	2.9
Fruits	7.7	11.0	10.7	6.4
Wine	7.3	11.9	11.9	4.1
Olive oil	– 36.1	– 20.2	– 20.0	0.8
Animal Output	0.0	2.5	2.5	41.5
Cattle	– 1.5	– 1.0	– 1.3	7.9
Pigs	– 0.7	0.2	0.2	9.4
Sheep and goats	– 0.5	– 3.3	– 3.6	1.3
Poultry	1.4	3.6	3.6	5.2
Milk	0.6	10.4	10.4	14.1
Eggs	2.7	– 15.8	– 15.7	2.1
Agricultural services	0.6	1.1	1.1	4.8
Secondary activities	1.0	1.8	1.8	2.9

Source: Eurostat (online data codes: aact_eaa01, aact_eaa04 and aact_eaa05)

The volume of animal output has remained fairly stable in the EU-28 between 2012 and 2013.There was a reduction in the volume of cattle production (– 1.5 %), pigs production (– 0.7%) and sheep and goat production (– 0.5 %), although eggs and poultry production rose by 2.7 % and 1.4%, respectively. There was little change in the volume of milk production in the EU-28 in 2013 (+0.6 %).

The sharpest increases in the real value of crop products between 2012 and 2013 were recorded for potatoes (24.9 %), wine (11.9 %) and fruits (11.0 %). The highest increases among animal products were recorded for milk (10.4 %) and poultry production (3.6 %).

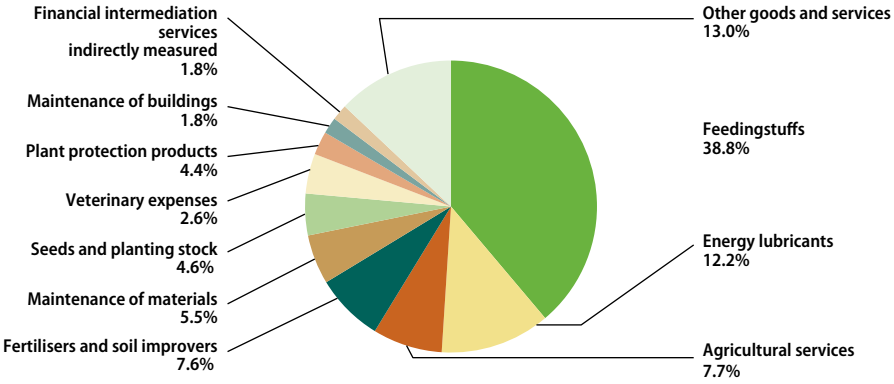
Intermediate consumption

Intermediate consumption covers purchases made by farmers for raw and auxiliary materials that are used as inputs for crop an animal production; it also includes expenditure on veterinary services, repairs and maintenance, and other services. Intermediate consumption within the EU-28's agricultural industry in 2013 was valued at EUR 251.2 billion at basic prices.

Feeding stuffs for animals accounted for by far the highest share (38.8 %) of total intermediate inputs within the EU-28's agricultural activity in 2013, valued at more than three times the share of energy and lubricants (12.2 %) — the latter are used for both animal and crop production. Fertilisers and soil improvers (7.6 %) accounted for the highest share of intermediate inputs among those inputs used exclusively for crop production (see Figure 3.2).

The relative share of intermediate consumption in production value has generally risen during recent years (see Table 3.3). Three main intermediate inputs are used for the production of crops — seeds and plantings, fertilisers, and plant protection products — which together accounted for 20.2 % of the production value of crops in the EU-28 in 2013 (2.1 percentage points higher than in 2005). The two main intermediate inputs for animal production — feedstuffs and veterinary expenses — together accounted for 61.3 % of the EU-28's production value for animals in 2013. This was a full 10.3 percentage points higher than in 2005, reflecting the upward development of feed prices (which peaked in 2011).

Figure 3.2: Intermediate inputs consumed by the agricultural industry at basic prices, EU-28, 2013
(% share of total intermediate inputs)



Source: Eurostat (online data code: aact_eaa01)

Table 3.3: Share of intermediate consumption in production at basic prices, 2005 and 2011–13
(% share of total intermediate inputs)

	Seeds, fertilisers and plant protection in crop production				Feedingstuffs and veterinary expenses in animal production			
	2005	2011	2012	2013	2005	2011	2012	2013
EU-28	18.1	19.6	19.6	20.2	51.0	62.4	62.3	61.3
Belgium	23.0	24.6	22.4	23.5	60.9	74.6	72.7	71.7
Bulgaria	13.7	16.9	17.2	18.2	52.2	78.7	78.2	71.4
Czech Republic	24.1	22.5	22.2	21.6	67.3	70.1	75.1	81.0
Denmark	25.1	25.5	21.8	22.5	52.0	56.1	55.2	48.8
Germany	20.2	20.0	18.8	20.4	57.1	73.6	74.0	72.2
Estonia	12.8	20.8	18.8	23.0	70.7	62.5	63.4	63.9
Ireland	36.6	35.5	32.8	41.3	45.6	54.4	59.3	56.2
Greece	9.9	11.2	11.4	11.8	52.7	66.4	62.0	64.3
Spain	11.5	13.0	13.1	13.3	51.7	70.4	71.8	70.5
France	21.4	22.0	20.7	23.7	53.2	64.3	65.8	65.4
Croatia	25.3	24.7	26.5	27.2	51.1	69.1	77.8	82.5
Italy	11.2	14.1	14.8	14.1	51.7	58.4	56.0	56.7
Cyprus	15.6	15.4	15.8	14.8	53.1	60.2	59.4	60.5
Latvia	25.8	32.0	29.3	36.3	55.7	62.2	65.2	57.7
Lithuania	34.3	26.2	24.6	26.0	53.1	66.9	64.0	62.9
Luxembourg	21.0	24.9	18.4	15.3	70.0	76.4	92.9	109.2
Hungary	24.4	24.9	28.6	27.8	54.4	68.6	67.2	67.1
Malta	11.0	12.5	13.3	12.4	48.6	52.7	52.6	45.7
Netherlands	16.3	19.8	18.8	18.2	43.6	55.9	56.2	53.8
Austria	16.1	14.2	15.9	17.5	45.2	52.0	53.2	49.6
Poland	18.9	20.8	21.5	23.1	44.3	58.9	56.2	50.0
Portugal	12.2	13.8	13.7	12.6	65.3	81.0	81.4	83.6
Romania	14.2	15.8	17.7	17.1	67.5	83.9	76.4	82.4
Slovenia	15.4	16.6	19.6	18.5	64.2	79.2	78.4	82.1
Slovakia	31.9	28.7	30.5	28.8	49.8	40.1	36.9	42.3
Finland	29.2	33.3	32.2	34.2	37.1	41.0	43.7	41.6
Sweden	28.7	25.2	23.5	25.6	39.1	49.9	53.8	50.1
United Kingdom	39.2	34.8	36.2	33.4	34.4	38.7	40.0	42.8
Norway	19.4	21.0	20.8	19.8	46.7	46.6	48.6	51.0
Switzerland	14.3	14.4	14.5	15.3	55.4	56.7	56.7	51.5

Source: Eurostat (online data code: aact_eaa01)

Gross value added and subsidies

Gross value added at producer prices of the EU-28's agricultural industry in 2013 was an estimated EUR 157.6 billion, while overall subsidies amounted to EUR 51.7 billion (see Table 3.4). The highest subsidies were generally granted to those EU Member States with the highest levels of output (France, Spain, Italy and Germany). The value of subsidies received by farmers in Finland, Greece, Ireland and the Czech Republic accounted for a higher share of EU-28 subsidies than their relative weight in the output value of the EU-28's agricultural industry.

The type of subsidies provided to the EU-28's agricultural industry has changed over time as a result of successive reforms of the CAP, 'decoupling' subsidies from particular crops and moving towards a system of single farm payments. Subsidies on products in the EU-28 were valued at EUR 20.0 billion in 2005, which had fallen to EUR 3.8 billion by 2013. By contrast, other subsidies on production increased from EUR 29.7 billion in 2005 to EUR 51.7 billion by 2013.

Table 3.4: Agricultural gross value added at producer prices and subsidies, 2005 and 2011–13
(EUR million)

	Gross value at producer prices				Overall subsidies			
	2005	2011	2012	2013	2005	2011	2012	2013
EU-28	130 160	152 384	156 908	157 617	29 754	52 645	52 312	51 666
Belgium	2 146	1 842	2 314	2 288	360	693	638	622
Bulgaria	1 544	1 516	1 542	1 402	87	458	617	854
Czech Republic	970	1 388	1 333	1 316	639	1 121	1 164	1 165
Denmark	2 253	2 698	3 592	3 916	938	998	1 007	995
Germany	12 920	15 396	16 082	14 645	6 084	7 350	7 320	7 295
Estonia	197	307	356	304	68	174	187	192
Ireland	1 567	1 796	1 784	1 937	1 772	1 865	1 760	1 624
Greece	6 146	5 419	5 297	5 102	948	2 777	2 858	2 854
Spain	20 345	20 566	21 021	22 800	2 358	5 934	6 066	6 136
France	21 375	28 480	30 830	26 936	2 236	8 737	8 441	8 182
Croatia	883	967	872	849	21	38	21	30
Italy	24 357	25 182	25 363	26 647	2 715	5 029	4 481	4 441
Cyprus	332	325	333	350	46	41	45	41
Latvia	156	174	220	170	82	176	187	196
Lithuania	409	722	988	945	36	177	192	194
Luxembourg	97	94	124	123	62	75	67	66
Hungary	1 800	2 803	2 496	2 621	673	1 494	1 505	1 562
Malta	45	55	55	65	6	17	18	17
Netherlands	7 751	8 110	8 416	9 093	289	956	985	968
Austria	2 077	3 041	2 953	2 758	1 534	1 528	1 517	1 597
Poland	5 159	7 826	8 222	8 807	1 187	3 653	3 118	2 825
Portugal	2 201	1 908	1 993	2 232	536	643	821	723
Romania	6 003	8 109	6 201	7 819	363	1 208	1 662	1 665
Slovenia	397	466	387	390	150	237	251	249
Slovakia	382	485	577	527	168	431	488	468
Finland	738	1 333	1 367	1 406	1 326	1 793	1 839	1 791
Sweden	1 137	1 660	1 833	1 738	900	1 031	1 057	1 070
United Kingdom	6 775	9 713	10 357	10 432	4 169	4 013	4 000	3 842
Norway	924	1 253	1 370	1 352	499	666	761	747
Switzerland	2 564	3 049	2 966	3 071	1 660	2 363	2 427	2 365

Source: Eurostat (online data code: aact_eaa01)

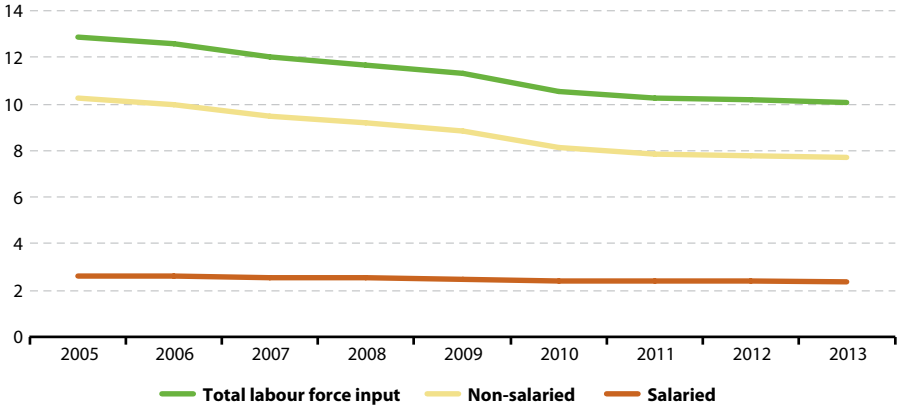
3.2 Agricultural labour input

The vast majority of the EU's farms are relatively small, family-run holdings. Often, these holdings draw on family members to provide labour (in addition, to the farm holder). Agriculture is also characterised by seasonal labour peaks (for example, those linked to harvesting), with high numbers of workers hired for relatively short periods of time. Otherwise, some farmers are occupied on a part-time basis (and they may have alternative, sometimes important sources of income) — so while there are a large number of people providing labour within agriculture, many of these will have their main employment elsewhere. For this reason, estimates are made of the volume of labour input provided in terms of full-time labour equivalents (measured in annual work units).

EU-28 agricultural labour input was estimated at 10.1 million annual work units (AWUs) (the equivalent of 10.1 million people working full-time in 2013. Among the EU Member States, the highest levels of agricultural labour input were recorded for Poland (2.1 million AWUs), Romania (1.6 million AWUs) and Italy (1.1 million AWUs).

Between 2005 and 2013 there was a reduction of almost one fifth (21.8 %) in agricultural labour input in the EU-28; the steepest annual declines were posted in 2007 and 2010. The overall contraction of 2.5 million AWUs was almost exclusively due to a reduction in non-salaried labour input (2.4 million AWUs or 92.6 % of the total). Although the volume of agricultural labour input from salaried persons in the EU-28 fell in successive years from 2007 to 2010, there was a slight increase in the number of AWUs for salaried persons in both 2012 and 2013.

Figure 3.3: Agricultural labour input, EU-28, 2005–13
(million annual work units)



Source: Eurostat (online data code: aact_ali01)

Table 3.5: Agricultural labour input, 2005 and 2011–13

	Total agricultural labour input (1 000 annual work unit)				Change, 2005–13 (%)
	2005	2011	2012	2013	
EU-28	12 870.0	10 266.0	10 201.2	10 061.8	– 21.8
Belgium	70.0	57.6	58.1	56.5	– 19.3
Bulgaria	626.4	375.8	347.4	321.2	– 48.7
Czech Republic	139.2	106.2	105.8	105.1	– 24.5
Denmark	62.9	52.1	52.4	52.7	– 16.2
Germany	582.6	517.5	514.0	508.0	– 12.8
Estonia	37.8	24.9	24.6	24.9	– 34.1
Ireland	148.6	165.6	165.6	165.6	11.4
Greece	606.6	408.0	395.7	383.8	– 36.7
Spain	1 017.2	894.1	887.3	865.3	– 14.9
France	907.8	799.2	788.4	781.0	– 14.0
Croatia	228.0	199.0	201.9	198.1	– 13.1
Italy	1 242.0	1 124.0	1 085.0	1 067.0	– 14.1
Cyprus	28.7	25.4	25.3	25.6	– 10.8
Latvia	138.2	81.8	80.1	75.1	– 45.7
Lithuania	173.6	142.8	145.5	141.2	– 18.7
Luxembourg	4.0	3.7	3.8	3.6	– 10.0
Hungary	522.2	431.8	426.3	423.5	– 18.9
Malta	4.1	4.9	4.9	4.9	19.5
Netherlands	194.1	174.7	169.5	167.6	– 13.7
Austria	146.3	125.7	124.7	122.9	– 16.0
Poland	2 291.9	2 101.3	2 101.3	2 101.3	– 8.3
Portugal	437.3	356.8	355.8	354.1	– 19.0
Romania	2 596.0	1 532.0	1 573.0	1 560.0	– 39.9
Slovenia	90.0	78.0	76.7	74.9	– 16.8
Slovakia	98.8	57.4	57.1	54.1	– 45.2
Finland	96.2	81.2	79.5	77.4	– 19.5
Sweden	75.6	56.7	54.1	51.6	– 31.7
United Kingdom	303.8	287.8	297.3	295.0	– 2.9
Iceland	:	4.3	4.1	3.9	:
Norway	66.0	49.4	47.4	45.5	– 31.1
Switzerland	88.9	79.7	78.7	77.8	– 12.5

Source: Eurostat (online data code: aact_ali01)

Malta and Ireland were the only EU Member States to record an expansion in their respective agricultural labour forces between 2005 and 2013 (labour input rose overall by 19.5 % and 11.4 % respectively). Among the five EU Member States that recorded reductions in agricultural labour input of less than 10 % during the 2005–13 period were two of the three countries with the highest levels of agricultural labour input — the United Kingdom and Poland. At the other end of the scale, there were eight EU Member States that recorded contractions in agricultural labour input between 2005 and 2013 in excess of the EU-28 average (– 18.1 %). Among these, Greece, Estonia, Sweden and Romania reported declines of 31.7 to 39.9 %, while the reductions were even more pronounced in Bulgaria (– 48.7 %), Latvia (– 45.7 %) and Slovakia (– 45.2 %).

3.3 Agricultural income

Income is a key measure for determining the viability of the agricultural sector. The nominal factor income of the agricultural industry (the income from selling the services of factors of production — land, labour and capital) in the EU-28 was valued at EUR 128.7 billion in basic price terms in 2013. Within agricultural accounts, income has traditionally been measured as an index, computed on the basis of the real factor income per AWU.

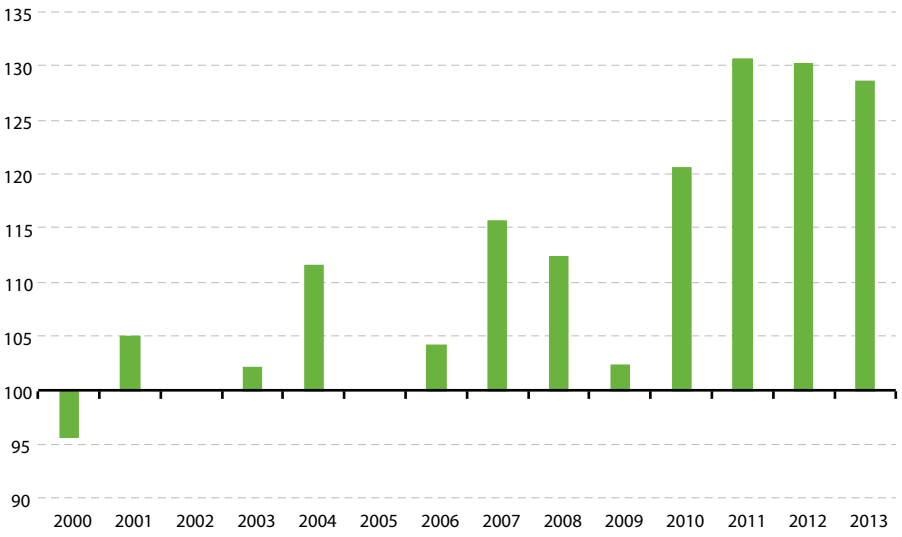
From the base year of 2005 (=100), the EU-28 index of agricultural income rose for two consecutive years, before falling back in 2008 and 2009 (at the height of the financial and economic crisis) to almost the same level as in 2005. Thereafter, the index of agricultural income rebounded, with relatively rapid growth in 2010 and 2011. Agricultural income in the EU-28 remained stable in 2012 (rising by just 0.1 % compared with the year before).

The overall pattern for the development of agricultural income in the EU-28 during the 2005–13 period can be linked to the development of the two underlying indicators that are used in the construction of the index. EU-28 real factor income for the agricultural industry fluctuated considerably but in broad terms rose relatively slowly. This higher factor income was nominally shared amongst a smaller workforce, resulting in stronger rises in average income per full-time labour equivalent.

The variations in real factor income can be linked to rising commodity prices (in 2007 and again in 2010 and 2011) and the downturn in agricultural activity resulting from the financial and economic crisis (in 2008 and 2009). The biggest changes in EU-28 real factor income were recorded in 2009 and 2010, – 12.6 % followed by + 9.3 % and these were apparent in the overall development of the index for agricultural income (see Figure 3.4). Otherwise, the relatively large declines in agricultural labour input recorded in 2007 and 2010 were also apparent as agricultural income increased during both of these years.

A group of seven EU Member States reported that their index of agricultural income in 2013 was at a lower level than in 2005 (see Table 3.6). This group included Ireland (where the biggest contraction in income was recorded, – 17.7 %), Malta, Croatia, Luxembourg, Slovenia Cyprus and Italy (where the smallest reduction was registered, at – 0.1 %). In the case of Malta and Ireland the reduction in agricultural income per AWU could be largely attributed to an expansion in the number of AWUs, whereas in the other five EU Member States it could be largely attributed to a reduction in real factor income.

Figure 3.4: Agricultural income, EU-28, 2000–13 ([1]), ([2])
(2005 = 100)

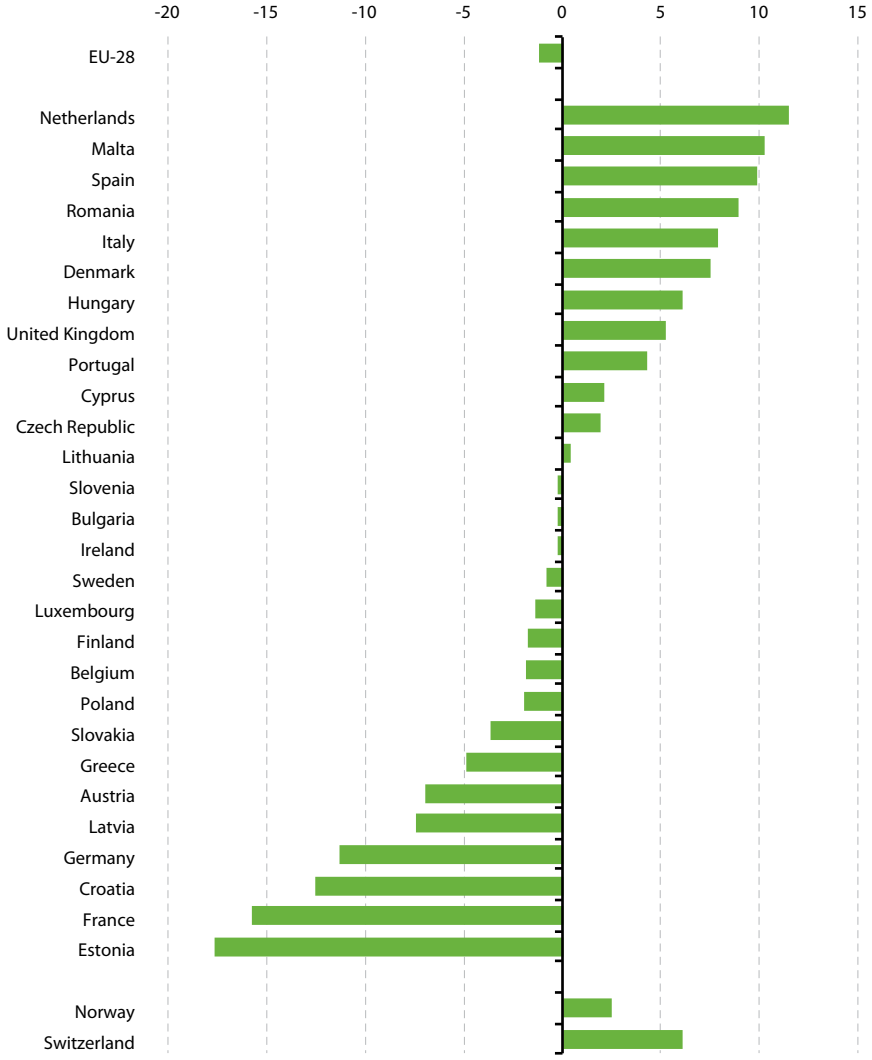


([1]) EU-27: 2000–04.
([2]) Estimates.
Source: Eurostat (online data code: aact_eaa06)

The index of agricultural income rose in the remaining EU Member States between 2005 and 2013. Increases were relatively small — of the order of magnitude of 6.4 % and 7.3 %, respectively — in Portugal and Greece. By contrast, agricultural income per AWU rose by 117.1 % in Slovakia between 2005 and 2013, and almost doubled in Latvia (+ 92.4 %) and Denmark (+ 82.3 %), while increases of 65–79 % were recorded in Hungary, Estonia, the Czech Republic and Poland.

The latest developments from 2012–13 (see Figure 3.5) show that the index of agricultural income rose by (11.4 %) in the Netherlands, while double-digit gains were also recorded in Malta, Spain and Romania. The majority of EU Member States saw their agricultural income vary by no more than +/– 10 % from 2012–13, although there were larger reductions in Estonia (– 17.7 %), Germany, Croatia and France (– 11.3 % to – 15.7 %).

Figure 3.5: Change in agricultural income, 2012–13 ([1])
(%)



([1]) Estimates: except for France; EU-28: 0.1 %.
Source: Eurostat (online data code: aact_eaa06)

Table 3.6: Agricultural income, 2000–13
(2005 = 100)

	Average 2000–05 (1)	Average 2005–10	2011	2012	2013
EU-28	102.4	109.2	130.6	130.3	128.7
Belgium	106.5	114.7	107.1	126.1	123.8
Bulgaria	100.6	112.5	130.0	142.3	142.0
Czech Republic	75.2	95.8	170.1	169.0	172.2
Denmark	101.3	118.5	127.2	169.6	182.3
Germany	95.0	116.1	129.8	138.4	122.8
Estonia	67.1	81.8	190.8	213.1	175.5
Ireland	89.3	107.3	88.4	82.5	82.3
Greece	110.3	97.8	111.5	112.8	107.3
Spain	110.4	108.9	99.3	101.8	111.9
France	105.7	121.2	132.3	136.8	115.3
Croatia	100.0	94.6	115.0	97.9	85.6
Italy	114.2	91.2	96.9	92.6	99.9
Cyprus	101.1	119.2	68.3	94.6	96.6
Latvia	66.8	111.9	135.6	152.8	141.4
Lithuania	70.1	93.8	153.4	191.6	192.4
Luxembourg	123.2	117.0	76.1	87.8	86.6
Hungary	81.0	95.6	181.4	168.5	178.8
Malta	99.8	107.3	79.2	76.9	84.8
Netherlands	108.9	113.3	100.2	108.4	120.8
Austria	96.8	125.5	134.1	124.7	116.0
Poland	76.9	98.4	182.0	169.4	166.1
Portugal	104.8	101.6	92.8	102.0	106.4
Romania	114.1	99.5	157.5	123.0	134.0
Slovenia	79.9	128.9	112.7	95.2	95.0
Slovakia	92.5	106.5	200.0	225.3	217.1
Finland	93.9	116.3	129.7	129.4	127.1
Sweden	95.3	121.6	138.0	143.3	142.2
United Kingdom	95.0	108.3	153.1	139.1	146.4
Norway	119.7	102.7	124.3	133.7	137.0
Switzerland	101.1	105.5	105.0	102.9	109.2

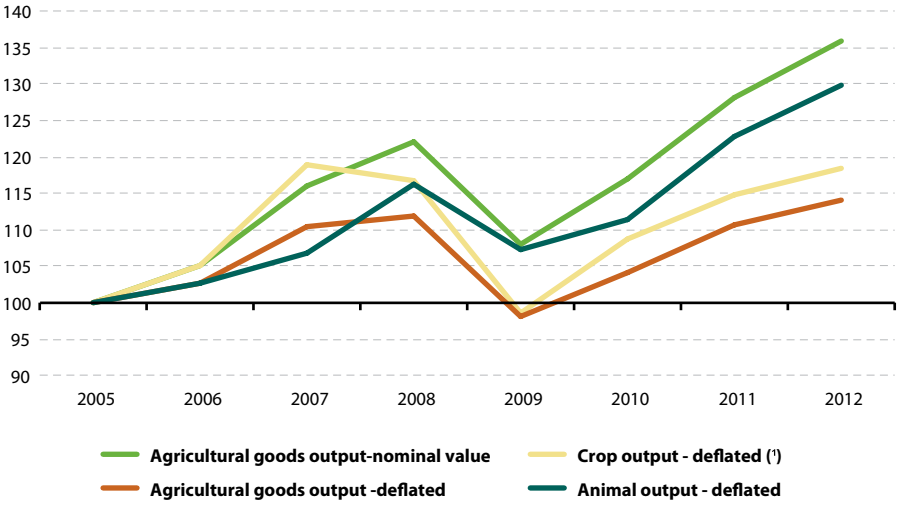
(1) EU-27: 2000–05.
Source: Eurostat (online data code: aact_eaa06)

3.4 Price indices

EU-27 output prices for agricultural goods rose by 35.9 % in nominal terms from 2005–12. Taking into account price inflation (based on the harmonised index of consumer prices — the HICP), the real increase in (deflated) output prices for agricultural goods was 14.1 %, equivalent to an average rate of 1.9 % per annum.

Figure 3.6 shows that (deflated) output prices for agricultural goods in the EU-27 rose during the 2005–08 period by a total of 12.0 %. This was followed by a sharp reduction in prices in 2009 (– 12.3 %), as the output price index fell below its base level for 2005. Thereafter, output prices for agricultural goods in the EU-27 rose by just over 6 % in real terms in both 2010 and 2011, before price increases slowed somewhat in 2012, rising by 3.1 %. Figure 3.6 also shows that prices tended to rise at a faster pace for crop output (+ 18.5 % over the period 2005–12, equivalent to an average of 2.5 % per annum) than for animal output (an overall increase of 9.7 %, equivalent to an average of 1.3 % per annum).

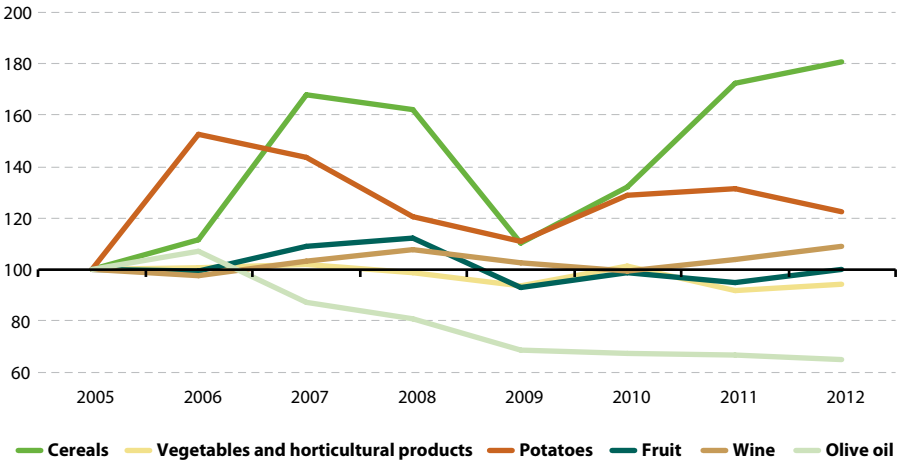
Figure 3.6: Output price indices, EU-27, 2005–12
(2005 = 100)



(1) Including fruit and vegetables.
Source: Eurostat (online data code: apri_pi05_outa)

Figures 3.7 and 3.8 present a more detailed picture of deflated output price developments over the 2005–11 period for a selection of crop and animal products. Among the selected crops shown in Figure 3.7, the greatest variations in EU-27 prices and the overall highest price increases between 2005 and 2012 were recorded for cereals and potatoes. By contrast, the price of olive oil fell for six consecutive years from its relative high in 2006, while output prices for vegetables, fruits and wine remained relatively stable.

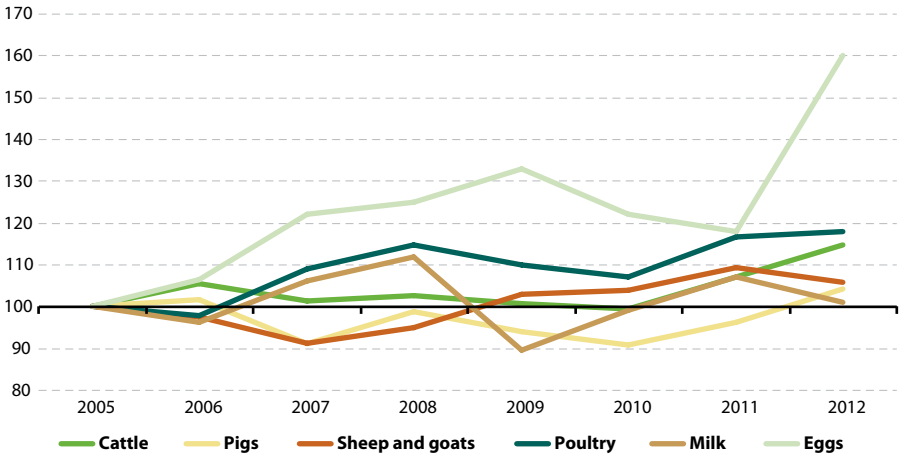
Figure 3.7: Deflated price indices for selected crop outputs, EU-27, 2005–12
(2005 = 100)



Source: Eurostat (online data code: apri_pi05_outa)

Compared to some crops, EU-27 output price fluctuations were relatively small for animal outputs, although the price of milk fell by 19.9 % from 2008 to 2009 and the price of eggs rose by 35.8 % from 2011 to 2012; the spike in the price of eggs could be linked to a shortage of supply. A comparison of EU-27 deflated output prices between 2005 and 2012 reveals overall price increases of 1–6 % for milk, pigs, and sheep and goats, while prices rose faster for cattle (15.0 %) and poultry (18.4 %).

Figure 3.8: Deflated price indices for selected animal outputs, EU-27, 2005–12
(2005 = 100)



Source: Eurostat (online data code: apri_pi05_outa)

Table 3.7 presents information on deflated price indices for crop and animal outputs for the 2008–12 period — thereby including the relative peak in agricultural output prices for 2008, the rapid fall in prices for 2009, and the subsequent rebound (albeit at a more modest pace) during the period 2010–12. Spain (– 12.%) and Portugal (– 7.8 %) were the only EU Member States to report deflated output prices for crops that were lower in 2012 than they had been in 2005; there was no change in the price of crops in Greece. Three other southern Member States — Italy, Cyprus and Malta — as well as Belgium and the Netherlands, reported deflated output prices for crops increasing at a relatively slow pace (a total increase of less than 10 % during the period 2005–12). By contrast, output prices for crops rose by 65.3 % in Hungary and by 54.6 % in the United Kingdom between 2005 and 2012, while the remaining EU Member States saw crop output prices rise within the range of 18–36 %.

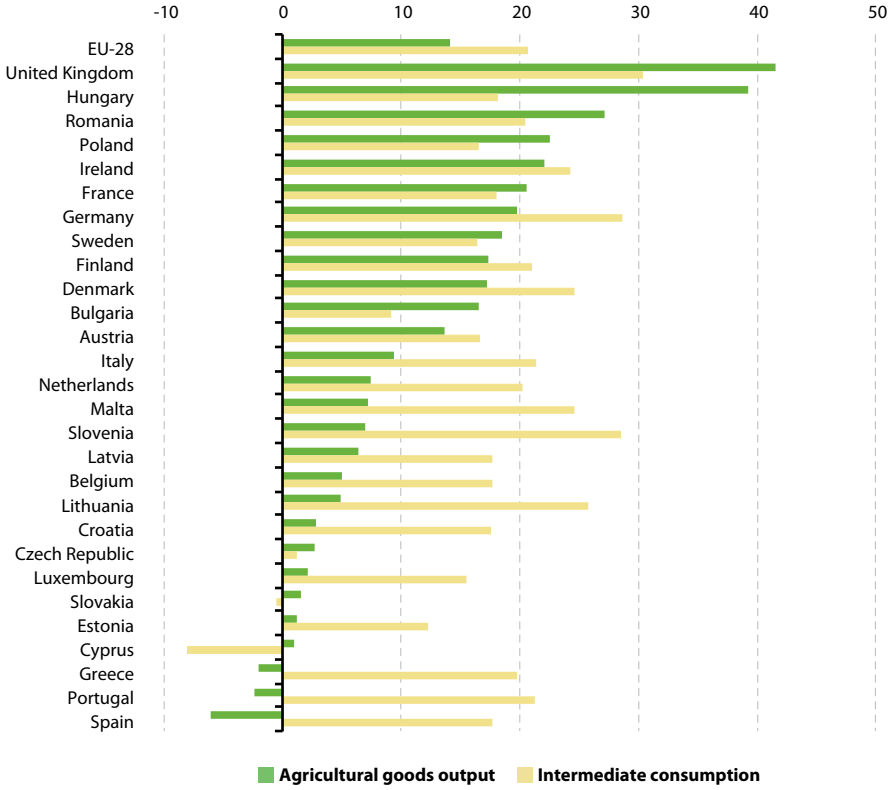
Deflated prices for animal output rose at a relatively fast pace in the United Kingdom (32.4 %), Ireland (20.7 %), Poland (15.3 %), Finland (15.1 %) and Denmark (13.0 %) during the 2005–12 period. The vast majority of EU Member States registered prices for animal output fluctuating within the range of +/- 10 %. Among the 10 EU Member States where prices for animal output fell, the most significant reductions were recorded in Slovakia (– 20.2 %), while Latvia, Estonia, Croatia and the Czech Republic recorded prices falling by 11–14 %.

Table 3.7: Deflated price indices, crop and animal output, 2008–12 (2005 = 100)

	Crop output (1)					Animal output				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
EU-27	**116.9**	**98.6**	**108.7**	**114.9**	**118.5**	**107.0**	**97.7**	**99.5**	**106.4**	**109.7**
Belgium	105.0	91.6	103.2	94.8	109.4	102.7	92.2	93.6	97.9	102.0
Bulgaria	126.3	93.4	104.1	116.4	128.2	101.0	86.2	87.2	94.1	95.3
Czech Republic	137.9	92.7	101.0	125.4	127.0	92.2	77.9	80.4	84.6	86.1
Denmark	136.4	106.5	107.3	126.3	128.8	103.2	89.1	97.9	106.0	113.0
Germany	126.4	97.4	115.6	128.7	135.4	109.9	91.8	100.1	109.4	110.0
Estonia	117.4	86.7	106.9	132.1	134.4	95.1	75.3	86.7	93.2	88.4
Ireland	127.4	113.5	116.6	120.1	133.5	109.4	92.0	104.5	119.8	120.7
Greece	105.6	100.8	113.9	108.5	100.0	98.7	98.0	94.5	93.3	92.9
Spain	94.9	79.5	87.9	81.2	87.9	99.2	95.3	91.9	96.7	103.0
France	124.2	104.6	114.8	126.2	131.3	107.5	97.7	97.9	104.3	108.6
Croatia	107.9	93.8	102.8	106.5	118.1	91.5	86.7	81.6	87.1	87.9
Italy	115.9	100.9	102.4	106.4	109.1	105.3	101.8	99.2	106.2	110.0
Cyprus	125.2	107.5	108.9	104.7	108.3	113.8	101.3	97.9	94.9	92.9
Latvia	118.0	90.6	113.3	133.5	129.4	93.3	70.8	82.0	88.9	88.8
Lithuania	133.2	88.4	109.8	134.2	121.8	102.6	81.9	90.4	98.4	97.1
Luxembourg	104.0	94.1	105.0	111.6	124.1	108.1	86.4	90.1	94.7	93.8
Hungary	122.5	102.5	125.9	145.4	165.3	102.3	93.8	91.2	101.2	106.0
Malta	104.5	111.6	100.1	92.4	102.0	102.8	104.3	102.4	106.1	110.2
Netherlands	105.6	96.7	107.8	105.8	105.1	110.5	93.4	100.8	109.0	110.4
Austria	108.9	98.5	122.9	121.8	124.0	113.1	97.5	98.7	104.9	107.1
Poland	124.8	99.9	121.6	141.2	132.7	101.5	100.8	97.4	107.8	115.3
Portugal	101.9	96.4	103.1	94.6	92.2	104.8	99.9	99.8	101.1	105.7
Romania	133.8	109.3	119.2	131.3	136.1	98.1	105.2	98.9	101.8	108.2
Slovenia	138.6	111.3	112.4	116.8	117.9	106.3	93.1	92.4	100.2	101.6
Slovakia	120.5	81.3	104.9	123.0	129.4	94.6	74.5	74.8	79.6	79.8
Finland	123.9	101.4	104.7	120.9	121.5	107.4	99.0	104.0	111.3	115.1
Sweden	128.2	108.3	124.7	131.3	130.8	117.6	105.0	111.0	111.7	108.9
United Kingdom	141.7	118.5	127.3	148.2	154.6	125.4	125.1	123.0	128.9	132.4

(1) Including fruit and vegetables.
Source: Eurostat (online data code: apri_pi05_outa)

Figure 3.9: Change in deflated price indices for the agricultural industry, 2005–12 ([1])
(%)



([1]) Ranked on agricultural goods output.
Source: Eurostat (online data codes: apri_pi05_ina and apri_pi05_outa)

Figure 3.9 provides a comparison between deflated price indices for intermediate consumption and the output of agricultural goods. Deflated prices for intermediate consumption in the EU-28's agricultural industry rose by 20.7 % between 2005 and 2012, while the output price index for agricultural goods rose by 14.1 % (over the same period). However, there does not appear to be any robust link between the development of these two indices across the EU Member States, despite some countries recording relatively high price increases for both intermediate consumption and the output of agricultural goods (the United Kingdom, Romania and Ireland) and others reporting relatively low

price increases or falling prices for both intermediate consumption and the output of agricultural goods (Croatia, the Czech Republic, Slovakia, Estonia and Cyprus).

Among the crop products shown in Table 3.8 there was a much wider variation in the selling prices of main crop potatoes across the EU Member States than there was for any of the other crops — soft wheat, rape or sunflower. The price of many cereals and oilseeds is linked to commodity markets and traded futures.

There was a wider variation in selling prices for animal products across the EU Member States (see Table 3.9); this was particularly true for chickens (1st choice) and fresh eggs. The ratio between the highest and lowest selling prices was above 8:1 for chickens (Luxembourg with the highest selling price and Portugal the lowest) and 5:1 for fresh eggs (Greece with the highest selling price and the United Kingdom the lowest).

Table 3.8: Selling prices of crop products, 2013
(EUR per 100 kg)

	Soft wheat	Rape	Sunflowers	Main crop potatoes
Belgium	19.87	:	:	14.79
Bulgaria	16.12	35.48	31.05	23.91
Czech Republic	20.36	42.15	40.84	22.36
Denmark	20.50	40.19	:	23.00
Germany	:	:	:	:
Estonia	:	:	:	:
Ireland	:	:	:	:
Greece	21.55	:	40.23	53.75
Spain	:	:	:	:
France	:	:	:	:
Croatia	14.81	34.10	25.56	22.43
Italy	:	:	:	:
Cyprus	:	:	:	28.82
Latvia	18.42	35.37	:	15.81
Lithuania	17.94	34.88	:	17.24
Luxembourg	16.76	34.15	:	45.52
Hungary	16.06	38.25	33.62	27.11
Malta	:	:	:	36.45
Netherlands	19.48	34.25	:	19.62
Austria	12.64	32.73	26.26	25.63
Poland	19.00	35.10	:	15.35
Portugal	20.45	:	36.68	32.84
Romania	19.24	35.53	35.98	40.05
Slovenia	18.10	35.84	:	32.67
Slovakia	16.92	36.98	32.40	26.06
Finland	20.42	41.61	:	23.81
Sweden	19.30	36.53	:	34.73
United Kingdom	21.95	401.79	:	24.96

Source: Eurostat (online data code: apri_ap_crpouta)

Table 3.9: Selling prices of animal products, 2013
(EUR)

	Cows	Pigs (light)	Chickens (live 1st choice)	Raw cows' milk actual fat content (per 100 litres)	Fresh eggs (per 100 items)
	(per 100 kg live weight)				
Belgium	206.78	:	94.91	37.11	4.76
Bulgaria	87.17	132.09	116.78	:	6.42
Czech Republic	119.86	128.68	95.23	:	6.81
Denmark	116.12	109.28	97.88	39.56	9.18
Germany	:	:	:	:	:
Estonia	:	:	:	:	:
Ireland	:	:	:	37.61	8.30
Greece	146.78	209.11	154.63	44.42	18.20
Spain	:	:	:	:	:
France	:	:	:	:	:
Croatia	101.07	133.93	103.85	34.20	10.56
Italy	:	:	:	:	:
Cyprus	171.68	:	:	:	11.02
Latvia	96.39	130.58	:	:	7.16
Lithuania	102.51	130.30	99.47	31.64	6.67
Luxembourg	201.20	:	405.00	36.75	16.5
Hungary	:	134.83	98.33	33.43	5.82
Malta	:	:	131.26	52.19	9.93
Netherlands	140.45	121.68	92.00	41.15	5.23
Austria	135.78	138.76	107.66	37.55	14.15
Poland	:	:	92.23	32.31	5.69
Portugal	196.86	:	49.89	34.78	6.94
Romania	100.25	143.02	113.37	27.16	7.69
Slovenia	116.52	206.01	118.09	32.15	11.04
Slovakia	99.00	135.00	99.85	32.46	7.57
Finland	:	:	:	45.90	7.48
Sweden	:	:	:	42.42	8.67
United Kingdom	:	144.51	:	36.17	3.64

Source: Eurostat (online data code: apri_ap_anouta)

DATA SOURCES AND AVAILABILITY

Economic accounts for agriculture (EAA) are a satellite account of the European system of accounts (ESA 1995). They cover the agricultural products and services produced over the accounting period sold by agricultural units, held in stocks on farms, or used for further processing by agricultural producers. The concepts of the EAA are adapted to the particular nature of the agricultural industry: for example, the EAA includes not only the production of grapes and olives but also the production of wine and olive oil by agricultural producers. It includes information on intra-unit consumption of crop products used in animal feed, as well as output accounted for by own-account production of fixed capital goods and own final consumption of agricultural units.

The EEA comprises a production account, a generation of income account, an entrepreneurial income account and some elements of a capital account. For the production items, EU Member States transmit to Eurostat values at basic prices, as well as their components (values at producer prices, subsidies on products, and taxes on products).

The output of agricultural activity includes output sold (including trade in agricultural goods and services between agricultural units), changes in stocks, output for own final use (own final consumption and own-account gross fixed capital formation), output produced for further processing by agricultural producers, as well as intra-unit consumption of livestock feed products. The output of the agricultural sector is made up of the sum of the output of agricultural products and of the goods and services produced in inseparable non-agricultural secondary activities; animal and crop output are the main product categories of agricultural output.

Eurostat computes three indicators in relation to agricultural income:

- an index of real income of factors in agricultural activity per AWU (indicator A);
- an index of real net agricultural entrepreneurial income, per unpaid AWU (indicator B);
- and the net entrepreneurial income of agriculture (indicator C).

The information presented on agricultural income relates to indicator A (the real income of factors in agriculture per AWU). This indicator corresponds to the real (deflated) net value added at factor cost of agriculture per AWU. Net value added at factor cost is calculated by subtracting from the value of agricultural output at basic prices the value of intermediate consumption, the consumption of fixed capital, and adding the value of (other) subsidies less taxes on production.

Agricultural price statistics provide information on the development of producer (output) prices for agricultural products and purchaser prices for the means of agricultural production (the intermediate consumption of goods and services within the production process). Data on prices are available for single commodities and for larger aggregates in the form of absolute prices and price indices.

The index of producer prices for agricultural products is based on sales of agricultural products, while the input index (for intermediate goods and services) is based on purchases of the means of agricultural production. Prices should be recorded at points which are as close as possible to those of the transactions which the farmer actually undertakes. This means that product prices should be recorded at the first marketing stage so as to best indicate the actual producer prices received by farmers. Similarly the prices paid by farmers for their means of production should be recorded at the last marketing stage, that at which the items arrive on the farm, so as to best indicate the purchase prices paid by farmers. It is assumed, by convention, that the fertilisers and feeding stuffs purchased are used in the same production period and that there are no stocks on farm.

As regards spatial comparisons, the structure of the weights with respect to products and means of production reflect the value of the sales and purchases in each country during the base year (currently 2005=100); the weights therefore differ from one country to another.

Selling prices for a range of agricultural products are likewise recorded at the first marketing stage — often prices from the farmer to the trade (excluding transport). In most cases the selling prices collected relate to a standard quantity of 100 kilograms, while selling prices per 100 litres are used for liquids and prices per 100 items for eggs.

4 Agricultural products

There is a diverse range of natural environments, climates and farming practices across the European Union (EU), reflected in the broad array of food and drink products that are made available for human consumption and animal feed, as well as a range of inputs for non-food processes. Indeed, agricultural products form a major part of the cultural identity of the EU's people and regions.

Statistics on agricultural products may be used to analyse developments within agricultural markets to help distinguish between cycles and changing production patterns. They can also be used to study how markets respond to policy actions. Additional agricultural product data provide supply-side information, furthering the understanding of price developments which are of particular interest to agricultural commodity traders and policy analysts.

4.1 Crop production statistics

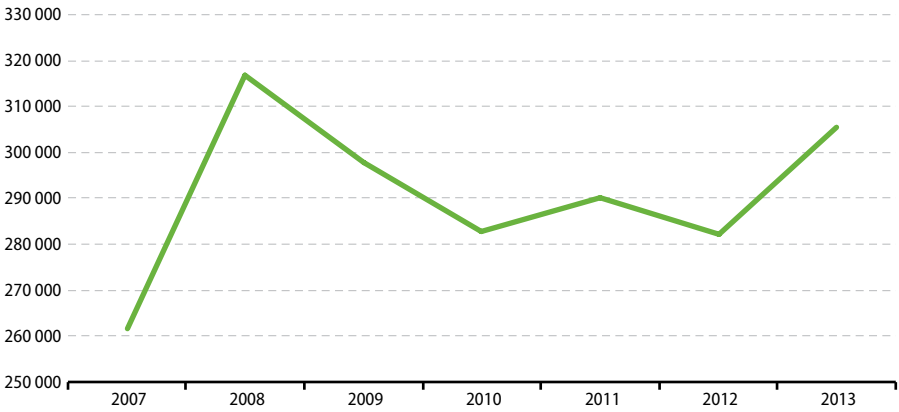
The term 'crop' covers a very broad range of cultivated plants. Within each type of crop there can also be considerable diversity in terms of genetic and phenotypic (physical or biochemical) characteristics. The range and variety of crops grown across the EU reflects their heritable traits as well as the ability of plant breeders to harness those traits to best respond to the myriad of topographic and climatic conditions, pests and diseases.

The statistics on crop production in this chapter are shown at an aggregated level and have been selected from over 100 different crop products for which official statistics are collected.

Cereals

The harvested production of cereals (including rice) in the EU-28 was estimated to be 305.5 million tonnes in 2013. This was the highest production since 2008. This represented about one eighth of global cereal production (based on estimates made by the United Nations' Food and Agriculture Organization), making the EU one of the world's biggest producers of cereals. EU-28 production of cereals in 2013 was an estimated 23.3 million tonnes higher than in 2012 and 11.3 million tonnes (or 3.6 %) less than the peak production level recorded in 2008 (see Figure 4.1).

Figure 4.1: Production of cereals, EU-28, 2007–13
(1 000 tonnes)



Source: Eurostat (online data code: apro_cpp_crop)

Table 4.1: Production of cereals, 2013
(1 000 tonnes)

	Total (incl. rice)	Common wheat	Rye and maslin	Barley	Grain maize and CCM	Triticale
EU-28	305 480	135 848	10 716	59 860	65 631	11 476
Belgium	3 156	1 844	3	391	838	43
Bulgaria	9 006	5 379	28	718	2 700	39
Czech Republic	7 513	4 701	177	1 594	675	214
Denmark	9 051	4 145	527	3 950	76	74
Germany	47 757	24 966	4 689	10 344	4 387	2 609
Estonia	876	406	22	439	0	9
Ireland	2 346	534	0	1 625	0	0
Greece	4 547	470	33	353	2 185	10
Spain	25 149	6 694	382	10 058	4 854	394
France	67 340	36 837	143	10 316	15 053	2 048
Croatia	3 121	928	3	178	1 914	41
Italy	14 933	3 241	43	772	6 503	0
Cyprus	90	18	0	67	0	0
Latvia	1 949	1 435	76	233	0	37
Lithuania	4 459	2 862	96	682	121	451
Luxembourg	173	91	5	42	2	26
Hungary	13 621	5 032	106	1 071	6 725	459
Malta	0	0	0	0	0	0
Netherlands	1 823	1 335	7	208	253	10
Austria	4 590	1 535	249	734	1 639	224
Poland	28 377	9 470	3 790	2 920	4 042	4 284
Portugal	1 221	85	20	30	849	32
Romania	21 358	7 451	26	1 652	11 435	266
Slovenia	468	139	5	69	237	12
Slovakia	3 359	1 574	83	446	1 134	38
Finland	4 148	888	27	1 941	0	0
Sweden	4 994	1 867	142	1 937	11	112
United Kingdom	20 057	11 921	35	7 092	0	45
Switzerland		482	11	171	146	54
Turkey	37 129	17 989	366	7 900	5 900	118
Bosnia and Herzegovina	1 224	265	12	71	799	47

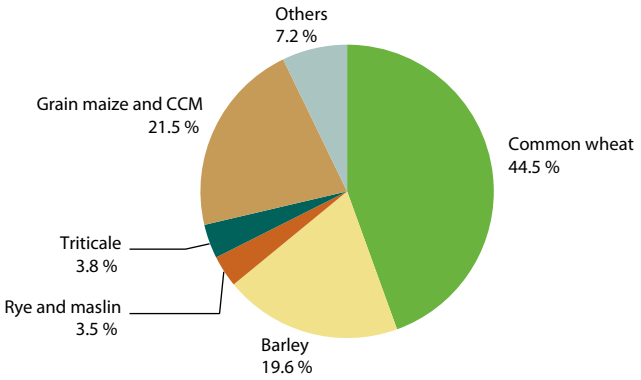
Source: Eurostat (online data code: apro_cpp_crop)

Common wheat and spelt, barley, grain maize and corn cob mix account for a high share (85.6 % in 2013) of the cereals produced in the EU-28 (see Figure 4.2). Between 2012 and 2013, the EU-28 level of production rose for all main types of cereals by approximately 9 %; the increase was only higher for rye and maslin (19.2 %) and triticale (13.4 %) (see Figure 4.3).

France counted for one quarter (22.0 %) of the EU-28's cereal production in 2013. Germany (15.6 %) and Poland (9.3 %) together contributed another quarter of the EU total, while Spain was the next largest cereal producer (accounting for 8.2 % of the EU-28's output). Among the EU Member States, France was the largest producer of common wheat and grain maize and corn cob mix in 2013 (see Figure 4.4). The largest increase in cereal production between 2012 and 2013 was recorded for Romania (following a reduction of 8.4 million tonnes in 2012, when yields were affected by severe drought and/or winterkill).

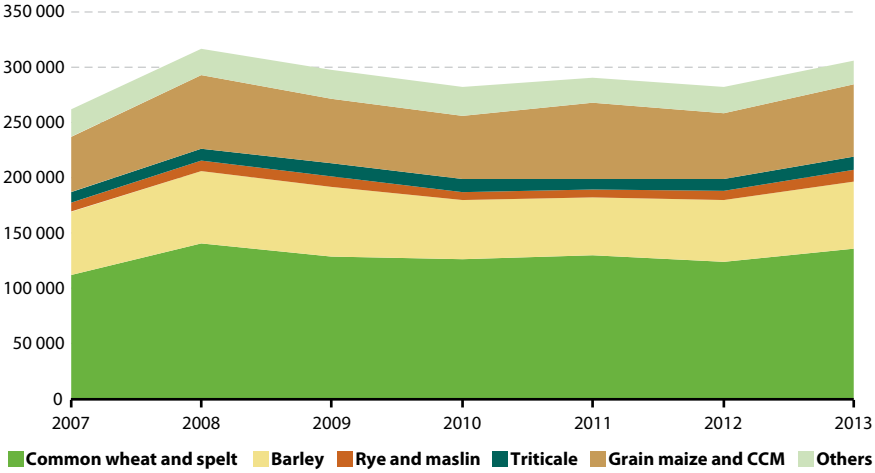
Triticale is a hybrid of wheat (Triticum) and rye (Secale) mainly used for animal feed. Triticale production in the EU-28 amounted to 11.5 million tonnes in 2013 and increased moderately (by 13.4 %) from 2012. Poland produced over a third (37.3 %) of the total EU-28 triticale in 2013.

Figure 4.2: Production of cereals in EU-28, 2013
(% of total production of cereals)



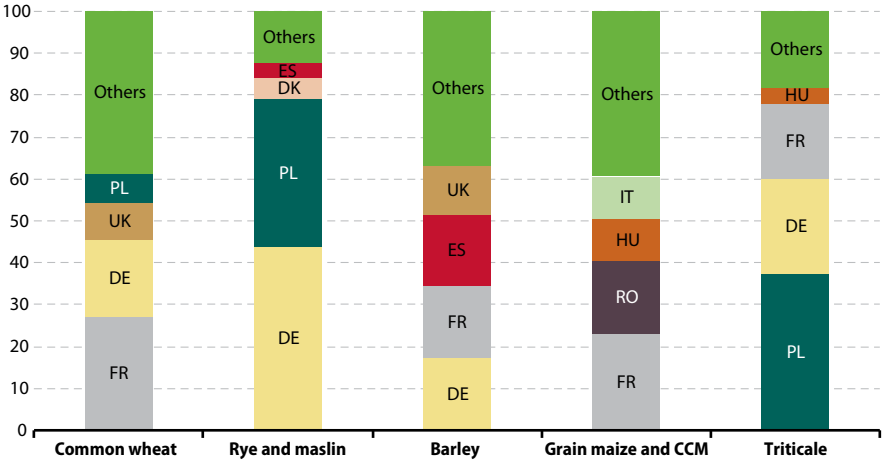
Source: Eurostat (online data code: apro_cpp_crop)

Figure 4.3: Production of cereals, EU-28, 2007–13
(1 000 tonnes)



Source: Eurostat (online data code: apro_cpp_crop)

Figure 4.4: Production of cereals, 2013
(% of EU-28 total)

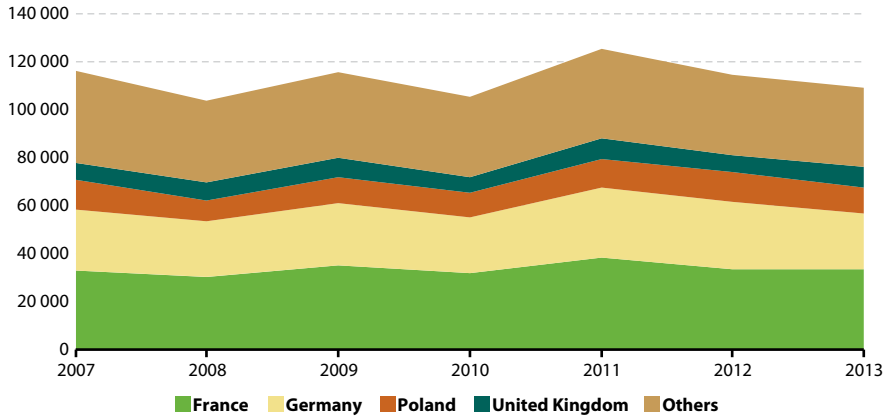


Source: Eurostat (online data code: apro_cpp_crop)

Sugar beet

The EU-28 produced 109.1 million tonnes of sugar beet in 2013 — 4.8 million tonnes less than in 2012 (see Figure 4.5). The production has fluctuated between 102 and 114 million tonnes from 2007 to 2013, except for the relative high of 2011, when output reached 124 million tonnes. A little more than half of the EU-28 sugar beet production in 2013 came from France (30.9 %) and Germany (20.9 %) combined with Poland (10.3 %) and the United Kingdom (7.7 %) being the next largest producers.

Figure 4.5: Production of sugar beet, 2007–13 ([1])
(1 000 tonnes)



([1]) Sum of production in the EU-28 Member States.
Source: Eurostat (online data code: apro_cpp_crop)

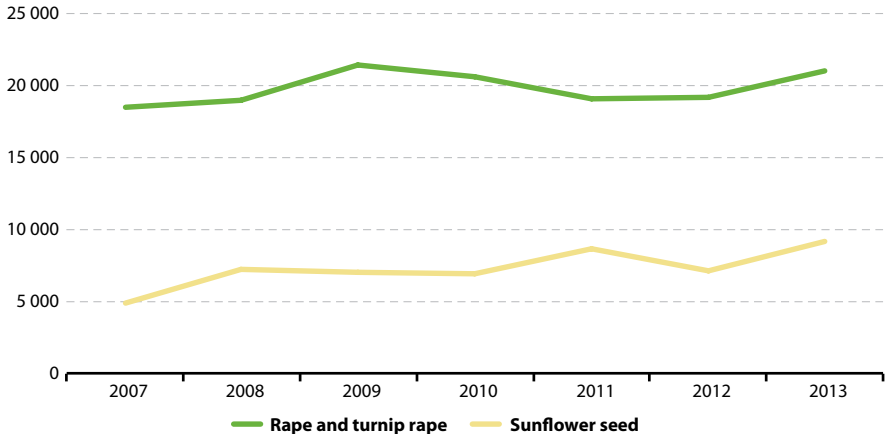
The EU is the world's leading producer of sugar beet, with around 50 % of the global production according to the European Commission's Directorate-General of Agriculture and Rural Development ([1]). However, beet sugar only represents 20 % of the world's sugar production. The remaining 80 % are produced from sugar cane. Most of the EU's sugar beet is grown in the northern part of Europe, where the climate is more suitable. The most competitive producing areas are in northern France, Germany, the United Kingdom and Poland. The EU sugar market is regulated by production quotas, minimum beet prices and trade mechanisms. Following the major reform of the sugar beet market in 2006, which led to simplifications and greater market orientation of the EU's sugar policy, the EU has become a net importer of sugar.

([1]) See http://ec.europa.eu/agriculture/sugar/index_en.htm

Oilseeds

Rape and turnip rape, and sunflower seeds are the main types of oilseeds produced in the EU-28. An estimated 21 million tonnes of rape and turnip rape were produced in 2013, a much larger volume than in 2012 (+9.2 %). By comparison, an estimated 9.1 million tonnes of sunflower seeds were produced across the EU-28 in 2013. This marked a slightly increase (+6.1 %) compared to the most recent peak in production (8.6 million tonnes recorded in 2011) (see Figure 4.6).

Figure 4.6: Production of rape and turnip rape and sunflower seeds, EU-28, 2007–13
(1 000 tonnes)



Source: Eurostat (online data code: apro_cpp_crop)

Vegetables

The EU produces a broad range of fruits and vegetables thanks to its varied climatic and topographic conditions. It is one of the main global producers of tomatoes for example. Open-air production is typical in southern EU Member States and is complemented by all-season greenhouses production which is typical of countries such as the Netherlands or Belgium. The EU-28 produced an estimated 14.9 million tonnes of tomatoes in 2013, of which approximately two thirds came from Italy and Spain.

The EU-28 also produced an estimated 5.1 million tonnes of carrots and 5.7 million tonnes of onions in 2013 (see Table 4.2). Carrot production was relatively high in Poland and the United Kingdom — together these two countries accounted for a little over one quarter (14.3 % and 13.5 % respectively) of EU-28 output in 2013. The production of carrots in these two EU Member States remained relatively stable during the 2000–13 period, at around 0.7–0.8 million tonnes. The Netherlands and Spain are the EU's principal onion producing countries, accounting together for a little over two fifths (44.0 %) of EU-28 output in 2013. Production in the Netherlands rose relatively sharply after 2006.

Fruit

Around 12 million tonnes of apples were produced in the EU-28 in 2013. Apples are produced in almost all EU Member States, although Poland, Italy and France are by far the largest producers. Citrus fruit production in the EU is much more restricted by climatic conditions; the vast majority of citrus fruits are produced in Spain.

Table 4.2: Production of fruit and vegetables, 2013
(1 000 tonnes)

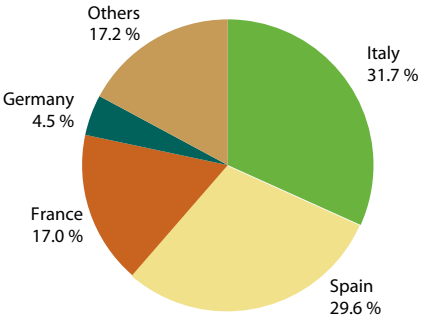
	Tomatoes	Carrots	Onions	Apples	Peaches	Citrus fruits
EU-28	14 923	5 142	5 732	11 986	2 497	11 194
Belgium	250	317	79	229	0	0
Bulgaria	118	5	13	55	37	0
Czech Republic	8	23	33	122	2	0
Denmark	13	97	48	31	0	0
Germany	69	584	493	804	0	0
Estonia	2	15	0	5	0	0
Ireland	5	37	4	15	0	0
Greece	1 040	48	231	185	489	955
Spain	3 777	373	1 215	546	820	6 624
France	776	534	417	2 084	123	43
Croatia	21	4	17	107	3	40
Italy	5 235	492	351	2 217	918	3 121
Cyprus	13	3	8	7	2	121
Latvia	6	14	5	15	0	0
Lithuania	12	52	23	56	0	0
Luxembourg	0	1	0	2	0	0
Hungary	138	63	62	552	42	0
Malta	12	1	8	0	1	1
Netherlands	855	555	1 310	314	0	0
Austria	53	96	144	235	3	0
Poland	762	735	539	3 069	10	0
Portugal	1 187	77	41	287	26	287
Romania	509	131	251	503	18	0
Slovenia	0	0	0	70	0	0
Slovakia	10	7	15	46	2	0
Finland	38	71	23	5	0	0
Sweden	15	113	50	27	0	0
United Kingdom	0	696	354	399	0	0
FYR of Macedonia	131	3	51	111	11	0
Turkey	11 820	570	2 058	3 128	564	3 681
Bosnia and Herzegovina	56	23	40	85	8	0

Source: Eurostat (online data code: apro_cpp_crop)

Grapes

The EU is the largest wine producer in the world, accounting for about two thirds of global production according to the European Commission's Directorate-General of Agriculture and Rural Development ([2]). Of the estimated 25.2 million tonnes of grapes produced in the EU-28 in 2013, the vast majority (91 %) was destined for wine production. Italy, Spain and France are the principal grape producers in the EU (see Figure 4.7).

Figure 4.7: Production of grapes, 2013
(% of EU-28 total)



Total production: 25.2 million tonnes

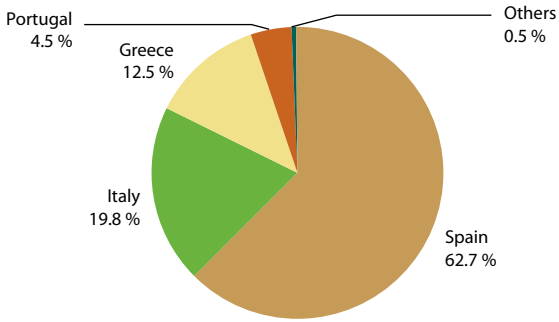
Source: Eurostat (online data code: apro_cpp_crop)

Olives

The EU is also the largest producer of olive oil in the world, accounting for almost three quarters of global production according to the European Commission's Directorate-General of Agriculture and Rural Development ([3]). Olive trees are grown in Spain, Italy, Greece, Portugal, France, Croatia, Cyprus, Slovenia and Malta — although 99.5 % of the olive production in the EU-28 in 2013 was concentrated in the first four of these nine EU Member States (see Figure 4.8).

([2]) See http://ec.europa.eu/agriculture/markets/wine/index_en.htm
([3]) See http://ec.europa.eu/agriculture/olive-oil/index_en.htm

Figure 4.8: Production of olives for olive oil, 2013
(% of EU-28 total)



Total production: 14.0 million tonnes

Source: Eurostat (online data code: apro_cpp_crop)

DATA SOURCES AND AVAILABILITY

Statistics on crop products are obtained by sample surveys, supplemented by administrative data and estimates based on expert observations. The sources vary from one EU Member State to another because of national conditions and statistical practices. National statistical institutes or Ministries of Agriculture are responsible for data collection in accordance with EC Regulations. The finalised data sent to Eurostat are as harmonised as possible. Eurostat is responsible for establishing EU aggregates.

The statistics that are collected on agricultural products relate to more than 100 individual crop products. Information is collected for the area under cultivation (expressed in 1 000 hectares), the quantity harvested (expressed in 1 000 tonnes) and the yield (expressed in 100 kilograms per hectare). For some products, data at a national level may be supplemented by regional statistics at NUTS level 1 or level 2.

4.2 Orchards

In order to complement the yearly production data, Eurostat collects also data on structural aspects of permanent crops every 5 years. The latest data collection for orchards referred to 2012 as reference year. The species surveyed are apple trees, pear trees, apricot trees, peach trees, orange trees, small-citrus fruit trees, lemon trees, olive trees and on voluntary basis vines producing grapes for table use. Olive trees and vines producing table grapes were surveyed for the first time.

Overview

The seven fruit and citrus fruit species assessed in the 2012 Orchard survey covered an area of 1.29 million hectares (ha) in the EU. This is 5.5 % (75 000 ha) less than in the 2007 Orchard survey (which did not include Croatia with about 8 000 ha).

The most common fruit tree in the EU is by far the apple tree. It accounts for more than one third (35 %) of the total surveyed European orchard area. The second and third most commonly cultivated species are oranges and peaches (including nectarines), with shares of nearly 21 % and 15 % respectively. Small citrus fruit trees cover more than 11 % of the total surveyed fruit tree area (Table 4.3). The share of different fruit and citrus fruit species has been fairly stable between 2007 and 2012.

Table 4.3: Area under apple, pear, peach, apricot, orange, lemon and small citrus fruit trees, 2012
(ha)

	Total	Apples	Pears	Peaches	Apricots	Oranges	Lemons	Small citrus fruits
EU-28	1 289 693	449 629	104 613	199 123	67 593	267 255	54 866	146 614
Belgium	14 716	6 398	8 318	:	:	0	0	0
Bulgaria	13 074	5 239	540	4 352	2 943	0	0	0
Czech Republic	13 911	10 487	1 026	761	1 637	0	0	0
Denmark	1 711	1 348	363	0	0	0	0	0
Germany	33 671	31 739	1 933	0	0	0	0	0
Estonia	600	600	0	0	0	0	0	0
Ireland	616	616	:	0	0	0	0	0
Greece	85 290	8 704	3 212	32 229	4 671	27 017	3 682	5 775
Spain	432 612	26 753	21 989	77 164	20 350	149 971	33 303	103 083
France	68 660	36 741	5 025	10 786	12 489	802	793	2 024
Croatia	8 082	4 799	554	1 042	212	0	0	1 475
Italy	285 625	52 251	30 183	62 104	16 591	77 519	15 844	31 133
Cyprus	3 891	528	87	362	180	1 201	369	1 163
Latvia	2 390	2 390	:	0	0	0	0	0
Lithuania	1 440	1 401	39	0	0	0	0	0
Luxembourg	57	39	18	0	0	0	0	0
Hungary	35 503	25 265	2 426	3 976	3 836	0	0	0
Malta	0	0	0	0	0	0	0	0
Netherlands	16 117	7 948	8 169	0	0	0	0	0
Austria	9 504	7 908	535	211	851	0	0	0
Poland	150 992	143 113	5 884	1 315	680	0	0	0
Portugal	35 830	10 095	9 217	2 536	402	10 745	875	1 961
Romania	59 043	51 226	3 217	1 887	2 713	0	0	0
Slovenia	3 352	2 702	213	398	39	0	0	0
Slovakia	3 782	3 782	:	:	:	0	0	0
Finland	667	667	:	0	0	0	0	0
Sweden	1 690	1 494	196	0	0	0	0	0
United Kingdom	6 868	5 396	1 472	0	0	0	0	0

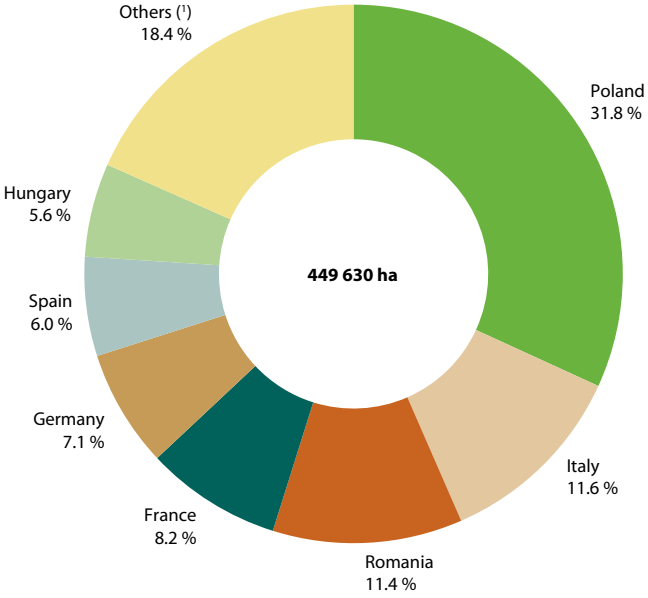
Source: Eurostat (online data code: orch_total)

Spain has the largest surveyed European fruit and citrus fruit tree area (33.5 %), followed by Italy (22.1 %) and Poland (11.7 %), a country which has specialised in apple production.

Apple trees

Apple trees are the most common fruit tree type in the EU covering 450 000 ha (Figure 4.9). Poland is the biggest apple growing country with nearly one third of the EU total apple tree area. Italy and Romania follow with each a share of over 11 %. France (8 %), Germany (7 %), Spain (6 %) and Hungary (nearly 6 %) are also major apple producing countries. Together these seven EU Member States cover more than 80 % of the total EU area under apple trees.

Figure 4.9: Most important countries with area under apple trees, 2012
(% of EU-28 total)

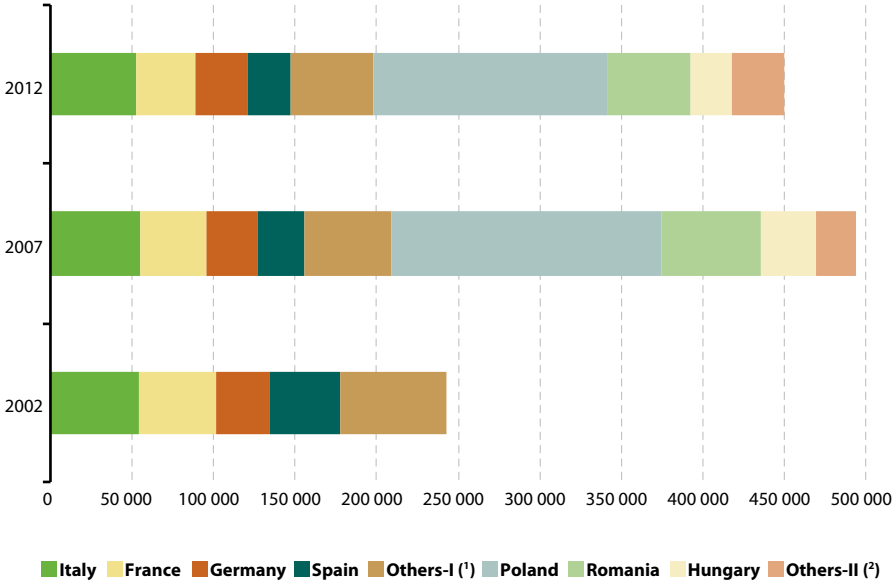


(1) BE, BG, CZ, DK, EE, IE, EL, HR, CY, LT, LU, NL, AT, SI, SK, FI, SE and UK.
Source: Eurostat (online data code: orch_apples2)

Figure 4.10 shows the evolution of the area under apple trees in the EU Member States from 2002 to 2012. With the most recent EU enlargements the apple tree area more than doubled. Poland, Italy and Romania are among the biggest apple producers in the EU.

In most EU Member States the apple production area for the market has been decreasing over time. Between 2007 and 2012 the decrease has been particularly noticeable for the major producers in some of the new EU Member States (Poland, Romania and Hungary), while Spain and France have experienced significant decreases since 2002. On the other hand the apple tree area in the smaller apple producing countries has increased.

Figure 4.10: Evolution of the apple tree area in EU-15/27/28, 2002–12
(ha)



(1) BE, DK, IE, EL, LU, NL, AT, PT, FI, SE and UK.
(2) BG, CZ, EE, HR, CY, LV, LT, MT, SI and SK.
Source: Eurostat (online data code: orch_apples3)

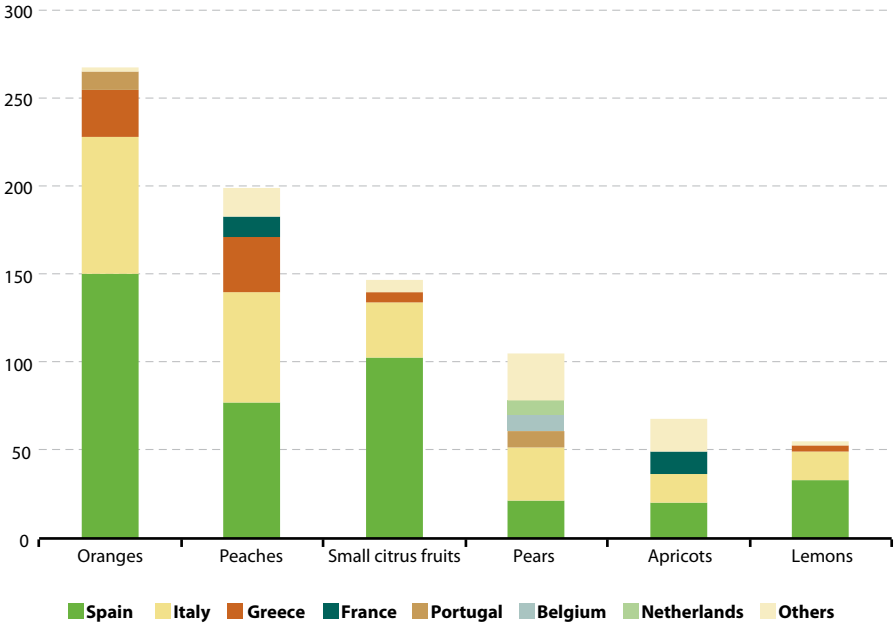
Other fruit trees

Spain, Italy, Greece and Portugal are the EU's largest citrus fruit (oranges, small citrus fruits and lemons) producing countries. After apple and citrus fruit trees, peaches (including nectarines) is the most important fruit tree species in the EU with 200 000 ha. Spain has the largest producing area for peaches followed by Italy and Greece (Figure 4.11).

The area under pear trees covers about 105 000 ha. The pear tree area is distributed more evenly between the Member States due to its suitability for wider climatic conditions. However, even for pear trees Italy and Spain cover together approximately 50 % of the EU total area. Portugal, Belgium and the Netherlands each represent from 8 % to 9 % of the EU total pear tree area.

Apricot trees grew on almost 68 000 ha in 2012. The three most important apricot producing countries in the EU were again Spain (30 %), Italy (nearly 25 %) and France (nearly 19 %).

Figure 4.11: Production area for selected species of fruit trees in 2012
(1 000 ha)

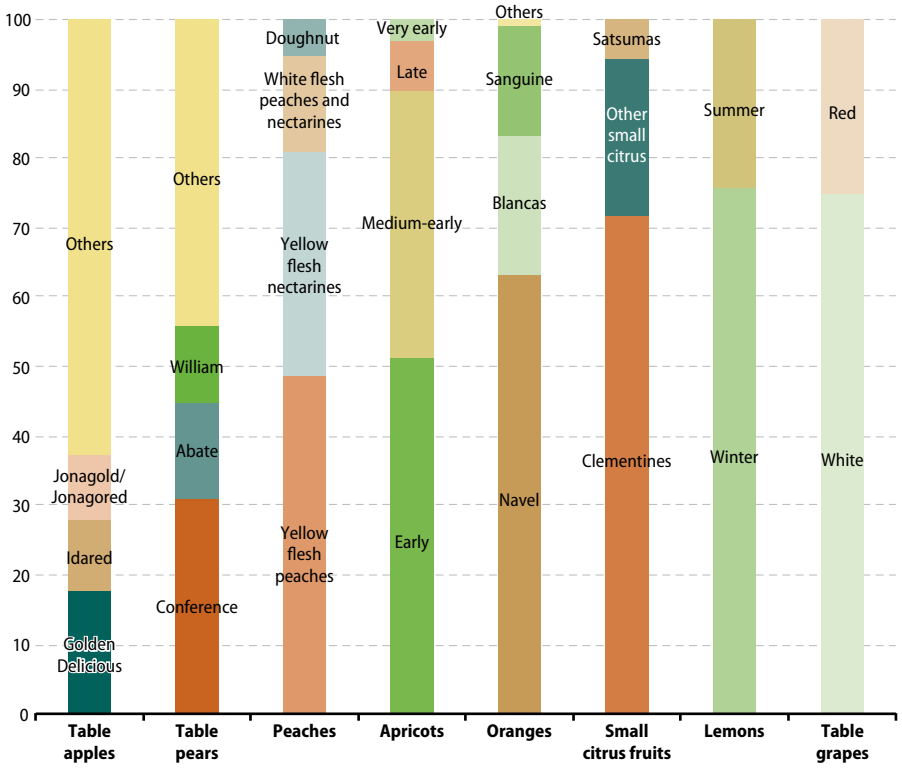


Source: Eurostat (online data code: orch_total)

Main fruit varieties

Figure 4.12 presents the share of the most important varieties or groups of varieties by species. The larger the size of the 'Others' category, the greater is the diversity of the varieties of the corresponding species. Navel oranges account for over half of the oranges (63.5 %), and clementines dominate (71.7 %) the small citrus fruits. High percentages are also recorded for yellow flesh peaches (48.6 %) and conference pears (31.1 %). For apple trees, Golden Delicious is the most important variety group with 17.6 % of the area, followed by Idared (10.3 %) and Jonagold/Jonagored (9.3 %). However, over 60 % of the apple tree area was covered by 'Other' variety groups. For approximately 7 000 ha of the apple tree area the variety group information is not available.

Figure 4.12: Main variety groups by species of fruit trees in 2012

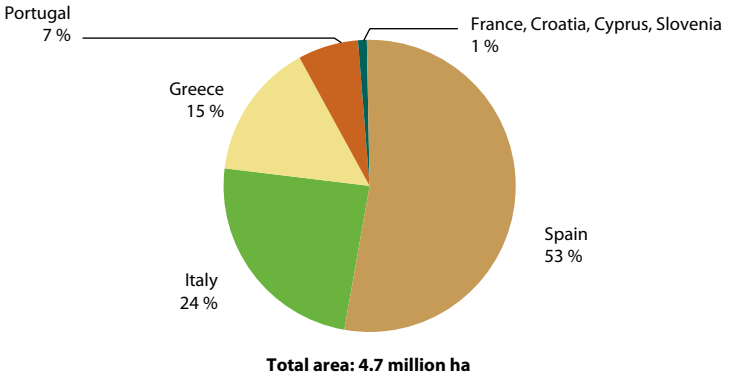


Source: Eurostat (online data code: orch_total)

Olive trees

The area under olive trees accounted for about 4.65 million ha in the EU in 2012. The olive production is concentrated in the Mediterranean area. Eight EU Member States have area under olive trees exceeding 1 000 ha (the threshold for the orchard survey). Spain (53 %) and Italy (24 %) account for over three quarters of the total EU area under olive trees. They are followed by Greece and Portugal with 15 % and 7 % of the total EU area under olive trees. The other olive producing EU Member States (France, Croatia, Cyprus and Slovenia) each hold a small share of the total olive tree area (together about 1 %).

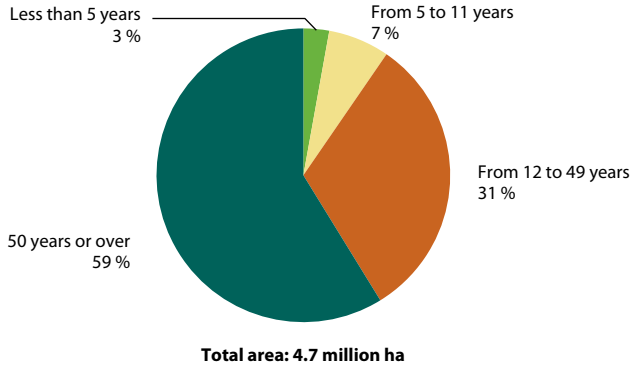
Figure 4.13: Area under olive trees by EU Member States in EU-28, 2012
(% of EU-28 total)



Source: Eurostat (online data code: orch_olives2)

Olive trees are very resistant to drought, diseases and fire. They are known for their longevity. Most of the areas under olive trees in Europe are old. Nearly 2.7 million ha are at least 50 years old, almost 1.5 million ha are 12–49 years old, 313 000 ha are between 5 and 11 years old and about 130 000 ha are less than 5 years old (see Figure 4.14).

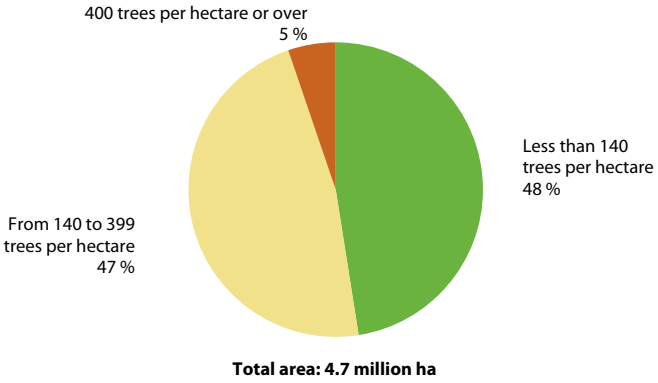
Figure 4.14: Area under olive trees by age classes in EU-28, 2012
(% of EU-28 total)



Source: Eurostat (online data code: orch_olives1)

Figure 4.15 shows the density classes of olive trees. The least densely planted olive groves (less than 140 trees per ha) cover almost half of the total area. Another 47 % is covered by plantations with 140 to 399 trees per ha. Only the remaining 5 % of the area is planted densely with 400 trees per hectare or more.

Figure 4.15: Area under olive trees by density classes in EU-28, 2012
(% of EU-28 total)



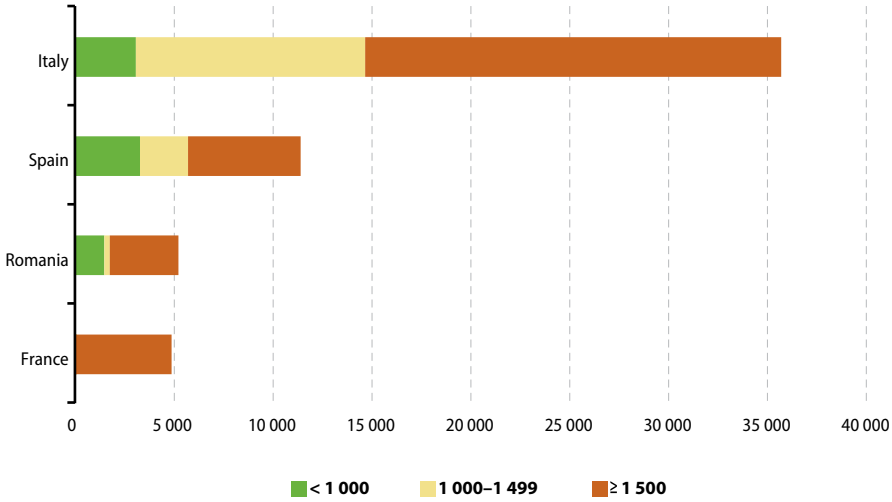
Source: Eurostat (online data code: orch_olives2)

Vines producing table grapes

Data on table grapes are available for four EU Member States, namely Spain, France, Italy and Romania. The most important table grape producer in the EU is Italy with almost 35 700 ha, followed by Spain (about 11 400 ha), Romania (about 5 200 ha) and France (about 4 900 ha).

In all table grape producing countries more than half of the table grape area is densely planted (with more than 150 vines/ha)(Figure 4.16).

Figure 4.16: Area under table grapes in Spain, France, Italy and Romania, 2012
(in ha; density classes: plants/ha)



Source: Eurostat (online data code: orch_grapes2)

DATA SOURCES AND AVAILABILITY

The Orchard domain (orch) contains the results of the structural fruit tree surveys (apples, pears, peaches (including nectarines), apricots, oranges, lemons, small citrus fruits, and since 2012, olives and vines intended for the production of table grapes). In the orchard survey, data on the areas are collected (in hectares) by variety, age and density classes, by country and by NUTS 1 regions. Data are mainly grouped in tables by fruit tree species.

The statistical surveys on orchard area are carried out every five years by the EU Member States in order to determine the production potential of plantations of certain species of fruit trees. These surveys have been carried out since 1977. In accordance with Regulation 1337/2011, the next Orchard survey will be carried out for the reference year 2017.

The survey includes all areas intended to produce for the market even those which are not yet in production. The total survey area deviates from the area of the Member State orchards registered in the annual crop statistics, where only areas in production are covered.

4.3 Livestock and meat

In recent years, the EU has been active in harmonising animal health measures and systems of disease surveillance, diagnosis and control; it has also developed a legal framework for trade in live animals and animal products. In part, this has been in response to consumer concerns regarding public health and food safety aspects of animal health. In this regard, the European Commission established a framework for animal health and welfare measures for the 2007–13 period. In addition, the 2004 revision of the legislation on the hygiene of foodstuffs — known as the 'Hygiene package' — was implemented in the enlarged EU, with the aim of ensuring the hygiene of foodstuffs at all stages of the production process through to sale.

The Single Common Market Organisation (SCMO) for the meat sector establishes common rules and policy instruments to manage the market, to restore levels of consumption of animal products, and to make animal products more competitive worldwide.

Statistics on livestock and meat production (based on the slaughter of animals fit for human consumption) give some indication of supply-side developments and adjustments, which are important to monitor the Common Agricultural Policy (CAP).

Livestock numbers

Since the early 1980s, there has been a steady downward trend in the number of livestock on agricultural holdings across the EU.

In 2013, looking at EU Member States, Germany, Spain, France and the United Kingdom held the largest number of cattle. In Germany and Spain, these are mainly pigs (28.1 and 25.5 million heads respectively), in France bovines (19.1 million heads) and in the United Kingdom sheep (22.6 million heads), as shown in Table 4.4.

Table 4.4: Livestock numbers per EU Member State, 2013
(million head)

	Bovine animals	Pigs	Sheep (1)	Goats (2)
EU-28	103.91	149.98	83.39	10.57
Belgium	2.44	6.35	-	-
Bulgaria	0.59	0.59	1.37	-
Czech Republic	1.33	1.55	-	-
Denmark	1.58	12.40	-	-
Germany	12.69	28.05	1.57	-
Estonia	0.26	0.36	-	-
Ireland	6.31	1.47	3.25	-
Greece	0.65	1.03	9.36	4.39
Spain	5.70	25.49	16.12	2.61
France	19.13	13.43	7.19	1.28
Croatia	0.44	1.11	0.62	-
Italy	6.25	8.56	7.18	0.98
Cyprus	0.06	0.36	-	-
Latvia	0.41	0.37	-	-
Lithuania	0.71	0.75	-	-
Luxembourg	0.20	0.09	-	-
Hungary	0.77	2.94	1.24	-
Malta	0.02	0.05	-	-
Netherlands	4.09	12.01	1.07	-
Austria	1.96	2.90	-	-
Poland	5.59	10.99	-	-
Portugal	1.47	2.01	2.07	-
Romania	2.02	5.18	9.14	1.31
Slovenia	0.46	0.29	-	-
Slovakia	0.47	0.64	-	-
Finland	0.90	1.26	-	-
Sweden	1.44	1.48	0.59	-
United Kingdom	9.68	4.38	22.62	-
Montenegro	0.09	0.02	-	-
Iceland	0.07	0.04	-	-
former Yugoslav Republic of Macedonia	0.24	0.17	-	-
Serbia	0.91	3.14		-
Turkey	14.53	:	-	-
Bosnia and Herzegovine	0.45	0.53	-	-

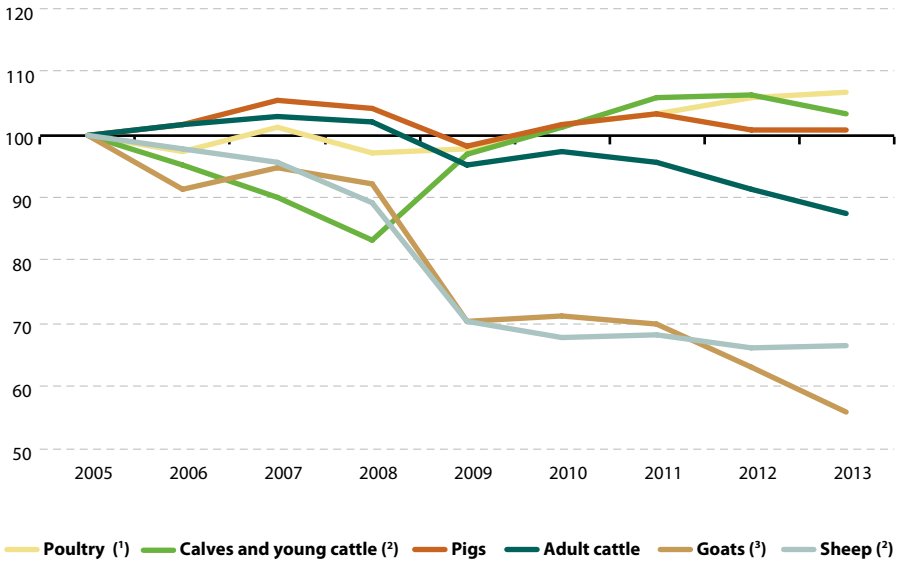
(1) Figures on sheep population are due only by 14 Member States. The EU Aggregate refers only to these countries.
(2) Figures on goat population are due only by 5 Member States. The EU Aggregate refers only to these countries.
Source: Eurostat (online data codes: apro_mt_lscatl, apro_mt_lspig, apro_mt_lssheep and apro_mt_lsgoat)

Meat production

There have been considerable structural changes in EU livestock farming since the 1980s. Smallholders on mixed farms have gradually given way to larger-scale, specialised livestock holdings.

Except for poultry and sheep meat, production of other meat categories (based on available data for the EU-28 Member States) was lower in 2013 than in 2012 (see Figure 4.17): pig meat production for the EU-28 declined slightly by 0.14 % to 21.9 million tonnes, although the production of pig meat fluctuated within a relatively narrow range (+/– 6 %) during the 2005–13 period; bovine meat production declined by 4.0 % compared to 2012, and the production of goat meat fell by an estimated 11.5 % between 2012 and 2013, confirming sharp downward trends in the production of these two types of meat in recent years. By contrast, between 2012 and 2013 poultry and sheep meat production increased by 0.7 % and 0.8 % respectively (see Table 4.5).

Figure 4.17: Production of meat, by type of animal, EU-28, 2005–13
(2005 = 100)



(1) Excluding, Belgium, Estonia, Ireland, the Netherlands, Austria and Slovakia.
(2) Excluding Bulgaria.
(3) Excluding Bulgaria and Romania.
Source: Eurostat (online data code: apro_mt_pann)

Table 4.5: Production of meat, by type of animal, 2013
(1 000 tonnes of carcass weight)

	Bovine animals	Pigs	Sheep	Goats	Poultry (1)
EU-28	7 271.7	21 940.1	710.5	47.5	12 765.0
Belgium	249.9	1 130.6	2.3	0.1	388.1
Bulgaria	5.7	52.1	:	:	94.7
Czech Republic	64.8	234.3	0.2	0.0	148.2
Denmark	125.2	1 589.4	1.6	0.0	160.3
Germany	1 106.0	5 474.0	20.0	0.0	1 456.0
Estonia	7.6	34.6	0.1	0.0	:
Ireland	517.6	239.3	57.5	0.0	:
Greece	50.1	108.6	60.9	24.8	180.5
Spain	580.8	3 431.2	118.3	8.9	1 342.6
France	1 407.9	1 938.8	80.0	6.5	1 695.0
Croatia	47.3	79.8	0.7	:	55.7
Italy	855.3	1 625.5	35.3	1.3	1 223.5
Cyprus	5.2	48.7	3.0	2.3	22.0
Latvia	15.7	26.2	0.2	0.0	26.7
Lithuania	36.8	67.0	0.1	0.0	89.8
Luxembourg	8.0	10.9	0.0	0.0	:
Hungary	22.6	336.7	0.3	0.0	394.5
Malta	1.1	5.9	0.1	0.0	4.1
Netherlands	379.1	1 307.0	12.1	1.7	:
Austria	227.2	528.2	7.7	0.8	:
Poland	339.0	1 684.3	0.6	0.0	1 652.0
Portugal	84.1	345.9	10.0	0.8	291.7
Romania	29.3	308.4	3.2	:	325.6
Slovenia	32.1	19.0	0.1	0.0	57.1
Slovakia	9.5	52.4	0.5	0.0	:
Finland	80.4	194.5	0.9	0.0	111.1
Sweden	135.7	234.1	4.9	0.0	124.8
United Kingdom	847.7	832.9	290.1	0.2	1 662.2
Iceland	3.8	6.3	9.8	0.0	7.8
Serbia	35.5	132.3	0.9	0.0	55.5

(1) Estimated value for the EU-28.
Source: Eurostat (online data code: apro_mt_pann)

In this publication, 'veal' reflects slaughtering of bovine animals younger than one year (calves and young cattle) and 'beef' reflects slaughtering of older bovine animals.

Beef is mainly produced from cattle breeds grown specifically for their meat but can also come from dairy cattle. Male calves from dairy cows are of no use for producing milk and most of these are used for veal production. Just less than two thirds of the bovine meat produced in the EU-28 came from either bulls (34 %) or cows (29 %) in 2013 (see Table 4.6). In many EU Member States this proportion was even higher. However in Ireland and the United Kingdom a majority (62.6 % and 65.8 % respectively) of the beef produced in 2013 came from heifers (over one-year old females that did not calve) and bullocks (over one-year old castrated males).

Germany produced about one quarter (24.9 % or 5.5 million tonnes) of the EU-28's pig meat in 2013, while Spain produced one sixth (15.6 % or 3.4 million tonnes) of the total (see Figure 4.18 overleaf).

France (19.1 %), Germany (16.8 %) and the United Kingdom (13.5 %) made up roughly half (49.4 %) of total EU-28 beef production in 2013. Beef production in each of these countries was lower in 2013 than a year earlier. The rate of decline in France (– 5.2 %) and the United Kingdom (– 4.3 %) was larger than the average rate of decline for the EU-28 (– 4.2 %).

The United Kingdom (38.3 %) and Spain (16.8 %) contributed a bit over half (55.1 %) of total EU-28 sheep and goat meat production in 2013. The production in Spain fell at a relatively rapid pace in 2013.

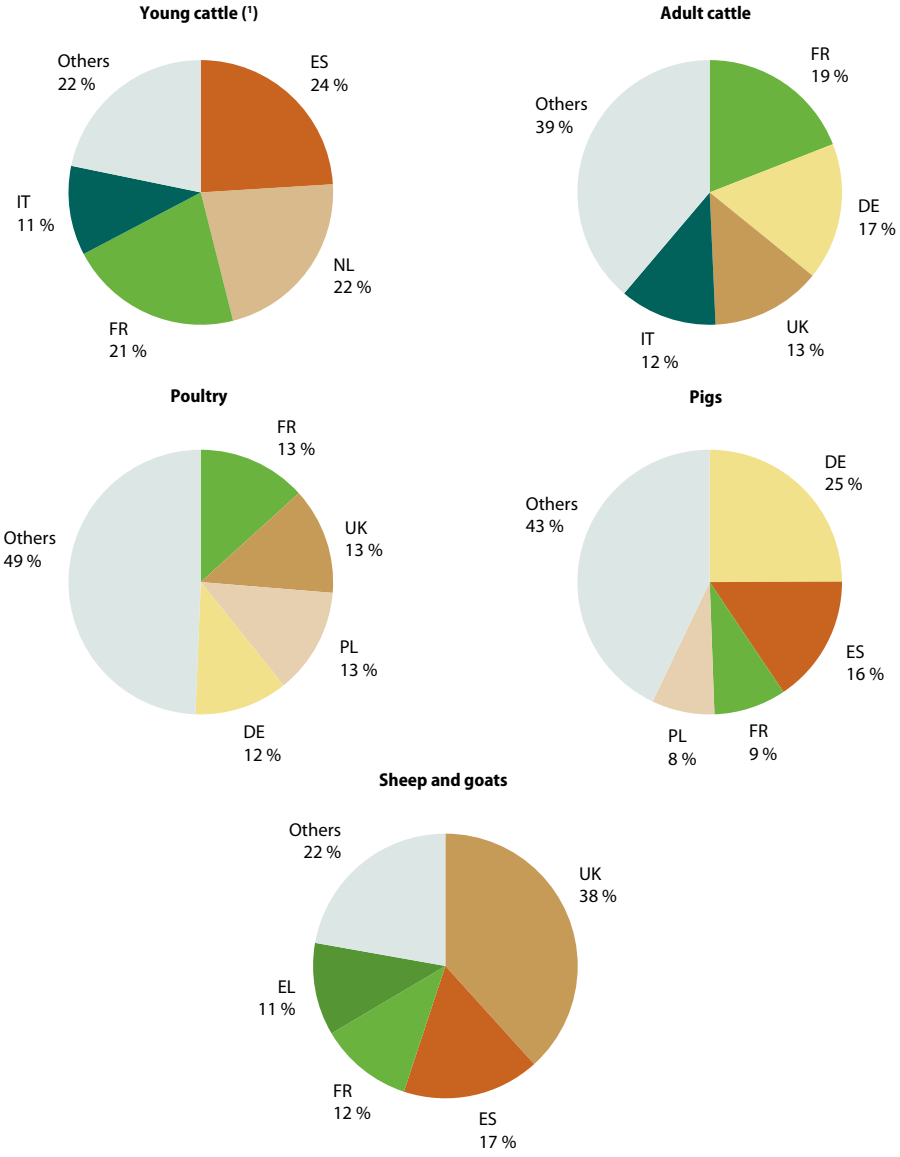
France, the United Kingdom, Poland, and Germany each accounted for 11–13 % of the total production of poultry meat in the EU-28 in 2013. The increase in poultry meat production for the EU-28 in 2013 was driven by an expansion in output in Poland (an increase of 11.8 % on 2012 levels) and, to a lesser extent, the United Kingdom and Italy (both recording increases of 3.2 %). By contrast, there was a slight decline in the production of poultry meat in France (– 1.4 %).

Table 4.6: Production of beef and veal, by type of bovine animals, 2013
(1 000 tonnes of carcass weight)

	Total	Calves and young cattle	Heifers	Cows	Bullocks	Bulls
EU-28	7 271.7	1 008.5	1 033.2	2 140.1	623.9	2 465.9
Belgium	249.9	54.4	2.5	115.9	0.0	77.2
Bulgaria	5.7	0.8	0.7	3.1	:	:
Czech Republic	64.8	0.7	5.3	26.6	0.1	32.2
Denmark	125.2	27.8	11.6	59.5	2.3	24.4
Germany	1 106.0	56.0	139.0	363.0	8.0	541.0
Estonia	7.6	0.1	0.7	4.7	0.1	2.0
Ireland	517.6	0.9	137.9	112.3	186.3	80.3
Greece	50.1	7.8	5.0	7.2	0.9	29.2
Spain	580.8	242.2	68.1	90.1	1.9	178.7
France	1 407.9	214.1	142.2	582.5	69.0	400.2
Croatia	47.3	5.8	5.1	8.1	0.0	28.7
Italy	855.3	110.2	158.7	141.7	3.5	441.2
Cyprus	5.2	0.9	0.5	1.3	0.0	1.8
Latvia	15.7	1.1	2.3	8.5	0.0	3.8
Lithuania	36.8	0.5	4.8	18.1	0.0	13.5
Luxembourg	8.0	0.2	1.4	2.0	0.3	4.1
Hungary	22.6	0.6	1.9	15.5	0.0	4.7
Malta	1.1	0.0	0.1	0.4	0.0	0.7
Netherlands	379.1	222.4	2.8	130.5	0.0	23.3
Austria	227.2	7.1	31.7	64.5	10.4	113.6
Poland	339.0	6.1	41.7	100.2	0.0	191.0
Portugal	84.1	21.5	9.8	17.3	0.6	34.9
Romania	29.3	7.1	1.7	14.6	1.3	4.6
Slovenia	32.1	1.8	3.1	5.6	0.2	21.4
Slovakia	9.5	0.1	0.6	4.8	0.0	4.0
Finland	80.4	0.3	9.6	23.7	0.0	46.8
Sweden	135.7	14.1	16.2	41.9	9.5	54.1
United Kingdom	847.7	4.1	228.2	176.9	329.6	108.8
Iceland	3.8	0.0	0.5	1.4	0.0	1.4
Serbia	35.5	3.2	3.4	4.9	0.0	23.9

Source: Eurostat (online data code: apro_mt_pann)

Figure 4.18: Production of meat, 2013
(% share of EU-28 total)



(1) Including calves.
Source: Eurostat (online data code: apro_mt_pann)

DATA SOURCES AND AVAILABILITY

Livestock and meat statistics are collected by EU Member States under Regulation (EC) No 1165/2008, which covers bovine, pig, sheep and goat livestock; slaughtering statistics on bovine animals, pigs, sheep, goats and poultry; and production forecasts for beef, veal, pig meat, sheep meat and goat meat.

Livestock surveys cover sufficient agricultural holdings to account for at least 95 % of the national livestock population, as determined by the last survey on the structure of agricultural holdings.

Bovine and pig livestock statistics are produced twice a year, with reference to a given day in May/June and a given day in November/December. Those EU Member States whose bovine animal populations are below 1.5 million head or whose pig populations are below 3.0 million head may produce these statistics only once a year, with reference to a given day in November/December.

Sheep livestock statistics are only produced once a year, with reference to a given day in November/December, by those EU Member States whose sheep populations are 500 000 head or above; the same criteria and thresholds apply for statistics on goat populations.

Statistics on the slaughtering of animals in slaughterhouses are produced monthly by each EU Member State, the reference period being the calendar month. Statistics on slaughtering carried out other than in slaughterhouses is produced annually, the reference period being the calendar year.

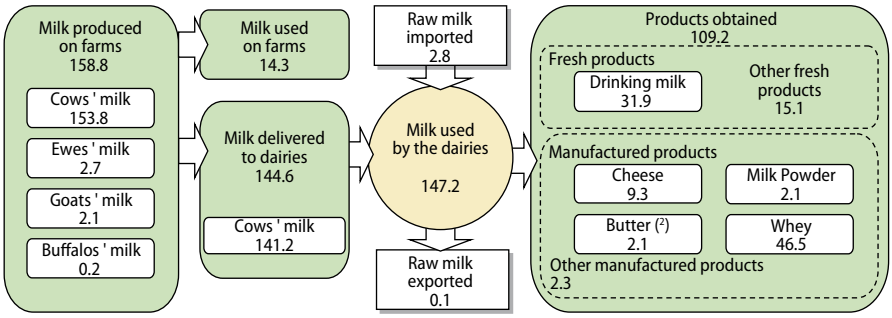
4.4 Milk and milk products

The EU's dairy sector operates within the framework of milk quotas, which were introduced in 1984 to address problems of surplus production but the quota system will end on 1st April 2015. Each EU Member State has two quotas, one for deliveries to dairies and the other for direct sales at farm level. Milk production data are used for signalling imbalances in the market. If serious enough, public intervention (of butter and skimmed milk powder) and/or private storage are triggered. When national quotas are overrun, punitive 'super-levies' are recovered from the concerned EU Member State.

Milk production

Farms across the EU-28 produced approximately 158.8 million tonnes of milk in 2013, of which 153.8 million tonnes (or 96.8 %) were cows' milk; milk from ewes, goats and buffalos represent 3.2 % of the total production. The majority of the milk produced on farms was delivered to dairies and the remaining amount was used on the farms (see Figure 4.19). The figures presented in this subchapter exclude information for Malta (which is generally confidential).

Figure 4.19: Production and use of milk, EU-28, 2013 (1)
(million tonnes)



(1) Estimates; excluding Malta; only flows of raw milk are displayed; changes in stocks are not recorded.
(2) Includes other yellow fat dairy products.
Source: Eurostat (online data codes: apro_mk_pobta and apro_mk_farm)

Between 2012 and 2013 the production of cows' milk on farms in the EU-28 increased by almost 1.7 million tonnes. The EU-28's dairy herd of 23.5 million cows in 2013 had an estimated average yield of 6 553 kg per head (see Table 4.7). The quantity of dairy in the EU-28 rose by 1.1 %, while the number of dairy cows increased by 1.6 %.

Table 4.7: Production of cows' milk on farms, 2012 and 2013

	Cows' milk production on farms (1 000 tonnes)		Number of dairy cows (1 000 head)		Apparent yield (kg/head)	
	2012	2013	2012	2013	2012	2013
EU-28	152 123	153 796	23 105	23 468	6 584	6 553
Belgium	3 116	3 528	509	510	6 118	6 924
Bulgaria	1 093	1 149	294	313	3 712	3 668
Czech Republic	2 815	2 849	367	375	7 668	7 592
Denmark	4 916	5 082	579	567	8 490	8 963
Germany	30 672	31 324	4 190	4 268	7 319	7 340
Estonia	721	772	97	98	7 445	7 882
Ireland	5 399	5 601	1 060	1 082	5 092	5 174
Greece	766	731	132	130	5 786	5 633
Spain	6 502	6 559	827	857	7 861	7 652
France	24 718	24 426	3 644	3 697	6 783	6 607
Croatia	659	588	181	168	3 651	3 500
Italy	11 500	11 281	2 009	2 075	5 724	5 438
Cyprus	154	163	24	25	6 353	6 651
Latvia	871	912	165	165	5 290	5 527
Lithuania	1 775	1 720	331	316	5 361	5 447
Luxembourg	289	296	45	48	6 431	6 129
Hungary	1 813	1 773	256	244	7 081	7 265
Malta	:	41	6	6	:	6 464
Netherlands	11 881	12 408	1 541	1 597	7 710	7 769
Austria	3 382	3 393	523	530	6 462	6 407
Poland	12 668	12 718	2 346	2 299	5 400	5 532
Portugal	1 938	1 848	237	231	8 193	8 005
Romania	3 881	3 966	1 163	1 169	3 338	3 393
Slovenia	621	596	:	110	:	5 435
Slovakia	959	934	150	145	6 405	6 446
Finland	2 297	2 328	280	282	8 206	8 254
Sweden	2 861	2 870	346	346	8 281	8 292
United Kingdom	13 857	13 943	1 802	1 817	7 690	7 674
Turkey	15 978	16 655	:	:	:	:

Source: Eurostat (online data codes: apro_mk_farm and apro_mt_lscatl)

Average yields of milk per cow varied considerably between regions of the EU Member States in 2013. The apparent yield was highest — between 8 500 kg and 9 800 kg per cow per year — in the most productive regions of Portugal, Denmark, Germany and Finland. By contrast, the apparent yield was relatively low — between 3 500 kg and 3 900 kg per head — in the most productive regions of Romania and Bulgaria, where milk production was typically less specialised.

Table 4.8: Regional production of cows' milk on farms, by apparent yield, 2013 ([1])

	National region with the highest level of apparent yield for cows' milk	NUTS 2 region	Production of cows' milk on farms		Number of dairy cows (1 000 head)	Apparent yield (kg/head)
			Regional total (1 000 tonnes)	Share of national total (%)		
Belgium	Prov. Antwerpen	BE21	612.6	17.6	75.3	8 134.4
Bulgaria	Yugoiztochen	BG34	205.0	17.8	52.2	3 927.2
Czech Republic	Moravskoslezsko	CZ08	168.7	5.9	20.9	8 088.8
Denmark	Midtjylland	DK04	1 532.7	30.2	167.0	9 177.8
Germany	Brandenburg ([2])	DE4	1 384.9	4.4	162.6	8 516.7
Ireland	Southern and Eastern	IE02	4 473.8	79.9	860.7	5 197.8
Greece	Thessalia	EL14	92.9	12.7	13.0	7 146.2
Spain	Cantabria	ES13	411.8	6.2	65.7	6 269.1
France	Centre (FR)	FR24	462.2	1.9	63.0	7 336.5
Croatia	Sredisnja i Istocna (Panonska) (HR) ([3])	HR02	656.0	91.5	90.1	7 280.8
Italy	Emilia-Romagna	ITH5	2 405.6	21.3	303.3	7 931.5
Hungary	Közép-Dunántúl	HU21	252.5	14.2	31.0	8 145.6
Netherlands	Utrecht	NL31	660.0	5.4	86.0	7 674.4
Austria	Vorarlberg	AT34	166.1	4.9	24.2	6 856.6
Poland	Lubuskie	PL43	111.0	0.9	16.8	6 595.4
Portugal	Alentejo	PT18	234.7	12.7	23.8	9 856.0
Romania	Nord-Vest	RO11	763.0	19.2	218.1	3 498.4
Slovenia	Zahodna Slovenija	SI02	206.0	34.6	36.0	5 721.6
Slovakia	Východné Slovensko	SK04	163.9	17.6	30.8	5 319.7
Finland	Pohjois- ja Itä-Suomi	FI1D	1 282.6	55.1	151.7	8 455.8
Sweden	Västsverige	SE23	708.5	24.7	85.0	8 332.4
United Kingdom	North East (England) ([2])	UKC	107.0	0.8	14.0	7 642.9

([1]) EE, CY, LV, LT, LU and MT: no regional breakdown.
([2]) NUTS level 1.
([3]) NUTS 2007.
Source: Eurostat (online data codes: agr_r_milkpr and agr_r_animal)

The diversity of landscapes and climatic conditions within some of the individual EU Member States often helps explain regional specialisations as regards dairy farming — pasture is generally grown in lowland areas with a temperate climate. The regions with the highest milk yields within each country are shown in Table 4.8. Note that some regions with high apparent yields accounted for relatively low shares of national cows' milk production: the Centre region of France, Lubuskie in Poland and the North East of England each reported regional production of cows' milk on farms accounting for no more than 0.8 % of the national total in 2013.

Cows' milk production on farms in 2013 was highest (across NUTS 2 regions of the EU) in Bayern (Germany), Bretagne (France) and Southern and Eastern Ireland, reaching 7.9 million, 5.3 million and 4.5 million tonnes respectively (see Table 4.9). Bayern (Germany) (with 1 218 thousand head), Southern and Eastern Ireland (with 860 thousand head), Bretagne (France) (with 748 thousand head), Mazowieckie (Poland) (with 496 thousand head) and Lombardia (Italy) (458 thousand head) recorded the highest number of dairy cows in 2013 — note that each NUTS 2 region has a different land area and that the count of animals is influenced to some degree by the size of each region, as well as the propensity of certain regions to specialise in dairy farming. Note also that the data for Germany and the United Kingdom is only available for NUTS 1 regions (which cover larger areas of land).

Table 4.9: Regional production of cows' milk on farms, by level of production, 2013 ([1])

	National region with the highest level of cows' milk production	NUTS 2 region	Production of cows' milk on farms		Number of dairy cows 1 000 head)	Apparent yield (kg/head)
			Regional total (1 000 tonnes)	Share of national total (%)		
Belgium	Prov. West-Vlaanderen	BE25	667.5	19.2	90.5	7 374.3
Bulgaria	Yuzhen tsentralen	BG42	335.0	29.2	109.2	3 067.8
Czech Republic	Jihovýchod	CZ06	664.2	23.3	85.8	7 741.1
Denmark	Syddanmark	DK03	2 060.4	40.5	235.0	8 767.7
Germany	Bayern ([2])	DE2	7 918.3	25.3	1 218.1	6 500.5
Ireland	Southern and Eastern	IE02	4 473.8	79.9	860.7	5 197.8
Greece	Kentriki Makedonia	EL12	292.8	40.1	65.7	4 456.6
Spain	Galicia	ES11	2 584.9	38.8	368.9	7 006.7
France	Bretagne	FR52	5 297.1	21.7	748.0	7 081.7
Croatia	Sredisnja i Istocna (Panonska) (HR) ([3])	HR02	656.0	91.5	90.1	7 280.8
Italy	Lombardia	ITC4	4 194.2	37.2	458.3	9 152.3
Hungary	Észak-Alföld	HU32	412.5	23.3	60.0	6 875.3
Netherlands	Friesland (NL)	NL12	2 187.0	17.9	286.0	7 646.9
Austria	Oberösterreich	AT31	1 074.7	31.7	167.7	6 408.7
Poland	Mazowieckie	PL12	2 738.0	21.5	496.9	5 510.6
Portugal	Norte	PT11	704.6	38.1	79.6	8 848.9
Romania	Nord-Est	RO21	959.0	24.2	284.3	3 373.2
Slovenia	Vzhodna Slovenija	SI01	389.5	65.4	73.6	5 294.5
Slovakia	Západné Slovensko	SK02	500.3	53.6	66.2	7 558.5
Finland	Pohjois- ja Itä-Suomi	FI1D	1 282.6	55.1	151.7	8 455.8
Sweden	Småland med öarna	SE21	843.4	29.4	100.0	8 437.0
United Kingdom	South West (England) ([2])	UKK	3 315.0	23.8	433.0	7 655.9

([1]) EE, CY, LV, LT, LU and MT: no regional breakdown.
([2]) NUTS level 1.
([3]) NUTS 2007.
Source: Eurostat (online data codes: agr_r_milkpr and agr_r_animal)

With the milk delivery quota for 2013/12 being set at 152.6 million tonnes for the EU-28, the estimated 141.2 million tonnes of cow's milk collected by dairies in 2013 were well under quota. The milk delivery quota for the EU-28 was raised by another 0.8 % for 2012/13.

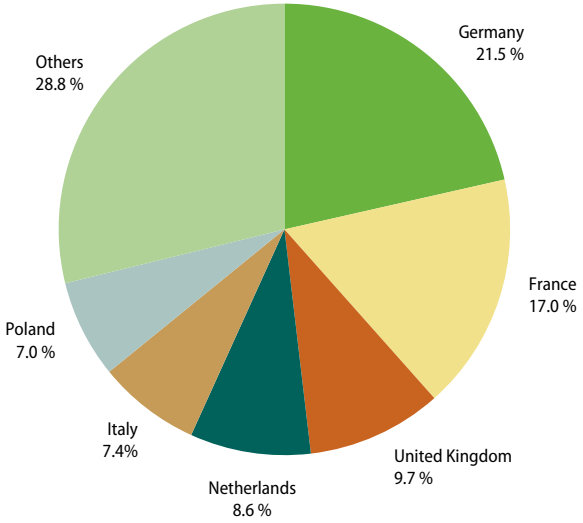
Table 4.10: Collection of milk by dairies, 2011–13
(1 000 tonnes)

	Cows' milk collection			Milk collected from other animals		
	2011	2012	2013	2011	2012	2013
EU-28	139 594	140 115	141 243	3 184	3 079	3 057
Belgium	3 101	3 072	3 474	9	10	9
Bulgaria	549	514	511	31	35	35
Czech Republic	2 366	2 429	2 358	0	0	0
Denmark	4 800	4 927	5 026	0	0	0
Germany	29 764	29 703	30 301	:	13	13
Estonia	642	665	706	0	0	0
Ireland	5 536	5 379	5 581	:	0	0
Greece	639	637	607	651	611	643
Spain	5 838	6 089	5 949	684	666	664
France	24 698	24 253	23 991	819	777	731
Croatia	626	602	504	7	7	6
Italy	10 480	10 500	10 397	636	627	606
Cyprus	153	154	157	40	38	35
Latvia	662	718	736	0	0	0
Lithuania	1 317	1 360	1 339	0	0	0
Luxembourg	281	278	287	:	:	0
Hungary	1 308	1 398	1 364	1	1	1
Malta	:	:	41	0	0	0
Netherlands	11 642	11 675	12 213	190	213	227
Austria	2 896	2 964	2 933	16	17	16
Poland	9 309	9 858	9 922	1	2	2
Portugal	1 842	1 861	1 777	35	37	37
Romania	897	888	882	19	22	27
Slovenia	526	535	517	0	0	0
Slovakia	812	851	827	5	5	6
Finland	2 255	2 254	2 287	0	0	0
Sweden	2 850	2 861	2 870	0	0	0
United Kingdom	13 805	13 591	13 687	0	0	0
Switzerland	3 446	3 444	3 400	:	0	:
Montenegro	:	23	25	:	:	0
Turkey	:	7 933	7 939	:	73	84

Source: Eurostat (online data code: apro_mk_pobta)

Just over one fifth (21.5 %) of all the cows' milk collected by the EU-28's dairies in 2013 came from Germany, while slightly more than a sixth of the total (17.0 %) originated from dairies in France (see Figure 4.20). Dairies collected relatively little milk from other animals (sheep, goats and buffalos) in most of the EU Member States. However, in Greece the volume of milk collected from other species (643 thousand tonnes) was higher than the level of milk collected from cows (607 thousand tonnes). Italy, Spain and France collected quantities of milk from other animals that were similar to Greece, but these volumes were dwarfed by the respective quantities of cows' milk that their dairies collected (see Table 4.10).

Figure 4.20: Collection of cows' milk by dairies, 2013
(% share of EU-28 total, based on tonnes)



Source: Eurostat (online data code: apro_mk_pobta)

Milk products

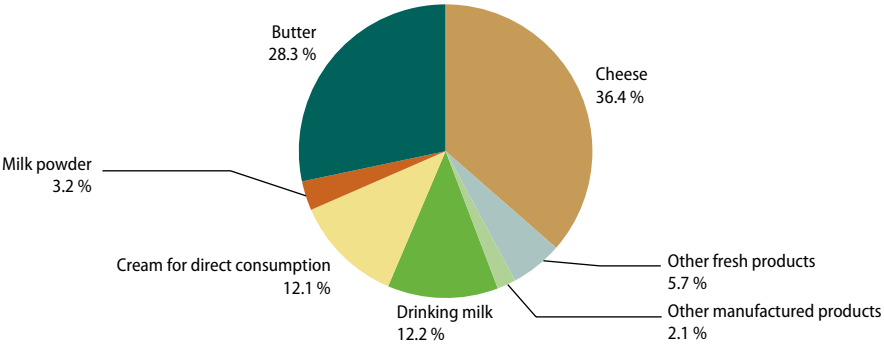
The milk delivered to dairies is converted into a number of fresh products and manufactured dairy products. Some 68.2 million tonnes of raw milk were used to produce 9.3 million tonnes of cheese in the EU-28 in 2013, while 31.5 million tonnes of raw milk were turned into a similar amount of drinking milk. 19.3 million tonnes of raw milk were converted into 2.1 million tonnes of milk powder and 41.0 million tonnes of whole milk were used to produce an estimated 2.1 million tonnes of butter as well as associated skimmed milk and buttermilk. This explains why the amount of 'whole milk' used for producing butter was higher than the 'total' milk used.

Table 4.11: Utilisation of milk by dairies, EU-28, 2013 (1)
(million tonnes)

	Utilisation of milk		Products obtained
	Total (2)	of which whole milk	
Drinking milk	31.5	17.7	31.9
Cream for direct consumption	2.7	17.5	2.6
Milk powder	19.3	4.7	2.1
Cheese	68.2	52.9	9.3
Butter	2.6	41.0	2.1

(1) Estimates, excluding Luxembourg and Malta.
(2) Sum of utilisation of skimmed milk and buttermilk and whole milk.
Source: Eurostat (online data code: apro_mk_pobta)

Figure 4.21: Utilisation of whole milk, EU-28, 2013 (1)
(%)



(1) Estimates, excluding Luxembourg and Malta.
Source: Eurostat (online data code: apro_mk_pobta)

Just over one fifth (21.9 %) of the estimated 31.9 million tonnes of drinking milk produced in the EU-28 in 2013 came from the United Kingdom, despite this Member State accounting for only about one tenth of the milk produced in the EU-28. This relative specialisation was also observed for other dairy products: for example, Germany, France and Italy accounted for almost three fifths (56.9 %) of the 9.3 million tonnes of cheese produced across the EU-28 in 2013.

Table 4.12: Dairy products obtained from milk, 2013
(1 000 tonnes)

	Drinking milk	Cream for direct consumption	Milk powder	Butter	Cheese
EU-28	31 880	2 587	2 090	2 137	9 274
Belgium	747	198	165	53	79
Bulgaria	71	2	0	1	68
Czech Republic	620	47	31	29	118
Denmark	492	56	138	135	325
Germany	5 132	550	530	473	2 182
Estonia	88	32	2	4	44
Ireland	494	23	98	202	183
Greece	441	17	:	:	187
Spain	3 662	129	24	36	315
France	3 630	420	353	398	1 937
Croatia	294	27	:	5	33
Italy	2 563	118	:	98	1 158
Cyprus	71	4	0	0	20
Latvia	61	36	:	7	33
Lithuania	96	8	23	13	113
Luxembourg	:	:	0	:	:
Hungary	399	5	:	9	68
Malta	:	:	:	:	:
Netherlands	508	9	297	199	793
Austria	788	70	5	34	158
Poland	1 616	245	137	161	732
Portugal	834	19	15	26	70
Romania	219	54	2	10	70
Slovenia	153	13	:	2	16
Slovakia	320	32	5	9	33
Finland	735	65	:	53	102
Sweden	864	104	80	35	89
United Kingdom	6 981	304	116	145	349
Switzerland	480	90	90	47	183
Turkey	1 323	29	0	0	599

Source: Eurostat (online data code: apro_mk_pobta)

DATA SOURCES AND AVAILABILITY

Milk and milk product statistics are collected under Decision 97/80/EC, implementing Directive 96/16/EC. They cover farm production and the utilisation of milk, as well as the collection and production activity of dairies.

Due to the small number of dairy enterprises, national data are often subject to statistical confidentiality. Thus, providing EU totals in this context is a challenge and some of the information presented in the analysis is based on partial data for the Member States (which may exclude several countries); each exception is clearly footnoted under the tables and figures presented. On the one hand, statistics from these few enterprises provide early estimates on trends. On the other, a complete overview of the dairy sector requires detailed information from farms and this means that the final figures on milk production are only available at an EU level about one year after the reference year.

Dairy products are recorded in terms of weight. It is thus difficult to compare the various products (for example, fresh milk and milk powder). The volume of whole or skimmed milk used in the dairy processes provides more comparable figures. In such a system, some volume of used skimmed milk may acquire negative values. For instance, production of cream uses whole milk and generates skimmed milk — the production of cream is thereby expressed in relation to the quantity of used whole milk and a negative quantity of skimmed milk. Whether this skimmed milk is then used by another process or kept as such, it will be recorded as a positive quantity of used skimmed milk.

Agriculture and environment

5

5.1 Gross Nutrient Balance

The Gross Nutrient Balance provides an insight into the links between the use of agricultural nutrients, their losses to the environment, and the sustainable use of soil nutrients resources.

It consists of the Gross Nitrogen Balance and the Gross Phosphorus Balance and is intended to be an indicator of the potential threat of surplus or deficit of two important soil and plant nutrients in agricultural land. It shows the link between agricultural activities and the environmental impact, identifying the factors determining the nutrients surplus or deficit and the trends over time.

Nitrogen (N) and Phosphorus (P) are key elements for plants to grow. Their presence or absence in soils can be an indicator of land use intensity and soil quality. Intensive farming can have a double-edged impact: excessive fertiliser application can cause pollution of the environment, whereas insufficient fertiliser to replace nitrogen and phosphorus lost through intensive cropping can lead to soil degradation and loss of fertility. Furthermore phosphorus is a limited resource of increasing concern in Europe. As a result the EU is considering strategic action to use phosphorus more sustainably, for example by improving application techniques and recycling from organic sources such as manure, sewage sludge and compost.

A persistent surplus of nutrients indicates potential environmental problems, such as ammonia emissions (contributing to acidification, eutrophication and atmospheric particulate pollution), nitrous oxide emissions (a potent greenhouse gas), or nitrogen and phosphorus leaching (resulting in pollution of drinking water and eutrophication of surface waters). A persistent deficit in nutrients indicates the risk of a decline in soil fertility.

The Gross Nutrient Balance, i.e. the estimated nutrient surplus, can only indicate the total potential risk to the environment (air, water and soil), as the actual risk depends on many factors including climate conditions, soil type and soil characteristics, soil saturation, and management practices such as drainage, tillage, irrigation, etc.

The input side of the balance includes all nitrogen and phosphorus supplied to the soil. The output side of the balance presents the nutrient uptake by harvested (and grazed) crops and fodder and crop residues removed from the field, i.e. the agricultural production from the soil. Sustainability could be defined as preserving and/or improving the level of production without degrading the natural resources. The harvest and grazing of crops and fodder means that nitrogen and phosphorus are removed from the soil. In order to sustain soil fertility, this removal of nutrients in principle should be compensated by supplying the same amount of nitrogen and phosphorus. Fertilisers and manure are therefore necessary to supply the crops with the nutrients they need for growing.

However, there are certain complications. Not all of the nutrients in fertilisers and manure reach the plant; a part of the nitrogen is lost due to volatilisation in animal housing, storage and with the application to the land. Organic N in manure needs to be mineralised first before it is available to the plant, which means that part of the nitrogen does not become available to the plant in the year when it is applied. Yield and therefore also the uptake of nutrients by crops is determined not only by inputs but also by uncontrollable factors such as climate. Furthermore, the risk of nutrient leaching and run-off depends not only on the excess nutrients but also on the type of soil, precipitation rates, soil saturation, temperature, etc.

Phosphorus, contrary to nitrogen, is a finite resource (in the sense that phosphate ores are becoming depleted) and after being used in agriculture, the mineral ultimately becomes unavailable for reuse, or can be reused only to a very limited extent. Phosphorus builds up in agricultural soils, it also ends up in the sludge from water treatment plants (which is largely incinerated and thereby removed from the agricultural cycle) but mostly it is eroded, thereby ending up in the sediments of lakes, coastal seas and the ocean. Phosphorus by contrast with nitrogen is not part of a global ecological cycle. Recycling from ocean sediments takes place during a period of millions of years. The EU is almost entirely dependent on imports of phosphate; very little is mined in the EU. Import takes place in two forms: mineral fertilisers and animal feed. It is important to note that the EU, other than is usually assumed, is not at all self-sufficient in food production due to this phosphate dependency. A sustainable use of phosphorus is needed to ensure food supply in the future and to reduce negative impacts of waste of natural resources on the environment. These include amongst others appropriate fertilisation practices, reduction of imbalances in phosphorus inputs and outputs to agricultural soils, recovery of phosphorus from sewage for fertilisation.

Table 5.1 and Table 5.2 show the Gross Nutrient Balance per hectare of utilised agricultural area (UAA) in EU-28 Member States as well as Norway and Switzerland during the 1995–2012 period. The Gross Nitrogen Surplus for the EU-28 aggregate decreased between 2000 and 2011 from 59 to 48 kg nitrogen per ha of UAA, whereas the Gross Phosphorus Surplus in the same period decreased from 5 to 1 kg phosphorus per ha of UAA.

Table 5.1: Gross Nitrogen Surplus, EU-28, NO and CH, 1995–2012 (1)
(kg N per ha of utilised agricultural area)

	1995	2000	2005	2010	2011	2012
EU-28	:	59	49	47	47	:
Belgium	*240*	*178*	*135*	*123*	*122*	*121*
Bulgaria	*24*	*24*	*20*	*13*	*13*	*14*
Czech Republic	56	65	71	68	80	89
Denmark	*138*	*115*	*98*	*78*	*77*	*72*
Germany	105	106	83	82	97	84
Estonia	*15*	*12*	*14*	*28*	*26*	*24*
Ireland	*72*	64	56	39	*22*	:
Greece	*64*	*65*	*63*	*72*	*54*	*51*
Spain	*35*	*50*	*44*	*43*	*35*	*35*
France	:	64	56	46	57	44
Croatia	:	*111*	*95*	*65*	*75*	*75*
Italy	*61*	*63*	*54*	*48*	*47*	*48*
Cyprus	*205*	*175*	*142*	*197*	*202*	*195*
Latvia	*5*	*6*	*7*	*11*	*13*	*1*
Lithuania	*24*	*25*	*21*	*20*	*14*	*2*
Luxembourg	*122*	*104*	*90*	*86*	*95*	*88*
Hungary	:	44	24	39	32	44
Malta	*236*	*247*	*190*	*130*	*97*	*104*
Netherlands	324	251	201	171	163	163
Austria	*45*	*39*	*14*	*19*	*15*	*22*
Poland	29	40	39	47	47	43
Portugal	40	38	24	20	18	13
Romania	*– 11*	*3*	*– 13*	*– 10*	*– 17*	*2*
Slovenia	64	86	44	46	51	58
Slovakia	*47*	*51*	*35*	*44*	*25*	*29*
Finland	78	55	48	55	48	45
Sweden	57	50	41	38	37	:
United Kingdom	84	77	67	66	63	66
Norway	108	96	104	90	105	100
Switzerland	70	59	57	62	58	:

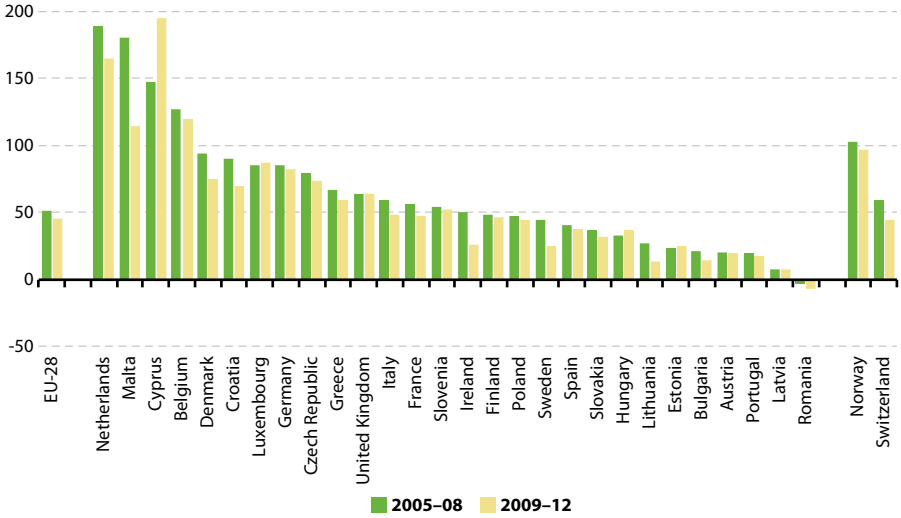
(1) Eurostat estimates: EU-28, BE, BG, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, RO, SK.
Source: Eurostat (online data code: aei_pr_gnb)

Table 5.2: Gross Phosphorus Surplus, EU-28, NO and CH, 1995–2012 (1)
(kg P per ha of utilised agricultural area)

	1995	2000	2005	2010	2011	2012
EU-28	:	5	3	1	1	:
Belgium	*28*	*20*	*11*	*5*	*5*	*6*
Bulgaria	*–2*	*–1*	*–2*	*–5*	*–6*	*–5*
Czech Republic	*3*	*2*	*0*	*–2*	*–3*	*–1*
Denmark	*14*	*11*	*9*	*5*	*5*	*5*
Germany	9	5	2	1	3	1
Estonia	*–15*	*–16*	*–11*	*–8*	*–8*	*–9*
Ireland	12	8	6	2	1	:
Greece	*7*	*2*	*1*	*2*	*0*	*–1*
Spain	*6*	*5*	*7*	*3*	*3*	*4*
France	:	9	5	1	2	1
Croatia	:	*19*	*14*	*9*	*8*	*10*
Italy	*6*	*6*	*–1*	*–4*	*–4*	*–4*
Cyprus	*24*	*28*	*23*	*33*	*32*	*32*
Latvia	*1*	*0*	*1*	*0*	*1*	*–3*
Lithuania	*6*	*4*	*9*	*–2*	*–2*	*0*
Luxembourg	*11*	*5*	*4*	*1*	*1*	*1*
Hungary	:	0	–2	–2	–3	0
Malta	*29*	*38*	*30*	*18*	*12*	*9*
Netherlands	31	24	17	13	8	6
Austria	*4*	*5*	*–2*	*–1*	*–4*	*–3*
Poland	*–1*	*1*	*2*	*3*	*3*	*1*
Portugal	10	8	9	4	2	2
Romania	*–2*	*–1*	*–3*	*–3*	*–4*	*–1*
Slovenia	*16*	*17*	*6*	*4*	*3*	*4*
Slovakia	*1*	*3*	*0*	*0*	*–2*	*1*
Finland	18	8	7	5	4	4
Sweden	4	2	1	*–1*	-2	:
United Kingdom	9	6	6	5	4	5
Norway	15	14	15	12	15	11
Switzerland	7	3	2	2	2	:

(1) Eurostat estimates: EU-28, BE, BG, CZ, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, PL, RO, SI, SK.
Source: Eurostat (online data code: aei_pr_gnb)

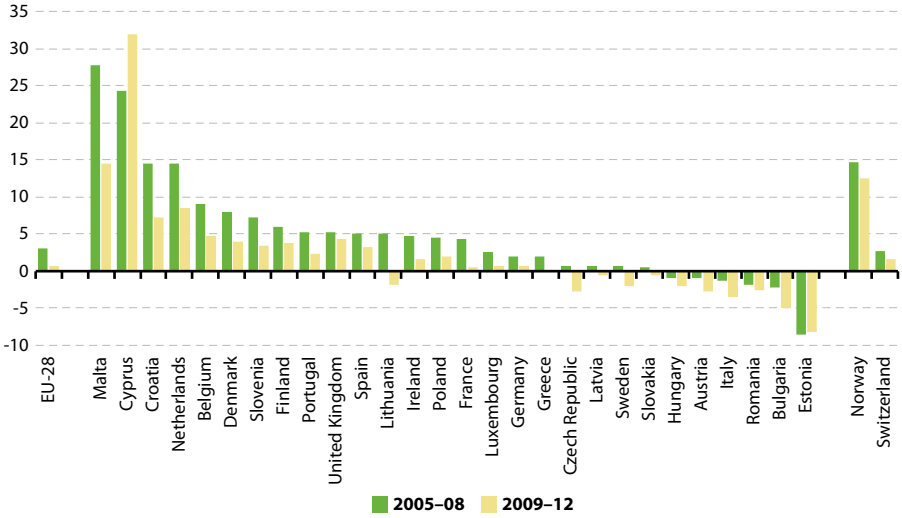
Figure 5.1: Gross Nitrogen Surplus, EU-28, NO and CH, average 2005–08 vs 2009–12 ([1]) ([2])
(kg N per ha of utilised agricultural area)



([1]) Eurostat estimates: EU-28, MT, CY, BE, DK, HR, LU, EL, IT, ES, SK, LT, EE, BG, AT, LV and RO.
([2]) Average: 2009–11 for EU-28, IE, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

In most EU Member States, with the exception of Cyprus, Luxembourg, the United Kingdom, Hungary, Estonia and Latvia, the average Gross Nitrogen Surplus (GNS) per ha of UAA between 2009 and 2012 was lower than between 2005 and 2008 see (Figure 5.1). In the 2009–12 period, the average GNS per hectare was the highest in Cyprus (194.8 kg N/ha), followed by the Netherlands 165.5 kg N/ha), Belgium (119.3 kg N/ha), Malta (114.3 kg N/ha) and Norway (97.3 kg N/ha). By contrast, the nitrogen surplus was the lowest in Latvia (8.0 kg N/ha), Lithuania (13.5 kg N/ha) and Bulgaria (14.3 kg N/ha). In Romania, the Gross Nitrogen Balance was actually negative, with a deficit of – 6.8 kg N/ha. Average Gross Phosphorus Surplus (GPS) per ha of UAA between 2009 and 2012 decreased compared to the 2005–08 period in all EU Member States except Cyprus. The highest average GPS in 2009–12 was in Cyprus (32.0 kg P/ha), Malta (14.5 kg P/ha), Norway (12.5 kg P/ha) and the Netherlands (8.5 kg P/ha). The biggest Gross Phosphorus Deficit was estimated for Estonia (with – 8.3 kg P/ha) and Bulgaria (– 5.0 kg P/ha) (see Figure 5.2).

Figure 5.2: Gross Phosphorus Surplus, EU-28, NO and CH, average 2005–08 vs 2009–12 (1) (2)
(kg P per ha of utilised agricultural area)



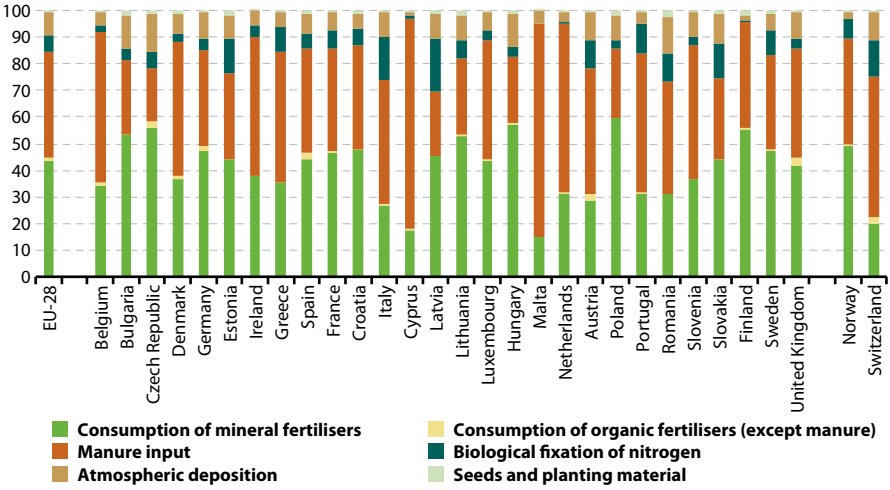
(1) Eurostat estimates: EU-28, MT, CY, HR, BE, DK, SI, ES, LT, PL, LU, EL, CZ, LV, SK, AT, IT, RO, BG and EE.
(2) Average: 2009–11 for EU-28, IE, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

5.2 Nutrient inputs

The input of the Gross Nitrogen Balance consists of nitrogen supplied in mineral fertilisers, manure input, other organic fertilisers (excluding manure), seeds and planting material, atmospheric deposition and biological nitrogen fixation (see Figure 5.3). Mineral fertilisers and manure accounted for over 83 % of the average nitrogen input in the EU-28 between 2009 and 2011. The level of atmospheric deposition is dependent on ammonia (of which agriculture is the main source) and nitrogen oxide emissions (where the contribution of agriculture is not significant) as well as climate conditions (transport through air to other regions). Atmospheric deposition on average accounted for less than 9 %, whereas the biological nitrogen fixation for something over 6 % of total inputs in the EU-28 between 2009 and 2011. The reuse of nitrogen through the use of compost, sewage sludge, industrial waste etc. was insignificant. The nitrogen input with other organic fertilisers (excluding manure) represented only 1 % of total inputs in the EU-28 between 2009 and 2011. Seeds and planting material did not have a significant influence on the nitrogen balance either, with a share of less than 1 % on the total nitrogen inputs.

Figure 5.3: Share of the different nitrogen inputs in total nitrogen inputs, EU-28, NO and CH, average 2009–12 (1) (2)

(%)

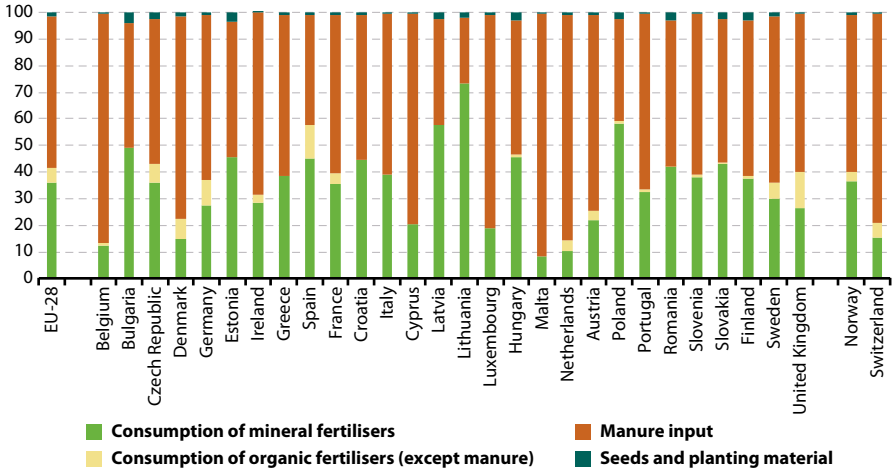


(1) Eurostat estimates: EU-28, BE, BG, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, RO and SK.
(2) Average: 2009–11 for EU-28, IE, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

Figure 5.3 also shows the large differences between EU Member States in the use of inputs. The use of fertiliser type (manure, mineral fertilisers or other organic fertilisers) has different impacts on the environment:

- Nitrogen volatilises from manure in animal housing, storage and with the application to the land. These emissions mainly depend on the type of manure, farm management practices like type of animal housing, manure storage, timing and application techniques.
- Nitrogen emissions from mineral fertilisers during the application to the land depend on type of fertiliser, farm management practices (like application techniques), timing and other factors (such as soil type, and weather conditions).
- Other potential fertilisers like urban wastes often include health hazards (to both crops and humans) and procedures commonly used to reduce these hazards (such as composting) tend to reduce the fertiliser value (leaching/volatilisation).
- Mineral fertilisers are produced using gas. The production of these fertilisers therefore contributes to greenhouse gas (GHG) emissions and fossil fuel depletion.

Figure 5.4: Share of the different phosphorus inputs in total phosphorus inputs, EU-28, NO and CH, average 2009–12 ([1]) ([2])
(%)

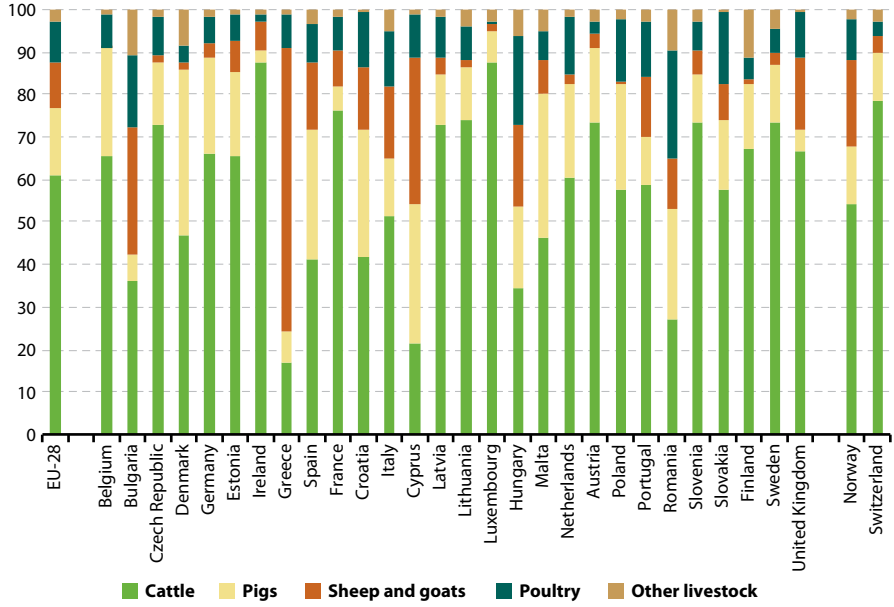


([1]) Eurostat estimates: EU-28, BE, BG, CZ, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, PL, RO , SI and SK.
([2]) Average: 2009 –11 for EU-28, IE, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

Figure 5.4 shows that the vast majority (93.1 %) of phosphorus input in the EU-28 between 2009 and 2011 comes from manure and mineral fertilisers. The rest was supplied with other organic fertilisers (5.5 %) and also seeds and planting material (1.4 %).

Figure 5.5: Share of different livestock in manure nitrogen production, EU-28, NO and CH, average 2009–12 ([1]) ([2])

(%)

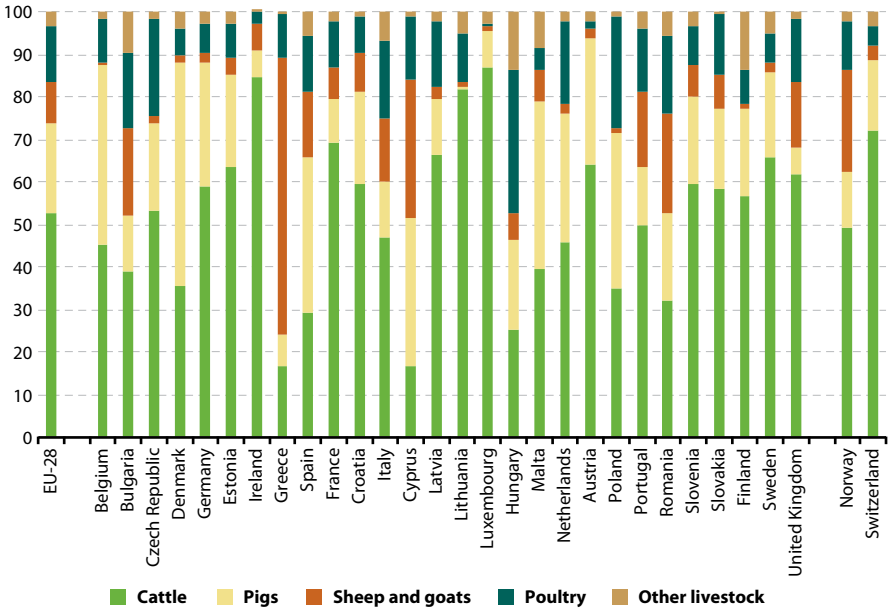


([1]) Eurostat estimates: EU-28, BE, BG, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, RO and SK.
([2]) Average: 2009 –11 for EU-28, IE, NL, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

Manure production is determined by the amount and type of livestock in a country. Figure 5.5 shows that cattle was the main source of manure nitrogen production with more than 50 % in all countries, except Bulgaria, Denmark, Spain, Croatia, Hungary, Malta and Romania — where different livestock types were important — and in Greece and Cyprus where sheep and goats had the highest share. A similar situation can be identified throughout the EU Member States regarding the phosphorus in manure production (Figure 5.6).

Figure 5.6: Share of different livestock in manure phosphorus production, EU-28, NO and CH, average 2009–12 (1) (2)

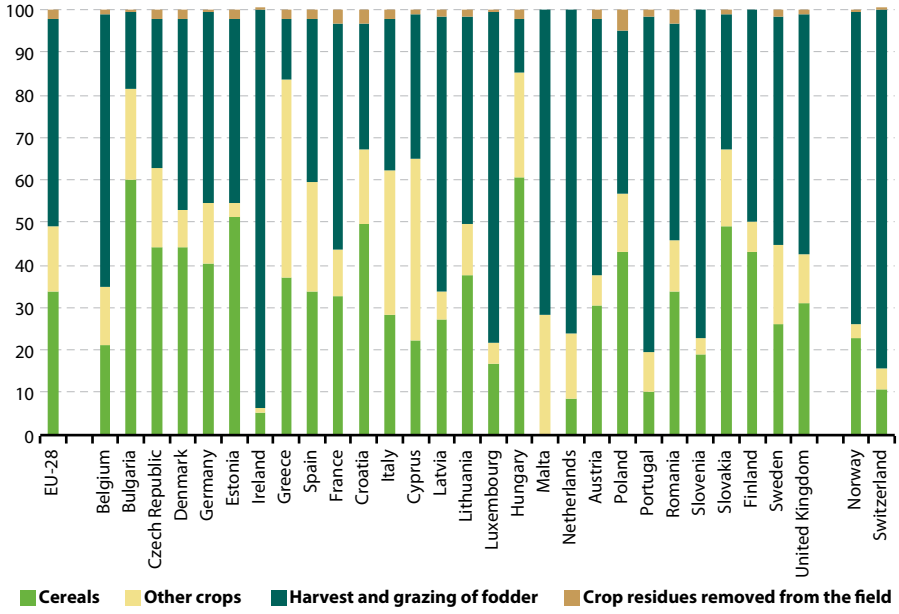
(%)



(1) Eurostat estimates: EU-28, BE, BG, CZ, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, PL, RO , SI and SK.
(2) Average: 2009 –11 for EU-28, IE, NL, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

Figure 5.7: Share of the different nitrogen outputs in total nitrogen outputs, EU-28, NO and CH, average 2009–12 ([1]) ([2])

(%)

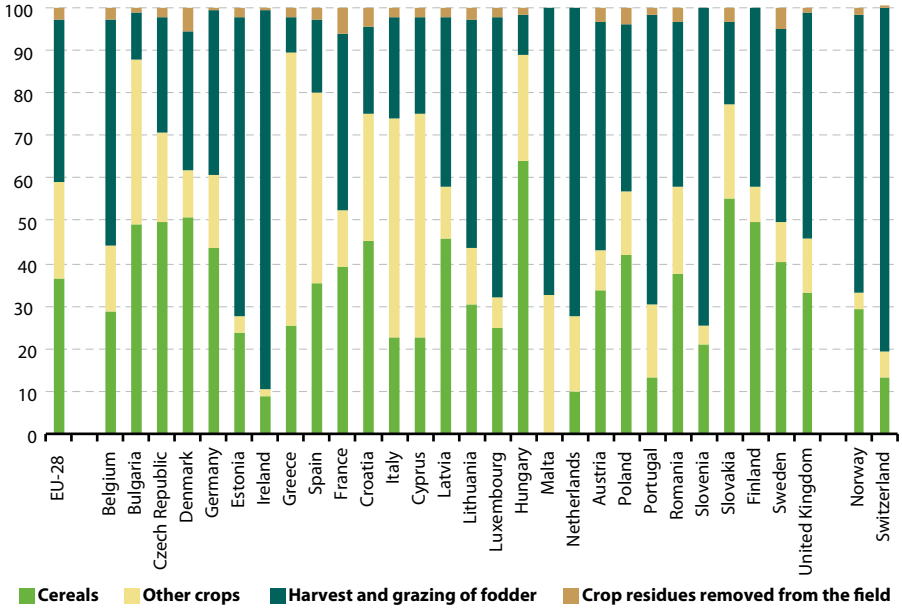


([1]) Eurostat estimates: EU-28, BE, BG, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, RO and SK.
([2]) Average: 2009 –11 for EU-28, IE, NL, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

5.3 Nutrient outputs

The removal of nutrients with harvest and grazing of crops and forage varies between EU Member States as can be seen in Figures 5.7 and 5.8. The dominant share of total nutrient output in the EU-28 in the 2009–11 period was the nutrient uptake with fodder (49 % for nitrogen and 38 % for phosphorus) and cereal production (34 % for nitrogen and 36 % for phosphorus). Nutrient output is dependent on cropping patterns, yields, farm management practices (tillage, irrigation, etc.), climate etc.

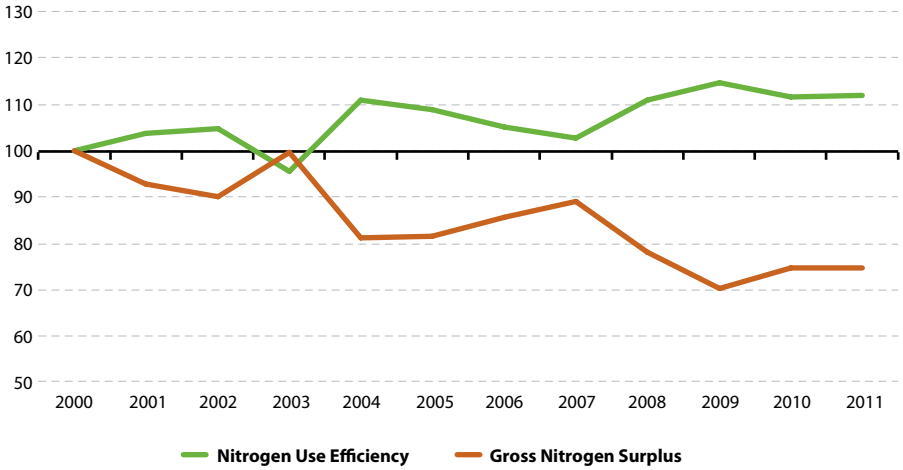
Figure 5.8: Share of the different phosphorus outputs in total phosphorus outputs, EU-28, NO and CH, average 2009–12 (1) (2)
(%)



(1) Eurostat estimates: EU-28, BE, BG, CZ, DK, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, AT, PL, RO , SI and SK.
(2) Average: 2009 –11 for EU-28, IE, NL, SE and CH.
Source: Eurostat (online data code: aei_pr_gnb)

There are significant differences between countries. In some of them (for example Belgium, Ireland, Latvia, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, the United Kingdom, Norway and Switzerland) harvest and grazing of fodder dominates on their nutrient outputs, whereas in Bulgaria, Croatia, Hungary and Slovakia cereals are the dominant crops. Permanent crops are significant in the Mediterranean countries.

Figure 5.9: Evolution of Gross Nitrogen Surplus and Nitrogen Use Efficiency, EU-28, NO and CH, 2000–11
(2000 = 100)



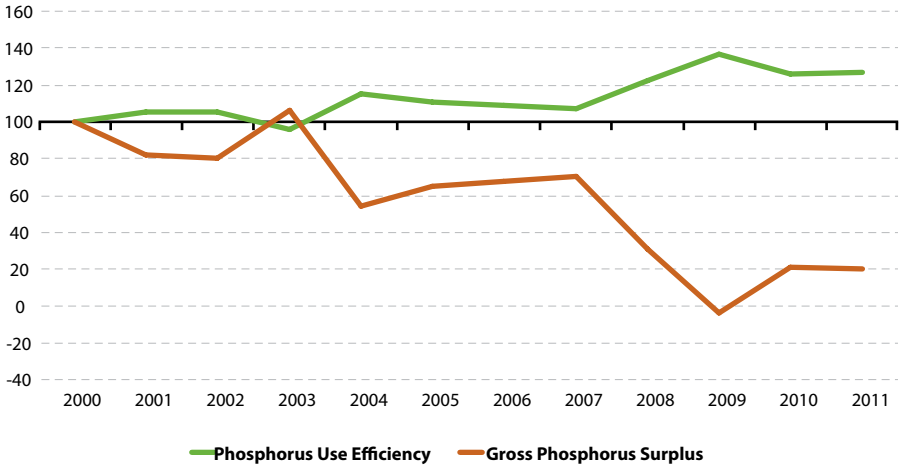
Source: Eurostat (online data code: aei_pr_gnb)

5.4 Nutrient Use Efficiency ratio

Another way of presenting the results of the Gross Nutrient Balance is the Nutrient Use Efficiency ratio, which is defined as total nutrient outputs divided by total nutrient inputs. It gives an indication of the relative utilization of nutrients applied to agricultural production system.

In principle, by decreasing the nutrient surplus over time, the Nutrient Use Efficiency increases. Figures 5.9 and 5.10 show that the overall Nitrogen Use Efficiency in EU-28 increased by 12 % between 2000 and 2011.

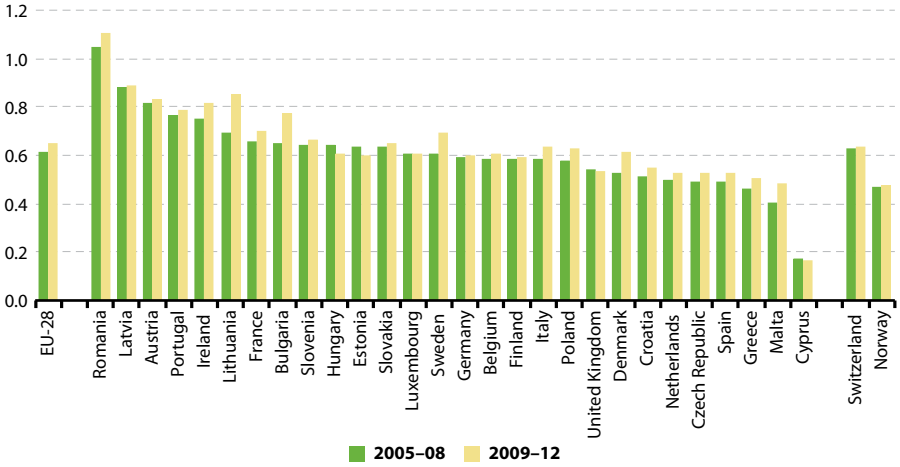
Figure 5.10: Evolution of Gross Phosphorus Surplus and Phosphorus Use Efficiency, EU-28, NO and CH, 2000–11
(2000 = 100)



Source: Eurostat (online data code: aei_pr_gnb)

The Phosphorus Use Efficiency in the same period increased by 27 %. This can be interpreted that in considerable number of countries the utilization of nutrients applied to the field was improved, which was linked mostly to improvements in crop and soil management practices, most importantly the fertilizer application techniques.

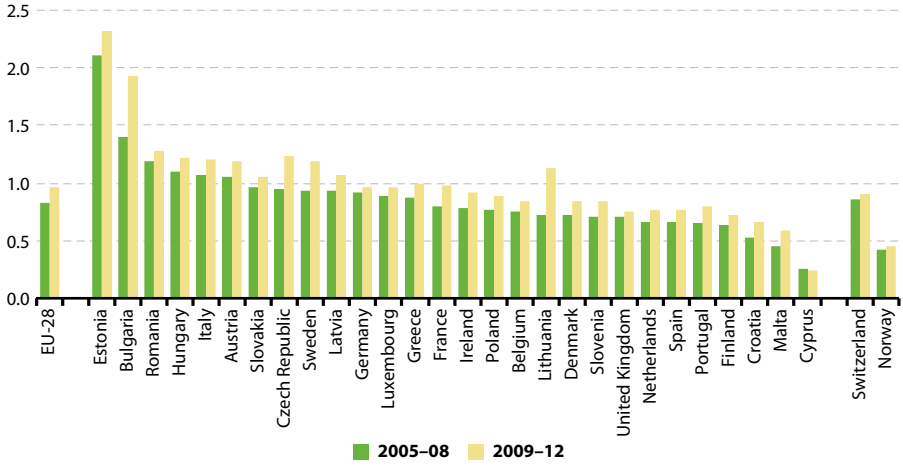
Figure 5.11: Nitrogen Use Efficiency, EU-28, NO and CH, average 2005–08 vs 2009–12 (1)(2)
(total nutrient outputs/total nutrient inputs)



(1) Eurostat estimates: EU-28, RO, LV, AT, LT, BG, EE, SK, LU, BE, IT, DK, HR, ES, EL, MT and CY.
(2) Average: 2009–11 for EU-28, IE, SE, NL and CH.
Source: Eurostat (online data code: aei_pr_gnb)

From Figures 5.11 and 5.12 can be seen that in most countries the average Nutrient Use Efficiency between 2009 and 2012 increased compared to the 2005–08 period. However, the highest value of Nutrient Use Efficiency does not necessarily mean the best and desirable results. The rates which are close to or above 1.0 give the indication of the risk of soil depletion, as the nutrient uptake by crops exceeds the amount of nutrients applied to the soil. From a longer-term perspective, this trend cannot be considered sustainable. In some countries with very high average Nutrient Use Efficiency in the period 2005–08 and 2009–12 the Gross Nutrient Surplus was, in fact, negative. For nitrogen such situation can be observed in Romania and for phosphorus also in some other EU Member States. This was mostly because in the Central and East European countries the use of fertilizers dropped drastically in the late 1980s and early 1990s as a result of political and economic changes.

Figure 5.12: Phosphorus Use Efficiency, EU-28, NO and CH, average 2005–08 vs 2009–12 (1)(2)
(total nutrient outputs/total nutrient inputs)



(1) Eurostat estimates: EU-28, EE, BG, RO, IT, AT, SK, CZ, LV, LU, EL, PL, BE, LT, DK, SI, ES, HR, MT and CY.
(2) Average: 2009–11 for EU-28, SE, IE, NL and CH.
Source: Eurostat (online data code: aei_pr_gnb)

At the opposite end of the scale were countries with the lowest Nutrient Use Efficiency like Cyprus and Malta in which the Gross Nutrient Surplus was high. This was a result of the fact that the nutrient input in these countries exceeded considerably the total crop demand of agricultural production. This of course indicates a very high risk of nutrient losses with potential pollution of the environment.

Achieving sustainable agricultural production requires balancing nutrient inputs with the outputs of the system. Reducing the nutrient surplus decreases the potential for adverse effect on the environment. Nonetheless, on average, European agricultural soils are still oversupplied with nutrients, mainly nitrogen.

DATA SOURCES AND AVAILABILITY

The Gross Nutrients Balance and the Gross Phosphorus Balance are 2 of 28 agro-environmental indicators adopted by European Commission Communication COM(2006) 508 final in 2006 to monitor the integration of environmental concerns into the Common Agricultural Policy.

The methodology of the nutrient balances is described in the Eurostat/OECD Gross Nutrient Balance Handbook. The Gross Nutrient Balance lists all inputs and outputs and calculates the Gross Nutrient Surplus as the difference between total inputs and total outputs. The Gross Nutrient Balance per hectare is derived by dividing the total Gross Nutrient Surplus by utilised agricultural area (UAA).

The inputs of the Gross Nutrient Balance are nutrients supplied in:

- mineral fertilisers;
- manure;
- other organic fertilisers (excluding manure);
- seeds and planting material;
- atmospheric deposition;
- biological nitrogen fixation.

The outputs of the Gross Nutrient Balance are nutrients removed with:

- harvest of crops (cereals, dried pulses, root crops, industrial crops, vegetables, fruit, ornamental plants, other harvested crops);
- harvest and grazing of fodder (fodder from arable land, permanent and temporary pasture consumption);
- crop residues removed from the field.

The nutrient inputs and outputs have been estimated for each item of the balance from basic data by multiplying with coefficients to convert the data into nutrient content. Basic data (fertiliser consumption, livestock numbers, crop production, utilised agricultural area) are mostly derived from agricultural statistics. Coefficients are mainly estimated by research institutes and can be based on models, statistical data, measured data as well as expert judgements.

Various other sources, for example FAOSTAT database, national inventory submissions to UNFCCC and to UNECE-CLRTAP, or EMEP modelled data have also been used.

Due to methodological issues or missing data, estimates of nitrogen balances have been calculated by Eurostat for Belgium, Bulgaria, Denmark, Estonia, Greece, Spain, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Austria, Romania and Slovakia. Estimates of phosphorus balances have been calculated also for the Czech Republic, Poland and Slovenia.

Climatic conditions have a big impact on the balance through the influence on yield and therefore on output of nutrients. Drought, for example, that occurs during the most critical stages of plant growth is the most limiting factor to crop growth, in turn negatively affecting the nutrient use efficiency. Climate and weather conditions are beyond the control of the farmer. To dampen the effect of weather conditions on the balance the results presented with regards to the nutrient balance are mostly presented not referring to a particular year but as an average for a certain period.

The quality and accuracy of the estimated Gross Nutrient Surplus is depending on the quality and accuracy of underlying data and coefficients used. At present the estimation of coefficients vary between countries in methodology (expert judgment vs complex models based on statistical data) and in updating procedures (to take into account the effect of mitigation actions, other than reducing the level of production) in the estimations, coefficients need to be updated regularly to reflect these changes in farmer practices (mitigation actions). As methodologies and also the data sources used in countries vary substantially, the balances are only consistent within a country across time. The Gross Nutrient Balances are not consistent across EU Member States which means that caution should be taken when comparing data between them.

A single indicator (especially the Gross Phosphorus Balance indicator) is not enough to capture the complexity of soil balance, which is influenced by historical balance, climate conditions, soil type and soil characteristics, management practices such as drainage, tillage, irrigation. In the future the indicator will be complemented by an additional sub-indicator called 'Vulnerability to phosphorus leaching and run-off' in order to present further elements able to summarise each EU Member State's situation.

6 Forestry

The European Union (EU) accounts for approximately 5 % of the world's forests and contrary to what is happening in many other parts of the world, the forested area of the EU is slowly increasing. Ecologically, the forests of the EU belong to many different bio-geographical regions and have adapted to a variety of natural conditions, ranging from bogs to steppes and from lowland to alpine forests. Socioeconomically, they vary from small family holdings to state forests or to large estates owned by companies.

Forests are affected by a broad array of EU policies and initiatives. For several decades, environmental forest functions have attracted increasing attention — for example, in relation to the protection of biodiversity and, more recently, in the context of climate change impacts and energy policies. Apart from the traditional production of wood and other forest-based products, forests are increasingly valued for their environmental role and as a public amenity. The EU promotes sustainable forest management with the following objectives, to:

- create and preserve jobs and otherwise contribute to rural livelihoods;
- protect the environment by preserving the soil, minimising erosion, purifying water, protecting aquifers, improving air quality, absorbing carbon, mitigating climate change, and preserving biodiversity;
- monitor the state of forests to meet environmental agreements;
- improve the competitiveness of forest-based industries in the internal market;
- promote the use of wood and other forest products as environmentally friendly products;
- reduce poverty in developing countries by furthering forest law enforcement, fair trade conditions and halting deforestation and illegal logging.

The European Commission presented an EU forest action plan (COM(2006) 302 final) in 2006 which underpins support for sustainable forest management and the multi-functional role of forests. The plan is a framework for forest-related measures and is used to coordinate EU initiatives with the forest policies of the Member States. In March 2010, the European Commission adopted a Green Paper on 'Forest protection and information in the EU: preparing forests for climate change' (COM(2010) 66 final). The paper aimed to stimulate debate concerning the way climate change modifies the terms of forest management and protection, and how EU policy should develop as a consequence.

Forestry, along with farming, remains crucial for land use and the management of natural resources in the EU's rural areas, and as a basis for economic diversification in rural communities. Rural development policy is part of the EU's Common Agricultural Policy (CAP) which has been the main instrument for implementing forestry measures in recent years. In this context, it is estimated that spending on forest-related measures — through the European Agricultural Fund for Rural Development — amounted to EUR 9–10 billion during the period 2007–13.

6.1 Forests and other wooded land

The EU-28 has approximately 180 million hectares of forests and other wooded land, corresponding to 42.4 % of its land area (see Table 6.1). As such, forests and other wooded land cover a slightly higher proportion of land area than that which is used for agriculture (some 40 %). Across the EU Member States, there were six countries that reported that in excess of half of their land area was covered by forests and other wooded land in 2010. Just over three quarters (77 %) of the land area was covered by forests and other wooded land in Finland and Sweden, while the proportion stood at 63 % for Slovenia; the remaining three countries, each with shares in the range of 54–56 %, were Estonia, Spain and Latvia.

Table 6.1: Forest area and ownership, 2010

	Land area without inland water (1)	Forest and other wooded land	Forest	Forest ownership	
				Public	Private (2)
	(1 000 hectares)			(%)	
EU-28	*424 578*	*180 232*	*158 785*	*40.3*	*59.7*
Belgium	3 033	706	678	44.3	55.7
Bulgaria	10 893	3 927	3 927	86.8	13.2
Czech Republic	7 723	2 657	2 657	76.8	23.2
Denmark	*4 243*	591	544	23.7	76.3
Germany	*34 877*	11 076	11 076	51.5	48.5
Estonia	4 343	2 350	2 217	39.0	61.0
Ireland	6 839	789	739	54.3	45.7
Greece	13 082	6 539	3 903	77.5	22.5
Spain	50 176	27 748	18 173	29.4	70.6
France	*55 010*	17 572	15 954	25.8	74.2
Croatia	5 659	2 474	1 920	72.7	27.3
Italy	29 511	10 916	9 149	33.6	66.4
Cyprus	921	387	173	68.7	31.3
Latvia	6 220	3 467	3 354	49.4	50.6
Lithuania	6 268	2 240	2 160	63.5	36.5
Luxembourg	259	88	87	47.1	52.9
Hungary	*8 961*	2 029	2 029	57.8	42.2
Malta	32	0	0	-	-
Netherlands	3 372	365	365	50.4	49.6
Austria	8 241	4 006	3 887	25.7	74.3
Poland	*30 633*	9 337	9 337	82.2	17.8
Portugal	*9 068*	3 611	3 456	1.6	98.4
Romania	23 016	6 733	6 573	67.7	32.3
Slovenia	2 014	1 274	1 253	23.2	76.8
Slovakia	*4 810*	1 933	1 933	50.6	49.4
Finland	30 389	23 269	22 157	30.3	69.7
Sweden	40 734	31 247	28 203	26.8	73.2
United Kingdom	24 251	2 901	2 881	33.3	66.7
Iceland	10 024	116	30	27.8	72.2
Liechtenstein	16	7	7	91.4	8.6
Norway	30 425	12 384	10 250	14.1	85.9
Switzerland	4 000	1 311	1 240	71.7	28.3
Montenegro	*1 345*	744	467	72.2	27.8
FYR of Macedonia	2 491	1 141	998	90.4	9.6
Serbia	*8 746*	3 123	2 713	50.6	49.4
Turkey	76 960	20 864	10 175	99.9	0.1

(1) Latest available year; France: only covers the mainland.
(2) Includes any other form of ownership.
Source: Eurostat (online data code: demo_r_d3area) Food and Agriculture Organization of the United Nations — Global Forest Resources Assessment, 2010; Ministerial Conference for the Protection of Forests in Europe (Forest Europe) — State of Europe's Forests, 2011

Table 6.2: Basic forest resources ([1])

	Forest and other wooded land	Forest available for wood supply		Roundwood production		
	Growing stock		Net annual increment	Total	Fuelwood	Industrial roundwood
	2010	2010		2013 ([1])		
	(1 000 m³ over bark)			(1 000 m³ under bark)		
EU-28	*24 484 127*	*22 084 665*	*775 750*	*434 998*	*96 949*	*338 049*
Belgium	167 900	164 288	5 289	6 663	2 640	4 023
Bulgaria	656 000	435 000	14 677	6 155	2 758	3 396
Czech Republic	769 300	737 650	23 086	15 331	2 182	13 149
Denmark	109 500	111 862	5 796	2 583	1 115	1 468
Germany	3 492 000	3 466 179	107 000	53 207	11 155	42 052
Estonia	455 200	398 300	11 201	7 488	1 962	5 526
Ireland	74 300	74 300	3 588	2 760	209	2 550
Greece	185 000	170 385	4 511	1 196	857	339
Spain	913 900	783 900	45 842	15 600	3 030	12 570
France	2 584 000	2 453 193	94 367	52 371	27 425	24 945
Croatia	415 590	334 400	7 423	5 714	1 557	4 157
Italy	1 448 300	1 285 330	32 543	7 744	5 388	2 356
Cyprus	8 829	3 269	38	9	6	4
Latvia	634 900	584 000	18 333	12 708	1 349	11 359
Lithuania	472 200	408 022	10 750	7 053	2 274	4 779
Luxembourg	25 950	25 756	650	261	18	244
Hungary	359 387	259 154	11 099	6 027	2 858	3 169
Malta	80	0	0	0	0	0
Netherlands	70 000	56 000	2 250	1 022	290	732
Austria	1 135 000	1 106 722	25 136	17 390	4 957	12 433
Poland	2 049 000	2 092 000	68 519	38 058	5 150	32 908
Portugal	187 800	154 000	19 087	11 231	600	10 631
Romania	1 390 200	1 098 328	33 984	17 700	5 332	12 368
Slovenia	417 000	389 927	9 165	3 415	1 127	2 288
Slovakia	514 100	477 600	13 193	8 063	690	7 373
Finland	2 199 391	2 024 000	91 038	55 087	5 755	49 331
Sweden	3 369 300	2 651 100	96 486	70 436	5 900	64 536
United Kingdom	380 000	340 000	20 700	10 780	1 578	9 203
Iceland	1 192	0	0	4	1	3
Liechtenstein	1 750	1 399	-	19	5	14
Norway	997 000	797 000	21 878	11 598	2 579	9 019
Switzerland	429 000	415 000	6 232	4 568	1 635	2 933
Montenegro	74	68	-	364	156	208
FYR of Macedonia	76 410	52 150	830	631	530	101
Serbia	415 000	-	5 232	-	-	-
Turkey	1 400 437	1 212 164	36 609	21 039	4 616	16 423

([1]) Belgium, Croatia, Italy, Iceland, Russia: 2012; Denmark, Greece, Luxembourg, Montenegro, FYROM, Turkey: 2011.
Source: Eurostat (online data code: for_remov) Food and Agriculture Organization of the United Nations — Global Forest Resources Assessment, 2010; Ministerial Conference for the Protection of Forests in Europe (Forest Europe) — State of Europe's Forests, 2011

Sweden recorded the largest area covered by forest and other wooded land in 2010 (31.2 million hectares), followed by Spain (27.7 million hectares), Finland (23.3 million hectares), France (17.6 million hectares), Germany (11.1 million hectares) and Italy (10.9 million hectares). In relative terms, Sweden accounted for 17.3 % of the total area in the EU-28 that was covered by forest and other wooded land in 2010; Spain (15.4 %) and Finland (12.9 %) were the only other Member States to record double-digit shares.

Just under 60 % of the EU-28's forests were privately owned in 2010. There were 11 EU Member States where the share of privately owned forests was above the EU-28 average, peaking at 98.4 % in Portugal. By contrast, the share of privately owned forests was below 20 % in Poland and Bulgaria (where the lowest proportion was recorded, at 13.2 %).

The growing stock of forests and other wooded land in the EU-28 totalled some 24.4 billion m^3 (over bark) in 2010: Germany had the highest share (14.3 %), followed by Sweden (13.8 %) and France (10.6 %). Germany also had the largest growing stock in forests available for wood supply in 2010, some 3.5 billion m^3, while Finland, Poland, France and Sweden each reported between 2.0 and 2.6 billion m^3. The net annual increment in forests available for wood supply was also highest in Germany, rising by 107 million m^3 in 2010 (13.8 % of the total increase for the EU-28), while Sweden, France and Finland each accounted for around 12 % of the annual increment across the EU.

6.2 Primary and secondary wood products

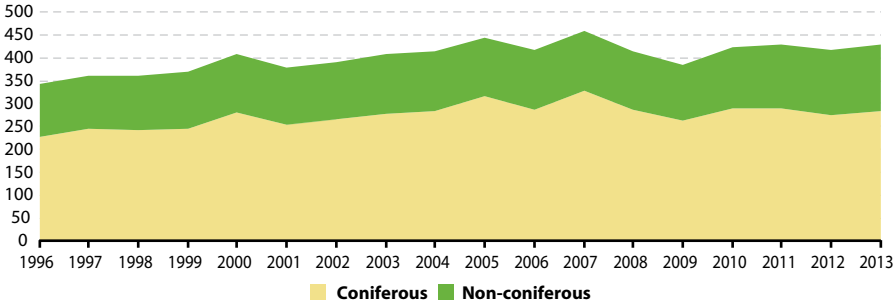
Among the EU Member States, Sweden produced the most roundwood (70.4 million m³) in 2013, followed by Finland, Germany and France (each producing between 52 and 55 million m³) — see Table 6.2. Slightly more than one fifth of the EU-28's roundwood production in 2013 was used as wood for fuel, while the remainder was industrial roundwood used either for sawnwood and veneers, or for pulp and paper production.

In 2013 there were five EU Member States where over 90 % of total roundwood production was used as industrial roundwood: Sweden, Ireland, Slovakia, Luxembourg and Portugal (where the highest share was recorded — 95.0 %). Italy, Greece, France and Cyprus were the only EU Member States where over half of the total roundwood produced in 2013 was used as fuelwood.

The overall level of EU-27 roundwood production reached an estimated 429.6 million m³ in 2013, some 285 million m³ (or 62.5 %) less than the peak output level recorded in 2007. Note that some of the peaks (most recently 2000, 2005 and 2007) in roundwood production are due to forestry and logging having to cope with unplanned numbers of trees that were felled by severe storms.

From 1996 to 2007, there was generally a relatively steady increase in the level of roundwood production for the EU-27 (see Figure 6.1.) While the output level for non-coniferous (broadleaved or hardwood) species remained relatively stable, there were considerably larger differences (year on year) when analysing developments for coniferous (softwood) species. The effects of the financial and economic crisis led to a drop of the level of EU-27 coniferous production in 2008, a pattern which was confirmed with a further reduction in 2009. In 2010, EU-27 roundwood production rebounded strongly (up 10.2 %) and continued to rise in 2013, but at a much slower pace (1.5 %).

Figure 6.1: Annual production of roundwood, EU-28, 1996–2013 ([1])
(million m³)



([1]) 2000–01 and 2007–13: estimates; 2011: provisional.
Source: Eurostat (online data code: for_removv)

Table 6.3: Roundwood production, 2000–13
(1 000 m^3)

	2000	2005	2010	2011	2012	2013
EU-28	411 764	447 502	427 611	433 657	423 359	434 998
Belgium	4 510	4 950	4 827	5 128	6 663	:
Bulgaria	4 784	5 862	5 668	6 205	6 092	6 155
Czech Republic	14 441	15 510	16 736	15 381	15 061	15 331
Denmark	2 952	2 962	2 669	2 583	:	:
Germany	53 710	56 946	54 418	56 142	52 338	53 207
Estonia	8 910	5 500	7 200	7 110	7 290	7 488
Ireland	2 673	2 648	2 618	2 635	2 580	2 760
Greece	2 245	1 523	1 048	1 196	:	:
Spain	14 321	15 531	16 089	15 428	14 657	15 600
France	65 865	52 499	55 808	55 041	52 371	52 371
Croatia	3 669	4 018	4 477	5 258	5 714	:
Italy	9 329	8 691	7 844	7 744	7 744	:
Cyprus	21	10	9	8	11	9
Latvia	14 304	12 843	12 534	12 833	12 530	12 708
Lithuania	5 500	6 045	7 097	7 004	6 921	7 053
Luxembourg	260	249	275	261	:	:
Hungary	5 902	5 940	5 740	6 232	5 946	6 027
Malta	0	0	0	0	0	0
Netherlands	1 039	1 110	1 081	982	955	1 022
Austria	13 276	16 471	17 831	18 696	18 021	17 390
Poland	26 025	31 945	35 467	37 180	37 045	38 058
Portugal	10 831	10 746	9 648	10 961	10 184	11 231
Romania	13 148	14 501	13 112	14 359	16 088	17 700
Slovenia	2 253	2 733	2 945	3 388	3 341	3 415
Slovakia	6 163	9 302	9 599	9 213	8 202	8 063
Finland	54 542	52 250	50 952	50 767	49 967	55 087
Sweden	63 300	98 200	72 200	71 900	69 499	70 436
United Kingdom	7 791	8 519	9 718	10 020	10 120	10 780
Norway	8 156	9 667	10 443	10 291	10 572	11 598
Switzerland	9 238	5 285	4 938	4 861	4 466	4 568
Montenegro	:	:	364	364	:	:
FYR of Macedonia	:	822	631	631	:	:
Turkey	15 939	16 185	20 554	21 039	:	:

Source: Eurostat (online data code: for_remov)

Table 6.4: Sawnwood production, 2000–13
(1 000 m^3)

	2000	2005	2010	2011	2012	2013
EU-28	100 706	108 706	100 815	101 994	98 295	100 682
Belgium	1 150	1 285	1 383	1 388	1 342	:
Bulgaria	312	569	554	728	698	716
Czech Republic	4 106	4 003	4 744	4 454	4 259	4 037
Denmark	364	196	448	372	:	:
Germany	16 340	21 931	22 059	22 628	21 081	21 478
Estonia	1 436	2 063	1 771	1 503	1 491	1 540
Ireland	888	1 015	772	761	782	825
Greece	123	191	118	106	:	:
Spain	3 760	3 660	2 038	2 162	1 971	1 971
France	10 536	9 715	8 316	8 675	8 067	8 067
Croatia	642	624	677	754	1 007	:
Italy	1 630	1 590	1 200	1 250	1 370	1 360
Cyprus	9	4	4	3	3	2
Latvia	3 900	4 227	3 150	3 432	3 316	3 367
Lithuania	1 300	1 445	1 272	1 260	1 150	1 120
Luxembourg	133	133	94	78	:	:
Hungary	291	215	133	:	302	109
Malta	0	0	0	0	0	0
Netherlands	389	279	231	238	190	211
Austria	10 390	11 074	9 603	9 636	8 952	8 850
Poland	4 262	3 360	4 220	4 422	4 267	4 515
Portugal	1 427	1 010	1 045	1 044	951	1 085
Romania	3 396	4 321	4 323	4 442	5 500	5 532
Slovenia	439	527	760	703	660	660
Slovakia	1 265	2 621	2 576	2 204	1 560	1 430
Finland	13 420	12 269	9 473	9 750	9 350	10 140
Sweden	16 176	17 600	16 750	16 500	15 900	:
United Kingdom	2 622	2 780	3 101	3 279	3 409	3 571
Iceland	0	0	:	:	0	:
Liechtenstein	:	:	4	8	:	0
Norway	2 280	2 326	2 118	2 271	2 289	2 206
Switzerland	1 625	1 591	1 457	1 313	1 104	1 093

Source: Eurostat (online data code: for_swpan)

Table 6.4 presents information on sawnwood production: the total output volume across the EU-28 was an estimated 100.7 million m^3 in 2013. Germany and Finland were the leading sawnwood producers among the EU Member States, accounting for 21.3 % and 10.1 % of the EU-28 total in 2013.

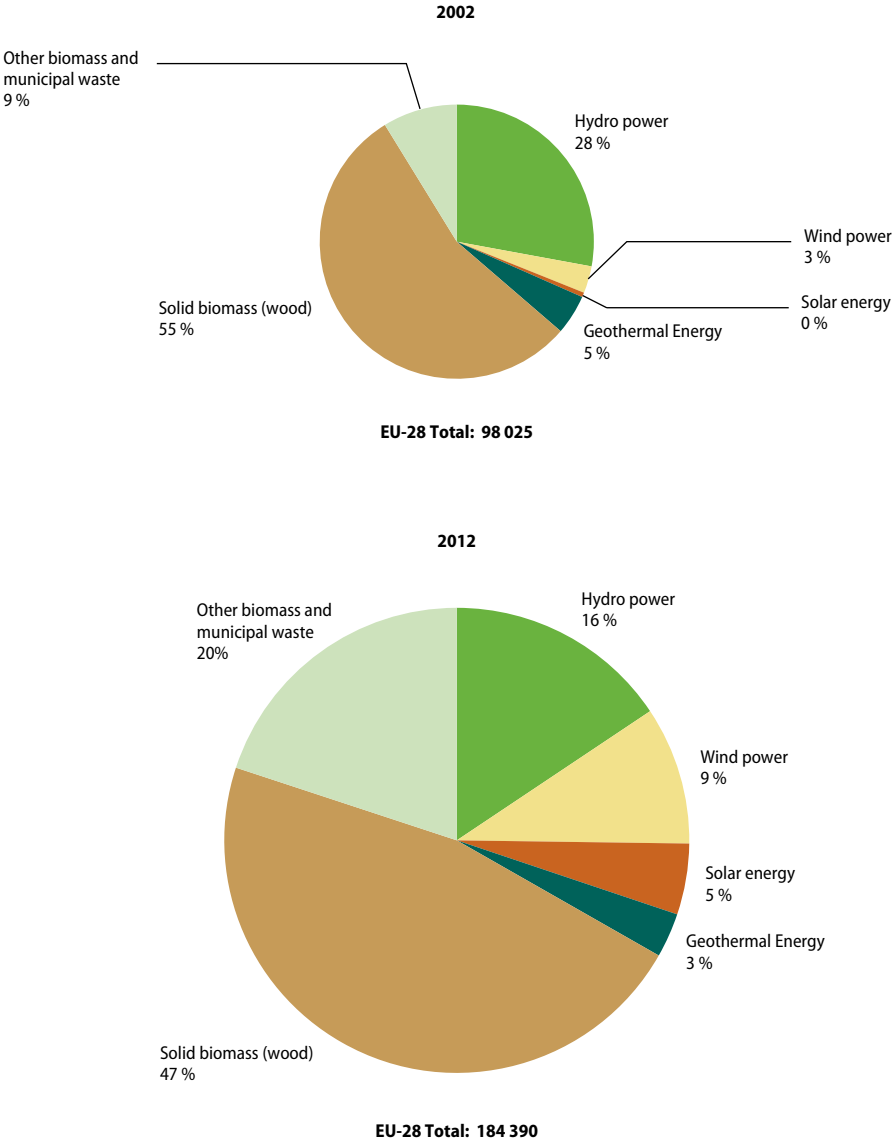
EU-27 sawnwood production peaked at 115.5 million m^3 in 2007. There followed a period of contraction during the financial and economic crisis, which resulted in output falling by 21.2 % between 2007 and 2009. Sawnwood production quickly rebounded in 2010 and continued to rise in 2011 (following the pattern of industrial roundwood), posting an overall output increase of 11.2 % between 2009 and 2011. Although sawnwood production decreased by 3.6 % in 2012, it rebounded by 2.4 % in 2013.

6.3 Wood as a source of energy

Energy supply has always been one of the main uses for wood. Policy interest in energy security and renewable sources of energy, combined with relatively high oil and gas prices, has led in recent years to a reassessment of the possible use of wood as a source of energy. The use of renewables is enshrined in legally binding targets that have been set for each EU Member State concerning the role to be played by renewable energy sources through to 2020. The 'Renewable energy progress report' (COM(2013) 175 final) provides information on the progress being made towards the target of achieving a 20 % share of renewable energy in final energy consumption by 2020. This goal is designed to help reduce emissions, improve the security of energy supply and reduce dependence on energy imports.

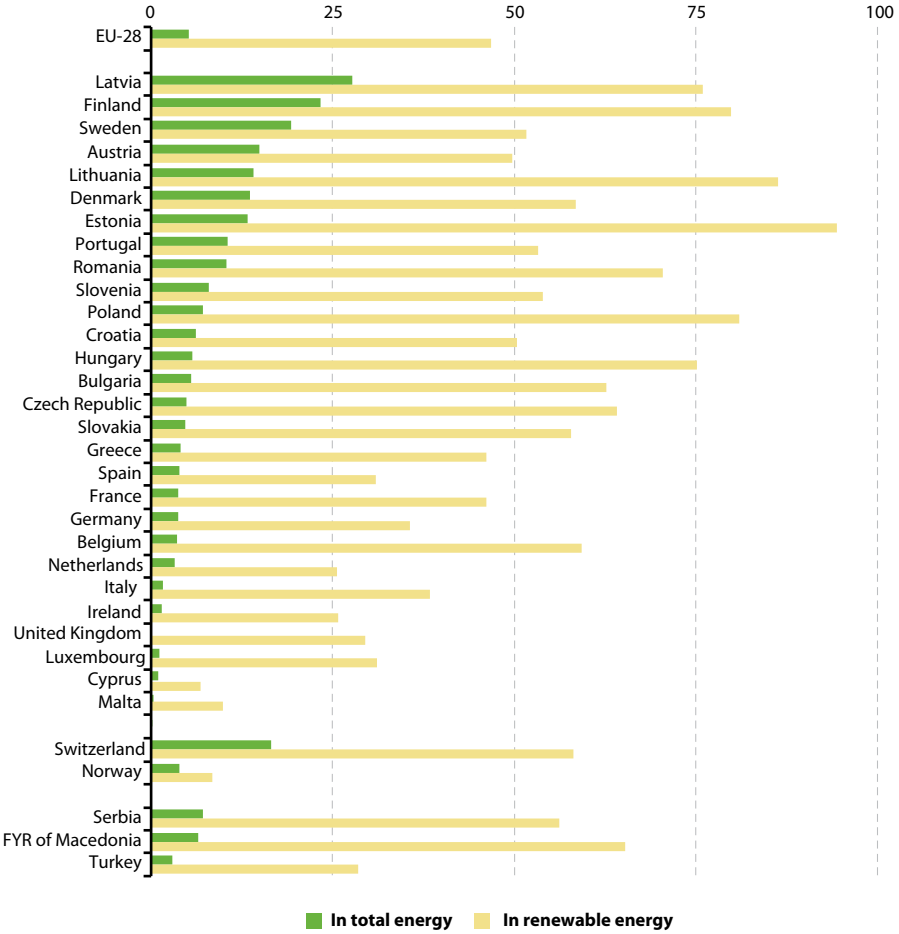
Between 2002 and 2012, the consumption of renewable energy within the EU-28 almost doubled. Some renewable energy sources have experienced exponential growth — the consumption of solar energy for example, has grown by 1 620 % between 2002 and 2012. However, the consumption of more established renewable energy sources like biomass (including municipal waste) has also increased substantially (+ 97 %) during the same period. Among renewable energy sources, biomass (including municipal waste) plays an important role accounting for just over two thirds (67.0 %) of the gross inland energy consumption of renewables within the EU-28 in 2012, as shown in Figure 6.2. Within this biomass total, wood and wood waste provided the highest share of energy from organic, non-fossil materials of biological origin, accounting for almost half (47 %) of the EU-28's gross inland energy consumption of renewables in 2012.

Figure 6.2: Gross inland consumption of renewable energy, EU-28, 2002 and 2012
(1 000 tonnes of oil equivalent)



Source: Eurostat (online data code: nrg_107a)

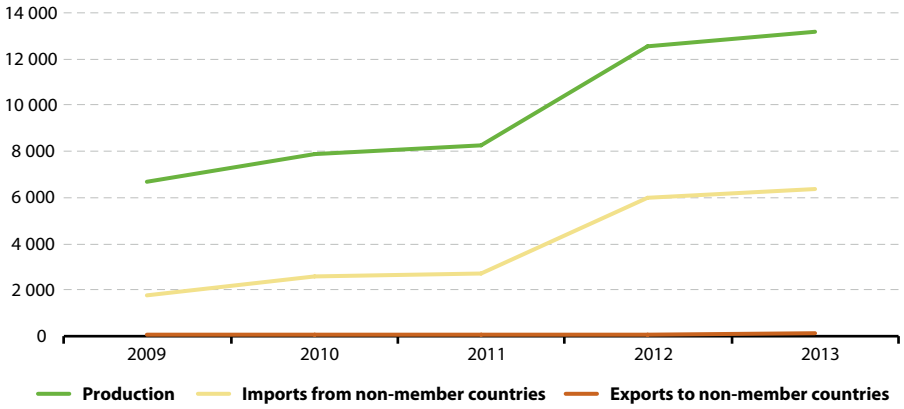
Figure 6.3: Wood as a source of energy, 2012
(% share of wood and wood products in gross inland energy consumption, in TOE)



Source: Eurostat (online data codes: nrg_100a and nrg_107a)

In many European countries, wood energy is the most important single source of energy from renewables. Wood and wood waste accounted for 5.1 % of the total energy consumed within the EU-28 in 2012 (see Figure 6.3). The share of wood and wood waste in total gross inland energy consumption ranged from over 20 % in Latvia and Finland down to less than 1 % in Luxembourg, Cyprus and Malta.

Figure 6.4: Development of production and trade in wood pellets, EU-28, 2009–13 ([1])([2])
(1 000 tonnes)



([1]) Estimates.
([2]) EU-27: 2009–12.
Source: Eurostat (online data code: for_basic)

Wood was the source of energy for more than three quarters of the renewable energy consumed in Hungary, Poland, Finland, Latvia, Lithuania and Estonia. By contrast, the relative weight of wood in the mix of renewables was relatively low in Malta and Cyprus (where the lowest share was reported: 6.8 %); this was also the case in oil- and gas-rich Norway (8.4 %).

Wood pellets are made from dried sawdust, shavings or wood powder, with the raw material being subjected to high pressure to increase the density of the final product. Pellets are currently the most economical way of converting biomass into fuel and are a fast-growing source of energy in Europe. They can be used for power production, or, more efficiently, directly for combustion in residential and commercial heating.

The EU-28 is the largest global producer of wood pellets, its output reaching an estimated 13.2 million tonnes in 2013; production in the EU-28 rose by 97.6 % overall between 2009 and 2013 (see Figure 6.4). The EU-28 is also a net importer of wood pellets: the level of imports from non-EU Member States rose to 6.4 million tonnes by 2013, which was an overall increase of 267.6 % compared with 2009.

Although potential biomass supplies within most EU Member States are substantial, some countries import significant volumes of fuel pellets and other forms of biomass as they seek to meet their renewable energy targets, raising concerns about the impact of importing wood as a source of energy and the consequences this may have on the global sustainability of forests and resulting levels of carbon emissions.

Germany produced an estimated 2.2 million tonnes of wood pellets in 2013, or 16.7 % of the EU-28's output (see Table 6.5). The information for the EU Member States in 2013 is incomplete — however, Sweden was the second largest producer in 2010, with around 1.4 million tonnes of wood pellets (17.5 % of the EU-28 total). Several EU Member States have seen a very notable increase in their wood pellet production between 2010 and 2013, most notably the Czech Republic (from 85 000 to 1.2 million tonnes), Poland (from 429 000 to 1.1 million tonnes) and Latvia (from 615 000 to 1.2 million tonnes).

The United Kingdom had the highest level of wood pellet imports in 2013 among the EU-28 Member States, some 3.4 million tonnes (note that this figure relates to total imports, in other words those from non-EU Member States as well as other EU Member States). Italy and The Netherlands each imported in excess of one million tonnes of wood pellets in 2013. By contrast, the Czech Republic and Latvia were the only EU Member States to export more than one million tonnes of wood pellets in the same year.

Table 6.5: Production and trade in wood pellets, 2010 and 2013
(1 000 tonnes)

	Production		Imports (1)		Exports total (1)	
	2010	2013	2010	2013	2010	2013
EU-28	7 898	13 190	2 576	6 391	70	141
Belgium	0	0	315	:	38	:
Bulgaria	7	67	1	8	8	71
Czech Republic	85	1 241	15	614	99	1 182
Denmark	0	:	1 443	91	35	1
Germany	1 744	2 208	270	624	740	685
Estonia	423	612	50	51	421	628
Ireland	28	32	12	0	0	0
Greece	0	0	0	:	0	:
Spain	184	250	13	38	5	47
France	449	935	144	226	231	270
Croatia	:	:	:	:	:	:
Italy	539	420	816	1 779	2	8
Cyprus	0	0	0	1	0	0
Latvia	615	1 175	9	42	589	1 125
Lithuania	205	335	44	68	213	370
Luxembourg	8	:	4	1	11	7
Hungary	0	6	43	16	12	40
Malta	0	0	0	0	0	0
Netherlands	120	158	1 024	1 508	135	525
Austria	686	962	231	510	397	504
Poland	429	1 140	34	111	69	298
Portugal	486	800	64	32	550	811
Romania	175	620	3	8	165	542
Slovenia	65	95	45	250	42	256
Slovakia	87	140	4	18	38	110
Finland	177	270	11	69	109	79
Sweden	1 386	:	697	736	117	197
United Kingdom	0	301	551	3 391	60	106
Norway	45	95	14	94	1	41
Switzerland	0	180	:	90	:	4

(1) Extra-EU trade for the EU-28 aggregate.
Source: Eurostat (online data code: for_basic)

6.4 Forestry and logging: economic indicators and employment

A range of economic indicators are presented for forestry and logging activities across EU Member States in Table 6.6. The data confirms, to a large degree, the information presented at the start of this chapter, insofar as the largest forestry and logging activities — on the basis of gross value added generated in 2012 — were found in Sweden, Germany and Finland.

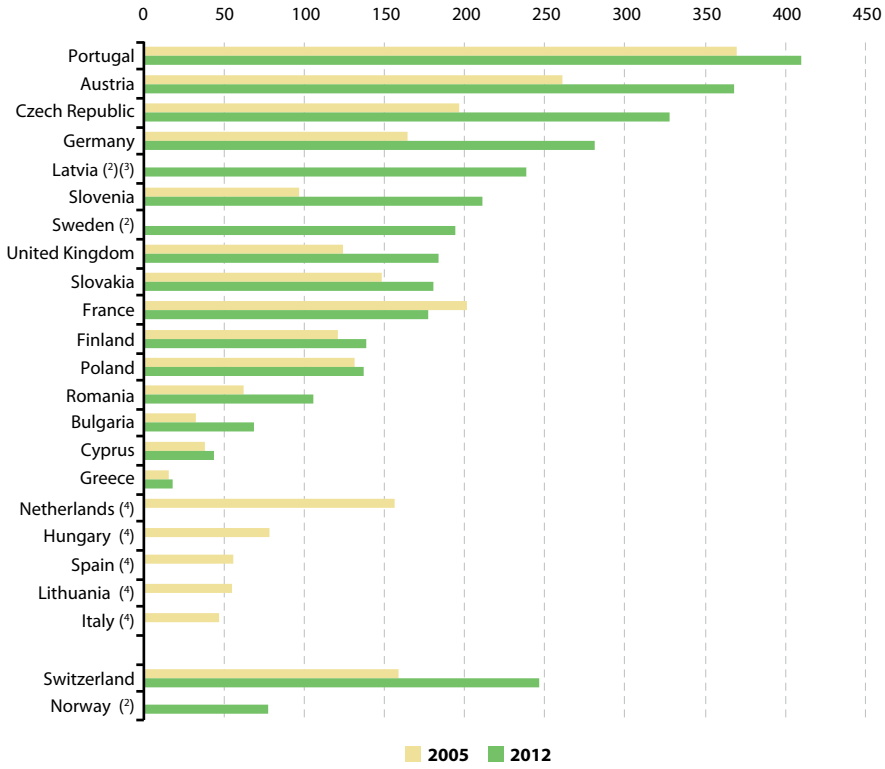
Gross fixed capital formation measures the proportion of gross value added that is (re-)invested, rather than being consumed. As such it may be considered an important indicator for the competitiveness of an industry. On the basis of the information that is available for 14 EU Member States, EUR 2.5 billion was invested in forestry and logging in 2012, accounting for a 13.0 % share of gross value added. Almost half of the investment that took place in 2012 could be attributed to Sweden and Finland. The highest relative shares of gross fixed capital formation in value added for 2012 were recorded in Cyprus (42.1 %) and Greece (26.3 %) — although these figures tended to reflect low levels of added value, rather than high levels of investment. They were followed by Poland (24.0 %), while Finland and Sweden each recorded shares of gross fixed capital formation in gross value added in the range of 16–18 %.

Table 6.6: Economic indicators for forestry and logging, 2005 and 2012

	Gross output		Gross value added at basic prices		Gross fixed capital formation		Gross value added/ forest area available for wood supply	
	2005	2012	2005	2012	2005	2012	2005	2012
	(EUR million)						(EUR/hectare)	
Belgium	:	:	:	:	:	:	:	:
Bulgaria	216	459	84	197	11	20	33	69
Czech Republic	1 035	1 744	496	764	63	103	197	328
Denmark	:	:	:	:	:	:	:	:
Germany	4 141	6 348	1 738	2 975	168	226	164	282
Estonia	:	:	:	:	:	:	:	:
Ireland	:	:	:	:	:	:	:	:
Greece	60	70	54	63	4	17	16	18
Spain	1 438	:	787	:	:	:	55	:
France	4 446	4 578	2 968	2 690	472	275	201	178
Croatia	:	:	:	:	:	:	:	:
Italy	443	:	365	:	83	:	47	:
Cyprus	2	3	2	2	2	1	38	44
Latvia (1)	:	1 168	:	749	:	:	:	239
Lithuania	167	:	102	:	10	:	55	:
Luxembourg	:	:	:	:	:	:	:	:
Hungary	277	:	132	:	24	:	79	:
Malta	:	:	:	:	:	:	:	:
Netherlands	22	:	46	:	10	:	156	:
Austria	1 592	2 244	873	1 222	155	149	261	368
Poland	1 991	2 051	1 110	1 166	137	280	132	137
Portugal	693	758	666	747	98	97	370	410
Romania	286	1 075	314	550	:	42	62	106
Slovenia	178	341	115	230	8	12	99	211
Slovakia	551	656	259	321	33	28	148	181
Finland	1 890	2 251	2 422	2 761	388	444	121	139
Sweden	:	8 728	:	3 996	:	704	:	194
United Kingdom	535	856	357	444	20	46	150	184
Norway	:	1 014	:	500	:	69	:	78
Switzerland	279	407	188	292	83	116	159	246

(1) 2011 data.
Source: Eurostat (online data codes: for_ieeaf_cp and for_area)

Figure 6.5: Forestry and logging value added per forest area available for wood supply, 2005 and 2012 ([1])
(EUR/hectare)



([1]) Ranked on 2012; those Member States not shown: not available or not applicable.
([2]) 2005: not available.
([3]) 2012: not available; 2011 instead.
([4]) 2012: not available.
Source: Ministerial Conference for the Protection of Forests in Europe (Forest Europe) — State of Europe's Forests, 2011, supplemented by Eurostat estimates (online data codes: for_area and for_ieeaf_cp)

The ratio of value added generated within the forestry and logging sector compared with the forest area available for wood supply is one indicator that can be used to analyse the productivity of forestry activities across the EU (see Figure 6.5). The indicator shows that the highest shares of value added per forest area in the EU were in Portugal, Austria, the Czech Republic, Germany, Latvia and Sweden; forests accounted for at least one third of the total land area in each of these EU Member States.

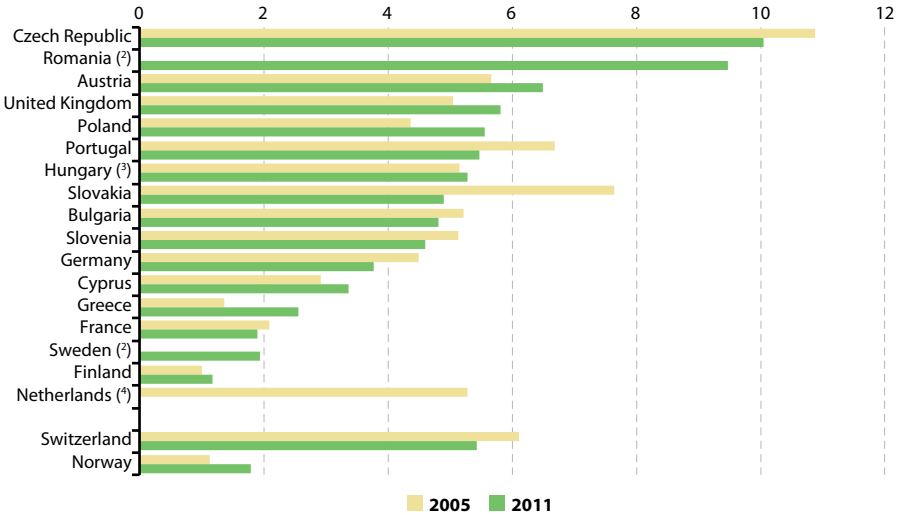
Table 6.7: Employment in forestry and logging, 2005 and 2011

	Employment		Employment/forest area available for wood supply		Apparent labour productivity			
	2005	2011	2005	2011	2005	2011	2011	2005
	(1 000 annual work unit)		(annual work units/ 1 000 hectares)		(1 000 m^3 removals/ annual work units)		(EUR 1 000 gross value added / annual work units)	
Belgium	:	:	:	:	:	:	:	:
Bulgaria	13.3	13.8	5.2	4.8	0.4	0.5	6.3	13.9
Czech Republic	27.4	23.4	10.9	10.0	0.6	0.7	18.1	31.0
Denmark	:	:	:	:	:	:	:	:
Germany	47.4	*39.8*	4.5	*3.8*	1.2	*1.4*	36.6	*62.5*
Estonia	:	:	:	:	:	:	:	:
Ireland	:	:	:	:	:	:	:	:
Greece	4.7	9.2	1.4	2.6	0.3	0.1	11.4	5.4
Spain	:	:	:	:	:	:	:	:
France	30.8	28.7	2.1	1.9	1.7	1.9	96.4	81.8
Croatia	:	:	:	:	:	:	:	:
Italy	:	:	:	:	:	:	:	:
Cyprus	0.1	0.1	2.9	3.4	0.1	0.1	13.1	14.3
Latvia	:	:	:	:	:	:	:	:
Lithuania	:	:	:	:	:	:	:	:
Luxembourg	:	:	:	:	:	:	:	:
Hungary (1)	8.7	9.1	5.2	5.3	0.7	0.7	15.2	17.9
Malta	:	0.0	:	-	:	-	:	:
Netherlands	1.6	:	5.3	:	0.7	:	29.5	:
Austria	19.0	21.8	5.7	6.5	0.9	0.9	46.0	56.4
Poland	36.8	47.4	4.4	5.6	0.9	*0.8*	30.2	27.7
Portugal	12.0	*10.0*	6.7	*5.5*	0.9	*1.1*	55.3	*73.0*
Romania (2)	:	49.2	:	9.5	:	0.3	:	9.1
Slovenia	6.0	5.4	5.1	4.6	0.5	0.6	18.8	38.3
Slovakia	13.4	8.7	7.7	4.9	0.7	1.1	19.4	35.4
Finland	20.0	23.5	1.0	1.2	2.6	2.2	121.1	125.0
Sweden	:	39.8	:	1.9	:	5.1	:	302.7
United Kingdom	12.0	14.0	5.1	5.8	0.7	0.7	24.6	30.3
Norway	7.1	*11.5*	1.1	*1.8*	1.4	*0.9*	:	*49.9*
Switzerland	7.2	*6.5*	6.1	*5.4*	0.7	*0.7*	25.9	*45.1*

(1) Employment and gross value added: 2009 instead of 2011.
(2) Employment and gross value added: 2010 instead of 2011.
Source: Eurostat (online data codes: for_ieeaf_cp, for_awu, for_remov and for_area)

Table 6.7 provides some information in relation to employment within the EU's forestry and logging sector. The largest workforce was recorded in Romania, with 49 200 annual work units (AWUs) in 2011. There were also relatively large workforces in Poland (47 400 AWUs), Germany and Sweden (39 800 AWUs) and France (28 700 AWUs); note that this information is incomplete with data only available for 17 EU Member States.

Figure 6.6: Employment per area of forest available for wood supply, 2005 and 2011 (1)
(annual work units/1 000 hectares)



(1) Ranked on 2011; those Member States not shown: not available or not applicable.
(2) 2005: not available, 2010 instead of 2011.
(3) Employment: 2009 instead of 2011.
(4) 2011: not available.
Source: Ministerial Conference for the Protection of Forests in Europe (Forest Europe) — State of Europe's Forests, 2011, supplemented by Eurostat estimates (online data codes: for_ieeaf_cp, for_awu, for_remov and for_area)

A ratio of labour input (as measured by AWUs) per area of exploited forest provides some information on the labour intensity of the forestry sector across the EU Member States. This indicator varies considerably between countries, ranging from a high of around 10 AWUs per 1 000 hectares in the Czech Republic and Romania to less than 2 AWUs per 1 000 hectares in Sweden and Finland (see Figure 6.6). Some of the differences across countries may, at least in part, be explained by the local terrain that predominates in areas where forestry and logging takes place, as work in mountainous areas will generally require a higher level of labour input than work on large tracts of flat land.

The labour productivity of the forestry and logging sector (calculated as gross value added per AWU) also varied substantially across the EU Member States in 2011 (see Table 6.7). The highest levels of labour productivity — using this measure — were recorded in Finland (EUR 125 000 per AWU) and Sweden (EUR 302 700 per AWU), while at the other end of the range, Bulgaria, Cyprus, Romania and Greece recorded productivity levels that were below EUR 16 000 per AWU.

6.5 Wood-based industries

The EU's wood-based industries cover a range of downstream activities, including woodworking industries, large parts of the furniture industry, pulp and paper manufacturing and converting industries, and the printing industry. Together, some 446 000 enterprises were active in wood-based industries across the EU-27; they represented more than one in five (21.2 %) manufacturing enterprises across the EU-27, highlighting that — with the exception of pulp and paper manufacturing that is characterised by economies of scale — many downstream wood-based industries had a relatively high number of small or medium-sized enterprises.

Between 2005 and 2011 the total number of enterprises within the EU-27's wood-based industries fell by 10.9 % (see Table 6.8). As such, the rate of decline was similar to the manufacturing average (– 9.6 %). There were declines recorded for three of the four subsectors, with the biggest reduction registered for furniture manufacturing (– 16.7 %). By contrast, the number of pulp and paper manufacturing enterprises in the EU-27 rose by 0.9 % between 2005 and 2011.

The economic weight of the wood-based industries in the EU-27 — as measured by EUR 135 billion of gross value added — was equivalent to 8.2 % of the manufacturing total in 2011. The distribution of value added across each of the four wood-based activities presented in Table 6.8 was spread relatively equally, as each subsector accounted for at least one fifth of the total added value added generated within the EU-27's wood-based industries in 2011; the highest share was recorded for pulp, paper and paper products manufacturing (25.6 % or EUR 42 billion).

Table 6.8: Main indicators for wood-based industries, EU-27, 2005 and 2011

Activity (NACE Rev. 2)	Number of enterprises (1 000)		Gross value added at factor cost (EUR billion)		Number of persons employed (1 000)	
	2005	2011	2005	2011	2005	2011
Manufacturing (C)	2 322	*2 100*	1 630	*1 650*	34 644	30 100
Wood-based industries (16+17+18.1+31)	*500*	*446*	*152*	*135*	*4 388*	*3 461*
Manufacture of wood and wood products (16)	*198*	*183*	*35*	*32*	*1 280*	*1 020*
Manufacture of pulp, paper and paper products (17)	20	*20*	*40*	*42*	*730*	651
Printing and services related to printing (18.1)	133	*118*	41	33	978	790
Manufacture of furniture (31)	*150*	*125*	*36*	*29*	*1 400*	*1 000*

Source: Eurostat (online data codes: sbs_na_2a_dade, sbs_na_2a_dfdn and sbs_na_ind_r2)

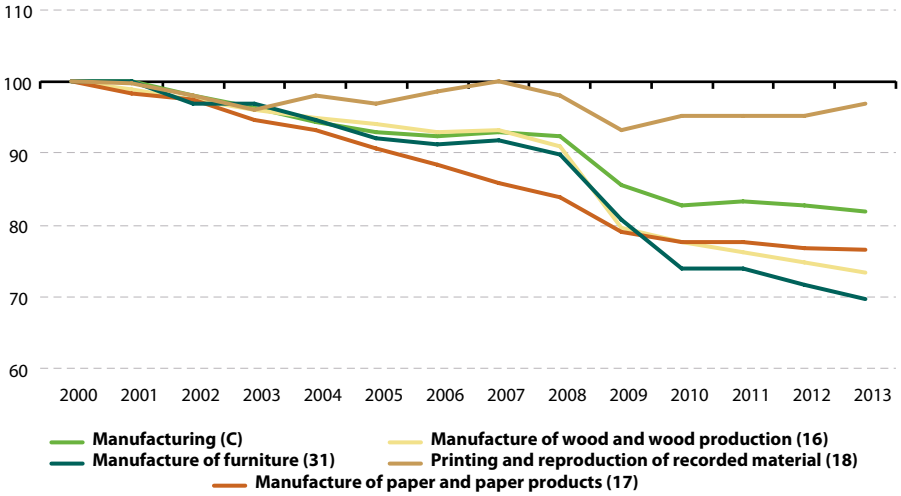
Between 2005 and 2011 the overall level of added value generated within the EU-27's manufacturing sector rose by 1.2 %. The wood-based industries in the EU-27 on the other hand experienced a decline in activity as gross value added fell by 10.9 %. Double-digit reductions in activity were recorded for three of the four wood-based industries — with the largest decline in output recorded for printing and services related to printing (– 20.2 %). By contrast, the added value generated by the EU-27's pulp and paper manufacturing enterprises rose by 5.7 % between 2005 and 2011.

Wood-based industries employed 3.4 million persons across the EU-27 in 2011, or 11.5 % of the manufacturing total. There were just over one million persons employed within the manufacture of wood and wood products and the manufacture of furniture, while the lowest level of labour input (651 000 persons) was recorded for the relatively capital-intensive and highly automated activity of pulp, paper and paper products manufacturing.

A longer time series and fresher data are available concerning the development of employment within three of the wood-based industries. Across the EU-28, manufacturing employment fell by 18.1 % during the 2000–13 period, while the largest losses among the three wood-based industries shown in Figure 6.7 were recorded for furniture manufacturing (30.3 % fewer persons employed). Printing was the least affected manufacturing industry, noting a 2.9 % reduction in employment during the 2000–13 period.

Figure 6.7 shows that each of these wood-based industries, in keeping with most manufacturing sectors, experienced a reduction in the respective numbers of persons employed during the 2000–13 period. The development of EU-28 employment for wood and wood products and furniture manufacturing followed closely the overall pattern for total manufacturing during the period 2000–08. Thereafter, with the onset of the financial and economic crisis, labour input reductions for these two wood-based industries accelerated at a faster pace than the manufacturing average. Furthermore, having remained unchanged in 2011, there was evidence of a further downturn in EU-28 employment for both of these subsectors in 2013. By contrast, pulp, paper and paper products manufacturing had a more uniform reduction in employment spread across the period 2000–13, and was relatively unaffected by the financial and economic crisis.

Figure 6.7: Employment in wood-based industries compared with total manufacturing, EU-28, 2000–13
(2000 = 100)



Source: Eurostat estimates (online data code: sts_inlb_a)

6.6 Tropical wood imports to the EU

The EU has agreed a voluntary scheme titled the Forest Law Enforcement, Governance and Trade (FLEGT) action plan to fight illegal logging and associated trade. One key element of the plan is to ensure that only legally harvested timber is imported to the EU. The EU legal framework for the scheme is Council Regulation (EC) No 2173/2005 adopted in December 2005 'on the establishment of a FLEGT licensing scheme for imports of timber into the European Community' and a 2008 European Commission implementing Regulation (EC) No 1024/2008 laying down detailed measures for the introduction of the scheme.

Bilateral FLEGT agreements between the EU and various tropical wood producing nations are designed to halt trade in illegal timber, notably with a license scheme to verify the legality of timber exported to the EU. The first agreements to be formally concluded were with Cameroon, the Central African Republic, Ghana, Indonesia, Liberia, and Congo, while negotiations are on-going with Côte d'Ivoire, the Democratic Republic of the Congo, Gabon, Guyana, Honduras, Malaysia and Vietnam; Laos and Thailand are preparing to negotiate.

Table 6.9: Tropical wood imports, EU-27, 2002–13
(EUR million)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cameroon	327.4	323.9	340.2	384.1	350.1	405.3	340.7	208.9	253.0	277.9	204.6	162.5
Central African Republic	28.5	32.4	25.2	22.3	26.7	22.8	19.7	11.0	9.8	10.3	9.2	5.9
Congo	93.7	89.3	104.1	89.0	85.3	77.3	78.1	35.6	55.7	54.2	35.9	43.9
Côte d'Ivoire	185.4	162.3	187.6	195.3	170.6	187.6	178.2	93.0	103.8	87.8	69.4	57.6
Democratic Republic of the Congo	22.3	22.5	36.6	60.2	83.6	100.6	85.5	41.5	47.6	51.1	36.8	35.8
Gabon	205.0	194.6	220.9	226.0	207.4	268.1	249.2	169.6	161.6	158.2	54.6	58.3
Ghana	96.6	90.3	86.5	85.4	68.2	69.9	64.5	34.7	35.1	33.2	15.8	14.0
Guyana	1.1	0.6	0.7	1.6	2.1	2.7	3.7	2.5	2.5	1.2	1.7	1.3
Honduras	0.2	0.2	0.1	0.1	0.3	0.7	0.2	0.6	0.3	0.2	0.5	0.7
Indonesia	80.6	85.6	80.8	88.8	81.0	135.2	132.9	100.8	107.3	102.7	85.9	80.1
Liberia	62.6	37.9	0.0	:	:	:	0.3	0.7	1.2	5.6	5.6	2.5
Malaysia	263.4	266.2	255.1	258.3	329.2	325.9	295.5	211.2	228.7	213.9	165.0	147.5
Thailand	17.9	18.6	16.9	17.4	16.4	17.4	17.1	6.0	4.8	4.1	5.2	1.4
Vietnam	0.5	0.5	0.5	0.4	0.6	1.0	1.4	0.4	0.3	0.7	0.5	0.9
Sum of the 14 countries above	1385.1	1325.0	1355.2	1428.9	1421.4	1614.4	1467.0	916.5	1011.9	1001.1	690.6	612.4
All countries of the world	1695.6	1646.3	1728.8	1856.3	1827.8	2302.7	1962.1	1177.8	1303.6	1268.3	897.1	785.9

Source: Eurostat (online data code: for_trop)

The statistics shown in Table 6.9 therefore relate to the potential value of legal timber that could enter the EU from tropical wood partners with bilateral FLEGT agreements. The value of tropical wood imports into the EU-27 reached a peak of EUR 2.3 billion in 2007, before falling by 14.8 % in 2008 and by a considerably greater amount (– 40.0 %) at the height of the financial and economic crisis, illustrating how the recession hit these high-value imports. There was a modest recovery in 2010 (imports rising by 10.7 %), and almost no change in 2011, when the EU-27's imports of tropical wood were valued at EUR 1.3 billion. The influence of the financial and economic crisis is clear: the value of tropical wood imports into the EU-27 were valued at EUR 9 billion in 2012 and 7.8 billion in 2013.

The countries that are presented in the table accounted for approximately 80 % of the EU-27's tropical wood imports (in value terms) during the 2000–13 period. The main origin of tropical wood imports in 2013 was Cameroon (20.7 % of the total), follow Malaysia (18.8 %) and Gabon (7.4 %) of total EU imports of tropical wood.

DATA SOURCES AND AVAILABILITY

Eurostat, the Timber Committee of the United Nations Economic Commission for Europe (UNECE), the Forestry Section of the United Nations Food and Agriculture Organisation (FAO) and the International Tropical Timber Organisation (ITTO) collect and collate statistics on the production and trade of wood through their Joint Forest Sector Questionnaire. Each partner collects data from a different part of the world; Eurostat is responsible for the data collection exercise pertaining to the EU Member States and EFTA countries.

Eurostat produces annual data on forestry using two questionnaires:

- the Joint Forest Sector Questionnaire (JFSQ) on production and trade in wood and wood products;
- integrated environmental and economic accounting for forests (IEEAF); countries are currently providing data on economic accounts for forestry and logging, forming part of an environmental satellite accounts initiative that started in the late 1990s.

The JFSQ provides data on supply balances for wood products. The data have also been used for: modelling whether supply will match demand in the future due to competing uses for materials and for energy; estimating carbon in harvested wood products for post-Kyoto negotiations.

The collection of data for integrated environmental and economic accounting for forests restarted in 2008 after a break of several years. This data provides, among others, information relating to the economic viability of forestry, employment in forestry and logging and the multi-functionality of forests. Note that the monetary values concern current basic prices (in other words, the analysis of time series is not adjusted for inflation.

7 Fisheries

Fish are a natural, biological, mobile (sometimes over long distances) and renewable resource. Aside from fish farming, fish are generally not owned until they have been caught. As such, fish stocks continue to be regarded as a common resource which needs to be managed collectively. This has led to a range of policies that regulate the amount of fishing at the European level, as well as the types of fishing techniques and gear that can be used in fish capture.

A renewed Common Fisheries Policy (CFP) ([1]) entered into force on 1 January 2014 aiming at an environmentally, economically and socially sustainable use of the common resource including aquaculture production. Based on European Community legislation, Eurostat produces data on catches and landings of fishery products, aquaculture and the EU fishing fleet.

([1]) http://ec.europa.eu/fisheries/cfp/index_en.htm

7.1 Fishing fleet

Under the CFP, reducing fleet capacity is an essential tool for achieving a sustainable exploitation of fisheries resources. The European Union (EU) fleet is very diverse, with the vast majority of boats being no more than 12 metres long, but a small number of vessels exceeding 40 metres in length.

The EU's fishing fleet capacity has declined fairly steadily since the early 1990s, in terms of both tonnage (an indicator of fish-holding capacity) and engine power (an indicator of the power available for fishing gear). The size of the EU-28 fishing fleet has dropped to about 86 500 vessels in 2013 compared to 104 000 vessels for the EU-15 in 1995, although it increased by 7.2 % between 2012 and 2013, following Croatia's EU accession. The EU's fishing fleet in 2013 had a combined capacity of 1.7 million gross tonnes and a total engine power of 6.6 million kilowatts ([2]).

Almost one fifth (18.3 %) of the EU-28's fishing fleet is registered in Greece. On average, however, these Greek vessels are small, with an average size of 4.9 gross tonnes (much less than the EU-28 average of 19.2 gross tonnes) and an average engine power of 28.9 kilowatts in 2013 (compared with an EU-28 average of 76.0 kilowatts). In terms of capacity Spain, France, Italy and the United Kingdom had the largest fishing fleets, accounting for 54.2 % of gross tonnage and 55.8 % of engine power in 2013.

([2]) Based on the fishing fleet of the EU countries active at 31 December of each year.

Table 7.1: Fishing fleet, 1995–2013
(number of vessels)

	1995	2000	2005	2010	2011	2012	2013
EU (1)	**103 867**	**95 285**	**88 947**	**83 534**	**81 987**	**80 643**	**86 479**
Belgium	154	129	120	89	86	83	80
Bulgaria	:	:	:	2 340	2 336	2 366	2 043
Czech Republic (2)	:	:	:	:	:	:	:
Denmark	5 181	4 138	3 264	2 819	2 784	2 743	2 663
Germany	2 391	2 315	2 116	1 673	1 582	1 550	1 533
Estonia	:	:	1 044	934	923	1 360	1 445
Ireland	2 052	1 621	1 860	2 144	2 187	2 247	2 197
Greece	20 598	19 598	17 965	17 032	16 527	15 981	15 790
Spain	18 390	16 685	13 705	10 851	10 505	10 116	9 872
France (3)	6 649	8 229	8 239	7 219	7 207	7 142	7 125
Croatia	:	:	:	:	:	:	7 039
Italy	19 357	17 369	14 397	13 444	13 043	12 731	12 650
Cyprus	:	:	882	1 003	1 078	1 074	894
Latvia	:	:	928	786	731	715	703
Lithuania	:	:	267	171	151	148	146
Luxembourg (2)	:	:	:	:	:	:	:
Hungary (2)	:	:	:	:	:	:	:
Malta	:	:	1 418	1 091	1 054	1 043	1 032
Netherlands	1 023	1 101	825	846	841	848	846
Austria (2)	:	:	:	:	:	:	:
Poland	:	:	974	793	790	798	838
Portugal	11 738	10 677	9 113	8 440	8 346	8 269	8 216
Romania	:	:	:	476	502	195	194
Slovenia		:	175	182	182	174	170
Slovakia (2)	:	:	:	:	:	:	:
Finland	4 106	3 664	3 268	3 366	3 332	3 241	3 211
Sweden	2 510	2 019	1 599	1 360	1 369	1 392	1 368
United Kingdom	9 718	7 740	6 788	6 475	6 431	6 427	6 424
Iceland	:	1 997	1 756	1 628	1 658	1 691	1 692
Norway	:	13 017	7 723	6 309	6 250	6 211	6 126

(1) EU-15: 1995–2000; EU-25: 2005; EU-27: 2010–12; EU-28: 2013.
(2) The Czech Republic, Luxembourg, Hungary, Austria and Slovakia are landlocked countries without a marine fishing fleet.
(3) French data include vessels registered in the French Overseas Departments.
Source: Eurostat (online data code: fish_fleet)

Table 7.2: Fishing fleet, by tonnage, 1995–2013
(total gross tonnage, 1 000 tons)

	1995	2000	2005	2010	2011	2012	2013
EU (1)	2 092	2 030	2 021	1 748	1 687	1 631	1 658
Belgium	23	24	23	16	15	15	15
Bulgaria	:	:	:	8	7	7	7
Czech Republic (2)	:	:	:	:	:	:	:
Denmark	107	108	91	66	65	66	65
Germany	76	71	64	68	65	64	62
Estonia	:	:	24	15	14	15	13
Ireland	64	72	88	69	64	65	64
Greece	110	107	93	87	84	80	78
Spain	608	520	488	414	399	385	373
France (3)	181	226	220	173	171	168	164
Croatia	:	:	:	:	:	:	49
Italy	260	234	214	185	175	165	164
Cyprus	:	:	9	4	4	4	3
Latvia	:	:	39	41	35	34	30
Lithuania	:	:	65	46	45	27	34
Luxembourg (2)	:	:	:	:	:	:	:
Hungary (2)	:	:	:	:	:	:	:
Malta	:	:	15	12	8	8	8
Netherlands	180	212	171	147	152	145	151
Austria (2)	:	:	:	:	:	:	:
Poland	:	:	30	37	33	33	34
Portugal	128	118	108	101	101	100	100
Romania	:	:	:	1	1	1	1
Slovenia	:	:	1	1	1	1	1
Slovakia (2)	:	:	:	:	:	:	:
Finland	25	21	17	17	16	16	17
Sweden	58	52	44	33	30	31	29
United Kingdom	271	265	218	207	202	201	198
Iceland	:	180	181	150	159	165	154
Norway	:	392	373	366	389	378	393

(1) EU-15: 1995–2000; EU-25: 2005; EU-27: 2010–12; EU-28: 2013.
(2) The Czech Republic, Luxembourg, Hungary, Austria and Slovakia are landlocked countries without a marine fishing fleet.
(3) French data include vessels registered in the French Overseas Departments.
Source: Eurostat (online data code: fish_fleet)

The capacities of most national fishing fleets declined in the short period between 2005 and 2013, however a slight increase was registered in Lithuania, Poland, Finland and the Netherlands from 2012 to 2013. The capacity downsizing in Spain, France and Italy was in line with the EU-28 average for this period (2005–13), but was smaller in the United Kingdom, Portugal, Germany and Finland.

Table 7.3: Fishing fleet, by power, 1995–2013
(1 000 kW)

	1995	2000	2005	2010	2011	2012	2013
EU (1)	8 204	7 646	7 278	6 529	6 361	6 236	6 574
Belgium	66	65	65	51	49	48	47
Bulgaria	:	:	:	63	61	61	57
Czech Republic (2)	:	:	:	:	:	:	:
Denmark	424	393	325	240	232	230	223
Germany	169	168	159	159	150	147	144
Estonia	:	:	62	40	39	47	44
Ireland	213	212	227	198	195	198	195
Greece	669	617	532	502	481	461	457
Spain	1 635	1 336	1 128	935	901	873	849
France (3)	996	1 114	1 104	991	1 001	999	1 000
Croatia	:	:	:	:	:	:	398
Italy	1 497	1 396	1 224	1 107	1 057	1 019	1 017
Cyprus	:	:	47	43	45	46	39
Latvia	:	:	65	61	53	51	50
Lithuania	:	:	71	54	54	34	42
Luxembourg (2)	:	:	:	:	:	:	:
Hungary (2)	:	:	:	:	:	:	:
Malta	:	:	99	85	78	77	75
Netherlands	517	522	400	343	342	331	336
Austria (2)	:	:	:	:	:	:	:
Poland	:	:	105	87	83	82	81
Portugal	397	399	383	371	371	367	366
Romania	:	:	:	7	8	6	6
Slovenia	:	:	11	11	11	9	8
Slovakia (2)	:	:	:	:	:	:	:
Finland	225	198	172	173	171	171	173
Sweden	270	246	219	178	171	173	167
United Kingdom	1 126	981	881	827	808	806	801
Iceland	:	529	526	470	479	496	482
Norway	:	1 321	1 272	1 238	1 102	1 246	1 254

(1) EU-15: 1995–2000; EU-25: 2005; EU-27: 2010–12; EU-28: 2013.
(2) The Czech Republic, Luxembourg, Hungary, Austria and Slovakia are landlocked countries without a marine fishing fleet.
(3) French data include vessels registered in the French Overseas Departments.
Source: Eurostat (online data code: fish_fleet)

This reduced capacity in the EU-28 stands in stark contrast with the upkeep of fishing fleet capacities in Iceland and Norway. The capacity of the Norwegian fishing fleet (about 393 000 gross tonnes) was similar to Spain's in terms of overall tonnage, although Norway's 64.1 gross tonnes average per vessel was considerably higher than Spain's. The Norwegian fishing fleet was also considerably more powerful than that of any EU Member State. In the case of Iceland, despite having a much smaller fleet than France and Italy in terms of numbers of vessels, the overall holding capacity (gross tonnage) was very similar.

7.2 Total production

Total fishery production covers total catches in the seven regions covered by EU Statistical Regulations ([3]) as well as aquaculture production for human consumption. The total production of fishery products in the EU was an estimated 5.7 million tonnes of live weight equivalent (in other words, the mass or weight when removed from water) in 2012. It should be noted that this figure excludes catch data for the Czech Republic, Hungary, Austria and Slovakia, which are landlocked countries without a marine fishing fleet. The EU figure for 2012 suggests there was another fall in fishery production (– 6.8 % compared to 2011), continuing the steady decline noted over the previous 20 years (– 35.7 % from 1995 to 2012).

Within the EU, the three largest fishery producers in terms of volume in 2012 were Spain (1 million live weight tonnes), the United Kingdom (0.8 million live weight tonnes) and France (0.7 million live weight tonnes) (see Table 7.4). Total fisheries production in Spain was estimated to be 9.2 % higher in 2012 than in 2005 while production in the United Kingdom increased slightly from 2011 to 2012 (+ 4.9 %) but remained close (– 0.8 %) to its 2005 levels. By contrast a 43.5 % decline of total fishery production was observed in Denmark since 2005. Sharp production declines were also registered between 2005 and 2012 in Lithuania (– 47.1 %), Latvia, (– 40.5 %), Sweden (– 37.2 %) the Netherlands (– 36.7 %) and Estonia (– 35.6 %).

It is also worth noting that total fisheries production in Iceland (1.5 million tonnes of live weight) and Norway (3.4 million tonnes of live weight) was larger than that of any of the EU Member States in 2012. Production in Norway remained almost stable in 2012 and was still 10.3 % higher than its 2005 levels. By contrast, although production in Iceland was higher in 2012 than in 2011, it remained almost one eighth (– 12.6 %) below its level of 2005.

([3]) Food and Agriculture Organization of the United Nations (FAO) major areas 21, 27, 34, 37, 41, 47, 51 (see Map 7.1).

Table 7.4: Total production, all fishery products, 1995–2012 (1)
(1 000 tonnes live weight, rounded)

	1995	2000	2005	2010	2011	2012
EU-28 (2)(3)	8 824	7 953	6 774	6 267	6 081	5 670
Belgium	36	31	24	22	22	24
Bulgaria	12	10	6	18	16	15
Czech Republic	18	19	20	20	21	21
Denmark	2 044	1 578	950	860	748	537
Germany	280	249	309	256	257	232
Estonia	130	110	98	93	78	63
Ireland	415	328	327	362	250	312
Greece (4)	181	191	197	191	174	173
Spain	1 372	1 296	938	995	1 073	1 024
France	947	959	831	643	681	666
Croatia	20	28	46	68	88	78
Italy	602	515	475	384	377	:
Cyprus	3	69	4	6	6	6
Latvia	150	136	151	165	157	90
Lithuania	58	79	140	141	140	74
Luxembourg	0	0	0	0	0	:
Hungary	9	13	14	14	16	15
Malta	6	3	6	9	6	10
Netherlands	499	569	618	443	409	391
Austria	3	3	2	2	3	3
Poland	168	182	169	167	202	213
Portugal	275	197	226	231	223	206
Romania	60	12	9	9	9	11
Slovenia	3	3	2	2	2	1
Slovakia	2	1	1	1	1	1
Finland	123	136	109	139	136	151
Sweden	411	342	261	221	193	164
United Kingdom	1 002	895	838	807	794	832
Iceland	1 626	2 004	1 669	1 068	1 159	1 459
Norway	2 796	3 190	3 053	3 582	3 323	3 368

(1) Total production includes catches and aquaculture.
Total catches in all fishing regions are calculated as the sum of the seven regions covered by legal acts, namely: 21 - Atlantic, Northwest, 27 - Atlantic, Northeast, 34 - Atlantic, Eastern Central, 37 - Mediterranean and Black Sea, 41 - Atlantic, Southwest, 47 - Atlantic, Southeast and 51 - Indian Ocean, Western.
Aquaculture excludes production from hatcheries and nurseries, fish eggs for human consumption, ornamental and aquarium species.
(2) Differences in the sum of all EU countries and the EU-28 totals are due to rounding.
(3) Italy 2011 figure was used to estimate the EU-28 2012 total.
(4) The 2012 aquaculture production of Greece is based on provisional data.
Source: Eurostat (online data codes: fish_ca_main, fish_aq_q and fish_aq_2a)

7.3 Aquaculture

About one fifth of the EU-28's total fishery production comes from aquaculture. Production was 1.25 million tonnes of live weight in 2012, virtually the same as in 2011. This represented a decline in aquaculture production of about 11 % after the relative peak of 2000.

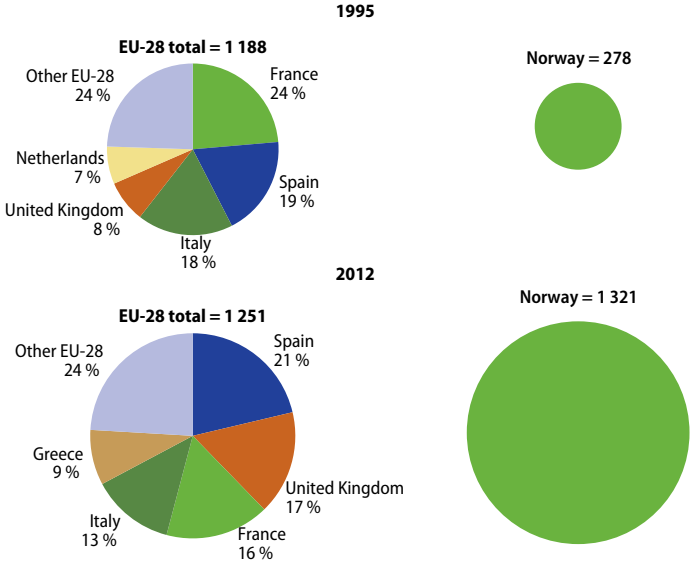
The three largest aquaculture producers among EU Member States were Spain, the United Kingdom and France, which together accounted for more than half (54 %) of the EU-28's aquaculture production in 2012. There was a clear downward trend in aquaculture production levels in France between 1995 and 2011 with a light recovery in 2012. By contrast, there was relatively steady growth in the United Kingdom over the same period. Production volumes in Spain have fluctuated, with 2012 production levels staying within the broad range recorded since 1995.

Table 7.5: Aquaculture production ([1]), 1995–2012
(1 000 tonnes live weight, rounded)

	1995	2000	2005	2010	2011	2012
EU-28 ([2])([3])	1 188	1 405	1 278	1 272	1 249	1 251
Belgium	1	2	0	1	0	0
Bulgaria	5	4	3	8	7	7
Czech Republic	18	19	20	20	21	21
Denmark	45	44	39	32	32	34
Germany	64	66	45	41	39	27
Estonia	0	0	1	1	0	0
Ireland	27	51	60	46	44	36
Greece ([4])	33	95	106	121	111	109
Spain	224	309	221	254	274	267
France	281	267	245	203	194	205
Croatia	4	7	11	16	17	14
Italy	215	217	181	154	164	:
Cyprus	0	2	2	4	5	4
Latvia	1	0	1	1	1	1
Lithuania	2	2	2	3	3	4
Luxembourg	0	0	0	0	0	:
Hungary	9	13	14	14	16	15
Malta	1	2	5	7	4	7
Netherlands	84	75	71	67	44	46
Austria	3	3	2	2	3	3
Poland	25	36	38	37	26	33
Portugal	5	8	7	8	9	10
Romania	20	10	7	9	8	10
Slovenia	1	1	1	1	1	1
Slovakia	2	1	1	1	1	1
Finland	17	15	14	12	11	13
Sweden	8	5	6	11	13	14
United Kingdom	94	152	173	201	199	206
Iceland	3	4	8	5	5	7
Norway	278	491	661	1 020	1 145	1 321

([1]) Excluding production from hatcheries and nurseries, fish eggs for human consumption, ornamental and aquarium species.
([2]) Differences in the sum of all EU countries and the EU-28 totals are due to rounding.
([3]) Italy's 2011 figure was used to estimate the EU-28 2012 total.
([4]) Provisional data for 2012.
Source: Eurostat (online data codes: fish_aq_q and fish_aq_2a)

Figure 7.1: Main aquaculture producers ([1]), EU-28 and Norway, 1995 and 2012
(1 000 tonnes live weight, %)



([1]) Excluding production from hatcheries and nurseries, fish eggs for human consumption, ornamental and aquarium species.
Source: Eurostat (online data codes: fish_aq_q and fish_aq_2a)

Within the EU-28 about 130 different species were farmed in aquaculture in 2012. The most important species in terms of weight have been Mediterranean mussel, Atlantic salmon, Rainbow trout and Blue mussel, followed by Pacific cupped oyster. It needs to be noted that the weight measurement includes bones and shells. Atlantic salmon produced by far the highest economic value, followed by Pacific cupped oyster, Rainbow trout, Gilthead sea bream and European sea bass. Despite the large number of species, countries tend to focus their aquaculture production on very few species each. As such, mussels accounted for about three quarters (76 %) of the live weight from aquaculture in Spain in 2012; oysters accounted for two fifths (39 %) and mussels for about one third (29 %) of the live weight in France; salmon, mussels and trout accounted for the vast majority (98 %) of total aquaculture production in the United Kingdom.

In 2012, aquaculture production in Norway (1.32 million tonnes of live weight) overtook that of the entire EU-28 (1.25 million tonnes of live weight) for the first time (see Figure 7.1). Unlike the EU, aquaculture production in Norway continued to expand rapidly after 1995. Most recently, Norwegian aquaculture production has doubled in only seven years (in 2005 it stood at 0.66 million tonnes). This growth has been largely focused on a single species: the Atlantic salmon.

7.4 Catches

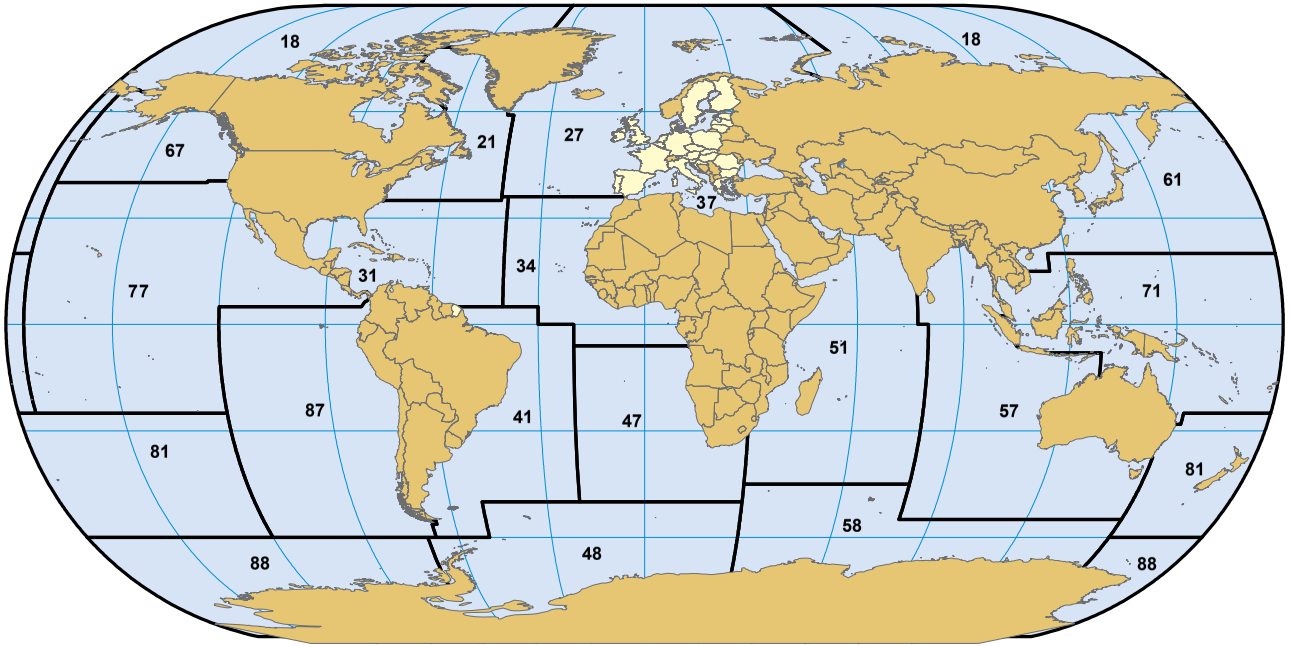
About 80 % of the EU-28's total fishery production relates to catches. The live weight of catches for the EU-28 was 4.8 million tonnes in 2013, 8.8 % more than in 2012. However Table 7.6 illustrates an overall decline of about 37 % or 2.8 million tonnes of live weight since 1995.

Table 7.6: Total catches in all fishing regions, 1995–2013 ([1])
(1 000 tonnes live weight)

	1995	2000	2005	2010	2011	2012	2013
EU-28	7 636	6 548	5 496	4 996	4 832	4 419	4 807
Belgium	35	29	24	22	22	24	25
Bulgaria	7	6	3	10	9	8	10
Czech Republic ([2])	0	0	0	0	0	0	0
Denmark	1 999	1 534	911	828	716	503	668
Germany	216	183	264	215	218	205	219
Estonia	130	110	97	92	78	63	67
Ireland	388	277	267	316	206	276	246
Greece	148	96	91	70	63	61	64
Spain	1 148	987	717	742	799	758	882
France	666	692	586	440	487	461	529
Croatia	16	21	35	52	71	64	75
Italy	387	298	294	230	213	196	173
Cyprus	3	67	2	1	1	1	1
Latvia	149	136	150	164	156	90	116
Lithuania	56	77	138	138	137	70	75
Luxembourg ([2])	0	0	0	0	0	0	0
Hungary ([2])	0	0	0	0	0	0	0
Malta	5	1	1	2	2	2	2
Netherlands	415	494	547	376	365	345	324
Austria ([2])	0	0	0	0	0	0	0
Poland	143	146	131	130	176	180	195
Portugal	270	189	219	223	214	196	194
Romania	40	2	2	0	1	1	2
Slovenia	2	2	1	1	1	0	0
Slovakia ([2])	0	0	0	0	0	0	0
Finland	106	121	95	127	125	138	144
Sweden	403	337	255	211	180	150	177
United Kingdom	908	743	665	605	595	626	618
Iceland	1 623	2 000	1 661	1 063	1 154	1 452	1 384
Norway	2 518	2 699	2 392	2 562	2 178	2 047	1 944
Turkey	586	461	380	446	478	396	339

([1]) Total catches in all fishing regions are calculated as the sum of the seven regions covered by legal acts, namely: 21 - Atlantic, Northwest, 27 - Atlantic, Northeast, 34 - Atlantic, Eastern Central, 37 - Mediterranean and Black Sea, 41 - Atlantic, Southwest, 47 - Atlantic, Southeast and 51 - Indian Ocean, Western. Consequently, total catches in all fishing areas now exclude catches in inland waters.
([2]) The Czech Republic, Luxembourg, Hungary, Austria and Slovakia are landlocked countries without a marine fishing fleet.
Source: Eurostat (online data code: fish_ca_main)

Map 7.1: Fishing areas of the world



Source: UN FAO, VLIZ, DG MARE Unit D.4., 19/12/2014

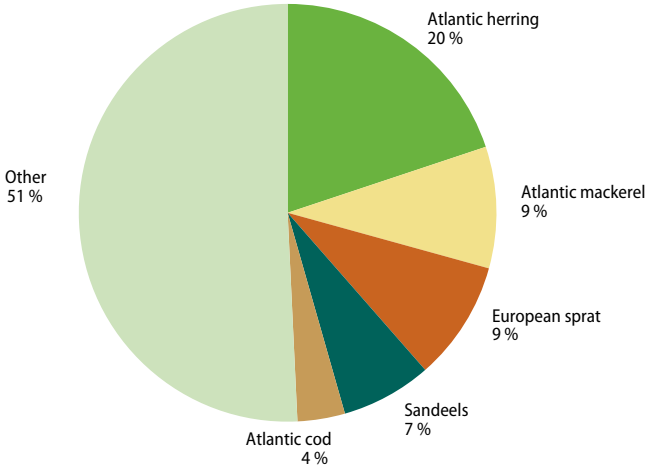
Table 7.7: Catches, by fishing area, 2013
(1 000 tonnes live weight)

	Fishing area							
	North West Atlantic	North East Atlantic	Eastern Central Atlantic	Mediter-ranean and Black Sea	South West Atlantic	South East Atlantic	Western Indian Ocean	Total
EU-28	43	3 601	380	425	125	45	188	4 807
Belgium	:	25	:	:	:	:	:	25
Bulgaria	:	:	:	10	:	:	:	10
Czech Republic (1)	:	:	:	:	:	:	:	:
Denmark	3	665	:	:	:	:	:	668
Germany	2	217	:	:	:	:	:	219
Estonia	5	62	:	:	:	:	:	67
Ireland	:	246	:	:	:	:	:	246
Greece	:	:	1	63	:	:	:	64
Spain	14	322	154	83	123	43	144	882
France	:	432	38	16	0	2	41	529
Croatia	:	:	:	75	:	:	:	75
Italy	:	:	:	173	:	:	:	173
Cyprus	:	:	:	1	:	:	:	1
Latvia	:	63	53	:	:	:	:	116
Lithuania	:	14	60	:	:	:	:	75
Luxembourg (1)	:	:	:	:	:	:	:	:
Hungary (1)	:	:	:	:	:	:	:	:
Malta	:	:	:	2	:	:	:	2
Netherlands	:	312	13	:	:	:	:	324
Austria (1)	:	:	:	:	:	:	:	:
Poland	:	141	54	:	:	:	:	195
Portugal	18	165	6	0	2	1	2	194
Romania	:	:	:	2	:	:	:	2
Slovenia	:	:	:	0	:	:	:	0
Slovakia (1)	:	:	:	:	:	:	:	:
Finland	:	144	:	:	:	:	:	144
Sweden	:	177	:	:	:	:	:	177
United Kingdom	1	616	0	:	:	:	1	618
Iceland	0	1 384	:	:	:	:	:	1 384
Norway	3	1 941	:	:	:	:	:	1 944
Turkey	:	:	:	339	:	:	:	339

(1) The Czech Republic, Luxembourg, Hungary, Austria and Slovakia are landlocked countries without a marine fishing fleet.
Source: Eurostat (online data code: fish_ca_main)

Although the European fishing fleet operates worldwide, EU catches are taken primarily from the Eastern Atlantic and the Mediterranean (see Table 7.7). Indeed, almost 75 % of EU-28 catches were made in the North East Atlantic in 2013, with another 8.8 % coming from the Mediterranean and Black Sea and 7.9 % from the Eastern Central Atlantic.

Figure 7.2: Top 5 species caught by EU Member States in the North East Atlantic, 2013



Source: Eurostat

Figure 7.2 shows the five most popular species that were caught by EU Member States in 2013 in the North East Atlantic which is their most important fishing area. Atlantic herring was by far the most caught species representing one fifth of the total EU-28 catch. It was followed by Atlantic mackerel and European sprat — each accounting for 9 % — then Sandeels (7 %) and Atlantic cod (4 %). These top five species made up half of the EU North East Atlantic catch in 2013.

7.5 Landings

Landings data relate to fishery products (product weight and value) landed in a country regardless of the nationality of the vessel making the landings, but also to fishery products landed by the country's vessels in non-Community ports and then imported into the EU. A little less than one fifth (18.4 % or 0.7 million tonnes of live weight) of the landings to EU-28 ports in 2012 were made in Spain, the highest share among EU Member States. Only landings to Danish ports (0.6 million tonnes of product weight) came close to the Spanish levels. By contrast, landings to ports in Iceland (1.4 million tonnes) and Norway (1.9 million tonnes) were much higher.

Table 7.8: Landings, by weight, 1995–2012
(1 000 tonnes product weight)

	1995	2000	2005	2010	2011	2012
EU-28	:	:	4 640	4 374	4 197	3 992
Belgium	21	18	20	16	17	18
Bulgaria	:	:	3	10	9	8
Czech Republic	0	0	0	0	0	0
Denmark	2 303	1 144	1 091	1 067	911	614
Germany	142	89	140	80	117	107
Estonia	:	:	69	87	71	64
Ireland	342	203	199	248	181	341
Greece	133	90	90	70	63	61
Spain	1 081	984	703	755	713	733
France	:	371	295	255	418	439
Croatia	:	:	:	:	70	62
Italy	359	295	282	229	213	196
Cyprus	:	:	1	1	1	1
Latvia	:	:	91	67	59	60
Lithuania	:	:	7	6	6	3
Luxembourg	0	0	0	0	0	0
Hungary	0	0	0	0	0	0
Malta	:	:	1	2	2	(c)
Netherlands	534	509	621	444	388	373
Austria	0	0	0	0	0	0
Poland	:	:	82	84	88	105
Portugal	236	164	106	183	182	140
Romania	:	:	:	0	1	1
Slovenia	:	:	:	1	1	0
Slovakia	0	0	0	0	0	0
Finland	:	96	84	83	78	103
Sweden	217	314	269	221	171	109
United Kingdom	740	420	486	464	438	454
Iceland	:	1 947	1 680	1 018	1 147	1 431
Norway	2 352	2 792	2 078	2 422	1 966	1 912

Source: Eurostat (online data code: fish_ld)

About one quarter of the value of landings for the EU-28 in 2012 also came into Spanish ports (26.2 % or EUR 1.8 billion), reflecting the high value attached to its landings of species like tuna, hake, swordfish, squid and pilchards. Landings in France had the next highest value (EUR 1 billion), followed by Italy (EUR 0.9 billion) and the United Kingdom (EUR 0.8 billion). Denmark only accounted for a relatively small share (6.1 % in 2012) of EU-28 landings in terms of value (EUR 0.4 billion). The values of landings to ports in Iceland (EUR 1.1 billion) and Norway (EUR 2.1 billion) were closer to the values in France and Spain respectively, reflecting the lower average price of the species landed in each of these countries.

Table 7.9: Landings by value, 1995–2012
(million EUR)

	1995	2000	2005	2010	2011	2012
EU-28	:	:	5 972	6 604	7 181	7 047
Belgium	57	64	80	66	70	65
Bulgaria	:	:	2	2	3	5
Czech Republic	0	0	0	0	0	0
Denmark	499	423	442	462	495	426
Germany	118	95	122	95	130	144
Estonia	:	:	10	18	18	21
Ireland	140	184	149	288	261	397
Greece	270	236	308	399	331	317
Spain	1 895	1 751	1 513	1 869	1 766	1 843
France	:	845	775	527	1 082	986
Croatia	:	:	:	:	81	52
Italy	882	823	1 413	1 148	1 103	925
Cyprus	:	:	6	10	8	8
Latvia	:	:	16	13	17	19
Lithuania	:	:	5	5	7	4
Luxembourg	0	0	0	0	0	0
Hungary	0	0	0	0	0	0
Malta	:	:	6	9	11	(c)
Netherlands	325	357	310	573	563	582
Austria	0	0	0	0	0	0
Poland	:	:	32	41	45	61
Portugal	280	272	127	237	251	252
Romania	:	:	:	0	1	1
Slovenia	:	:	:	2	2	1
Slovakia	0	0	0	0	0	0
Finland	:	20	15	19	24	29
Sweden	77	112	106	100	104	95
United Kingdom	630	693	537	719	806	815
Iceland	:	829	940	807	1 029	1 052
Norway	1 105	1 540	1 607	1 758	2 013	2 118

Source: Eurostat (online data code: fish_ld)

DATA SOURCES AND AVAILABILITY

Fishery statistics are collected by Eurostat from official national sources for the members of the European Economic Area (EEA). The data are collected using internationally agreed concepts and definitions developed by the Coordinating Working Party (CWP), comprising Eurostat and several other international organisations with responsibilities in fishery statistics.

The European fisheries production statistics include production from catches and aquaculture. **Catches** refer to fishery products taken for all purposes (commercial, industrial, recreational and subsistence) by all types and classes of fishing units (including fishermen, vessels, gear, etc.). The flag of the fishing vessel is used as the primary indication of the nationality of the catch. In addition to catches, Eurostat also collects data on **landings** which relate to all fishery products (expressed as product weight) landed in the reporting country, regardless of the nationality of the vessel making the landings. Landings by vessels of the reporting country in non-Community ports and imported into the EU are to be included as well. **Aquaculture** production refers to the farming of aquatic (freshwater or saltwater) organisms for human use or consumption, under controlled conditions. Aquaculture implies some form of intervention in the natural rearing process such as regular stocking, feeding and protection from predators. Farming also implies individual or corporate ownership of the stock being cultivated.

Catch statistics are submitted to Eurostat by EEA member countries in compliance with the following EU legislation:

- Regulation (EC) No 218/2009 of 11 March 2009 on the submission of nominal catch statistics by Member States fishing in the North-East Atlantic (OJ L87 of 31.03.2009);
- Regulation (EC) No 217/2009 of 11 March 2009 on the submission of catch and activity statistics by Member States fishing in the North-West Atlantic (OJ L87 of 31.03.2009);
- Regulation (EC) No 216/2009 of 11 March 2009 on the submission of nominal catch statistics by Member States fishing in certain areas other than those of the North Atlantic (OJ L87 of 31.03.2009, p.1).

The data are reported as the live weight equivalent of the landings (in other words, the landed weight of a product to which an appropriate conversion factor has been applied). The data therefore exclude quantities of fishery products which are caught but not landed. For example, fish caught but rejected at sea or fish consumed on board the vessel. The amount of fish caught but not landed is bound to shrink in the near future due to the landing obligation in the new Common Fisheries Policy (CFP). For the **landings statistics**, each EEA member country reports annual data on the quantities and values of fishery products landed in its ports under the terms of Regulation (EC) 1921/2006 of 18 December 2006 on the submission of statistical data on landings of fishery products in EU Member States and repealing Council Regulation (EEC)1382/91 (OJ L403 of 30 December 2006). For **aquaculture statistics**, the national authorities of EEA countries submit aquaculture production data to Eurostat under the terms of Regulation (EC) No 762/2008 of 9 July 2008 on the submission by Member States of statistics on aquaculture and repealing Council Regulation (EC) 788/96 (OJ L218 of 13.08.2008).

Concerning the **fishing fleet**, data for the EU Member States are derived from the Community Fishing Fleet Register maintained by the European Commission's Directorate-General for Fisheries and Maritime Affairs. Data for Iceland and Norway are compiled from fleet files submitted by the national authorities. Gross tonnage (GT) under the London convention (1969) was adopted as the unit of tonnage measurement in the 1990s. This was a change from the previously used gross registered tonnage (GRT) under the Oslo convention (1946). Implementation of the change involved re-measurement of vessels over time. This was carried out at different rates in different countries and was largely complete by 2003. However care should be taken when comparing data between countries and over time since the GT of a vessel is generally significantly greater than the GRT.

Data coverage

Eurostat online databases contain a large amount of metadata that provides information on the status of particular values or data series. In order to improve readability of this publication, only the most significant meta-information has been included under the tables and figures. The following symbols are used, where necessary:

Italic data value is forecasted, provisional or estimated and is likely to change;

: not available, confidential or unreliable value;

– not applicable.

Breaks in series are indicated in the footnotes provided under each table and figure.

This publication generally presents information for the EU-28 (the 28 Member States of the EU), as well as the individual EU Member States. The order of the Member States in tables and figures generally follows their order of protocol; in other words, the alphabetical order of the countries' names in their respective original languages. In some of the figures the data are ranked according to the values of a particular indicator.

The EU-28 aggregate is provided when information for all of the countries is available, or if an estimate has been made for missing information. Any incomplete totals that are created are systematically footnoted.

When available, information is also presented for EFTA countries (Liechtenstein, Norway, Switzerland and Iceland, which is also an EU candidate country) and the candidate countries (Montenegro, the former Yugoslav Republic of Macedonia, Serbia and Turkey). In the event that data for any of these non-member countries are not available, they have been excluded from the tables and figures presented.

If data are not available for a particular country, then efforts have been made to fill tables and figures with data for previous reference periods (these exceptions are footnoted); generally, an effort has been made to go back at least two years, for example showing data for 2011 or 2012 if data for 2013 are not yet available.

Glossary

Agricultural holding

This is a single unit, in both technical and economic terms, operating under a single management, which undertakes agricultural activities within the economic territory of the European Union (EU), either as its primary or secondary activity. Other supplementary (non-agricultural) products and services may also be provided by the holding.

Agricultural income

The main indicator for agricultural income is 'factor income per labour input', where labour input is expressed in annual work units (AWUs).

Agri-environmental indicators

A set of 28 agri-environmental indicators has been proposed for monitoring the integration of environmental concerns into the Common Agricultural Policy (CAP). In the context of the 'Renewed EU Sustainable Development Strategy', these indicators serve to:

- provide information on the farmed environment;
- track the impact of agriculture on the environment;
- assess the impact of agricultural and environmental policies on environmental management of farms;
- inform agricultural and environmental policy decisions;
- illustrate agri-environmental relationships to the broader public.

Animal output

Animal output comprises the sales, changes in stock levels, and the products used for processing and own final use by producers.

Annual work unit (AWU)

One annual work unit corresponds to the work performed by one person who is occupied on an agricultural holding on a fulltime basis. Full-time means the minimum hours required by the relevant national provisions governing contracts of employment. If the national provisions do not indicate the number of hours, then 1 800 hours are taken to be the minimum annual working hours: equivalent to 225 working days of eight hours each.

Aquaculture

Aquaculture, also known as aquafarming, refers to the farming of aquatic (freshwater or saltwater) organisms, such as fish, molluscs, crustaceans and plants for human use or consumption, under controlled conditions. Aquaculture implies some form of intervention in the natural rearing process to enhance production, including regular stocking, feeding and protection from predators. Farming also implies individual or corporate ownership of, or contractual rights to, the stock being cultivated.

Arable land

Arable land is land worked (ploughed or tilled) regularly, generally under a system of crop rotation.

Biodiversity

Biodiversity, a contraction of biological diversity, refers to the number, variety and variability of living organisms, including mankind, within a given area.

Biomass

Biomass is organic, non-fossil material of biological origin that can be used for heat production or electricity generation. It includes:

- wood and wood waste;
- biogas;
- municipal solid waste;
- biofuels.

Bovine

Bovine refers to a domestic animal of the species *Bos taurus* (cattle) or *Bubalus bubalis* (water buffalo), and also includes hybrids like *Beefalo*.

A distinction can be made by the age of the animal (less than one year old, aged between one and two years, and two years and over), with a further division between male and female bovines.

Carcass weight

The definition of carcass weight depends on the animal species under consideration:

- for pigs, it is the weight of the slaughtered pig's cold body, either whole or divided in half along the mid-line, after being bled and eviscerated and after removal of the tongue, bristles, hooves, genitalia, flare fat, kidneys and diaphragm;
- for cattle, it is the weight of the slaughtered animal's cold body after being skinned, bled and eviscerated, and after removal of the external genitalia, the limbs, the head, the tail, the kidneys and kidney fats, and the udder;
- for sheep and goats, it is the weight of the slaughtered animal's cold body after having been bled, skinned and eviscerated, and after removal of the head, feet, tail and genital organs. Kidneys and kidney fats are included in the carcass weight;
- for poultry, it is the weight of the cold body of the slaughtered farmyard poultry after being bled, plucked and eviscerated; the weight includes poultry offal, with the exception of foie gras.

For other species, 'carcass weight' is considered to be the weight of the slaughtered animal's cold body.

Cattle

Cattle refer to domestic animals of the species *Bos taurus* (cattle), including hybrids like *Beefalo*; together with *Bubalus bubalis* (water buffalo), they are called bovines.

Census

A census is a survey conducted on the full set of observation objects belonging to a given population or universe.

Cereals

Cereals include wheat (common wheat and spelt and durum wheat), rye, maslin, barley, oats, mixed grain other than maslin, grain maize and corn cob mix, sorghum, triticale, rice and other cereal crops such as buckwheat, millet and canary seed.

Climate change

Climate change refers to man-made (anthropogenic) climate change that is thought to be causing an increase in global temperatures driven by emissions of gases such as carbon dioxide and methane, known as greenhouse gases.

Common Agricultural Policy

The Common Agricultural Policy (CAP) is the EU's agricultural policy. CAP is an area in which competence is shared between the EU and its Member States. Under Article 33 of the Treaty establishing the European Community, its aims are to 'ensure reasonable prices for Europe's consumers and fair incomes for farmers, in particular through the common organisation of agricultural markets and by enforcing compliance with the principles adopted at the Stresa Conference in 1958, namely single prices, financial solidarity and Community preference'.

The CAP is one of the most important EU policies from a budget point of view: agricultural spending accounts for some 40 % of the EU budget. Qualified majority voting in the Council and consultation with the European Parliament decide policy. The CAP has fulfilled its main goal of food self-sufficiency in the EU. Major policy changes, however, proved necessary in order to correct imbalances and overproduction resulting from the CAP. Therefore, its aims have changed in the course of time, and the instruments used have also evolved as a result of successive reforms.

Common Fisheries Policy

The Common Fisheries Policy (CFP) is the EU's policy for managing fisheries in the waters of the EU Member States. Its objectives are:

- increasing productivity;
- stabilising markets;
- ensuring security of supply and reasonable prices to the consumer.

Although a Common Fisheries Policy was already provided for in the Treaty of Rome in 1957, it did not become a common policy in the full sense of the term until 1983. The CFP has the same legal basis (Articles 32–38 of the EC Treaty) as the Common Agricultural Policy and shares the same aims as mentioned above. Like the CAP, the CFP is a shared responsibility of the EU and its Member States. Successive reforms of the CFP have added new aims to its initial goals, namely:

- sustainable exploitation of resources;
- protection of the environment;
- safeguards for a high level of human health protection;
- contributing to economic and social cohesion.

Protection of fish stocks and the marine environment are key issues for the CFP given the threat posed by resource depletion.

Common land

Common land is the land that does not directly belong to any agricultural holding but on which common rights apply. It can consist of pasture, horticultural or other land.

Cow

A cow is a female bovine that has calved (including any aged less than 2 years). A dairy cow is a cow kept exclusively or principally for the production of milk for human consumption and/or other dairy produce.

Crop output

Crop output comprises sales, changes in stock levels, and crop products used as animal feedstuffs, or for processing and own final use by the producers.

Eutrophication

Eutrophication is a process by which a body of water acquires a high concentration of nutrients, especially phosphates and nitrates. It may occur naturally but can also be the result of human activity (fertiliser run-off, sewage discharge). These nutrients typically promote excessive growth of algae. As the algae die and decompose, high levels of organic matter and the decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish.

Family labour force

The family labour force of the agricultural holding in the context of the farm structure survey (FSS) refers to persons who carry out farm work on the holding and are classified either as a holder or the members of the sole holder's family. The term family workers is also used with the same meaning.

Farm labour force

The farm labour force of the holding includes all persons having completed their compulsory education (having reached school-leaving age) who carried out farm work on the holding during the 12 months ending on the reference day of the survey. All persons of retirement age who continue to work on the holding are included in the farm labour force.

Farm manager

A farm manager or manager of the agricultural holding is the natural person responsible for the normal daily financial and production routines of running the holding concerned. In the context of the farm structure survey (FSS), a manager is considered to be non-family labour. A holder of the holding who is a natural person and the sole holder of an independent holding is generally, but not necessarily, also the manager. There can be only one manager on the holding.

Farm structure survey

The basic Farm structure survey (FSS), also known as Survey on the structure of agricultural holdings, is carried out by all EU Member States. The FSS is conducted consistently throughout the EU with a common methodology at a regular base and provides therefore comparable and representative statistics across countries and time, at regional levels (down to NUTS 3 level). Every 3 or 4 years the FSS is carried out as a sample survey, and once in the ten years as a census.

Feed

Feed (or feeding stuff) is any substance or product, including additives, whether processed, partially processed or unprocessed, intended to be used for oral feeding to animals.

Fertiliser

A fertiliser is a substance used in agriculture to provide crops with vital nutrients to grow (such as nitrogen (N), phosphorus (P) and potassium (K)). Fertilisers can be divided into inorganic fertilisers (also called mineral, synthetic or manufactured) and organic fertilisers. Organic fertilisers include manure, compost, sewage sludge and industrial waste.

Fishing area

Geographical fishing areas in the EU's Common Fisheries Policy are defined for a number of specific areas of water, including:

- the *North East Atlantic*, which is roughly the area to the east of 42°W longitude and north of 36°N latitude, including the waters of the Baltic Sea;
- the *North West Atlantic*, which is the region that is roughly the area to the west of 42°W longitude and north of 35°N latitude;
- the *Eastern Central Atlantic*, which is the region that is roughly the area to the east of 40°W longitude between latitudes 36°N and 6°S;
- the *Mediterranean*, which is also known as the Food and Agriculture Organization Major Fishing Area 37, comprises the Mediterranean Sea and the adjacent Black Sea.

Fish catch

Fish catch (or simply catch) refers to catches of fishery products including fish, molluscs, crustaceans and other aquatic animals, residues and aquatic plants that are:

- taken for all purposes (commercial, industrial, recreational and subsistence);
- taken by all types and classes of fishing units (including fishermen, vessels, gear, and so on);
- operated in fresh and brackish water areas, and in inshore, offshore and high-seas fishing areas.

The catch is normally expressed in live weight and derived by the application of conversion factors to the actual landed or product weight. As such, catch statistics exclude quantities of fishery products which are caught but which, for a variety of reasons, are not landed. Production from aquaculture is excluded from catch statistics.

Fishing fleet

The data on the number of fishing vessels, the fishing fleet, in general refer to the fleet size as recorded on 31 December of the specified reference year. The data are derived from the national registers of fishing vessels which are maintained according to Commission Regulation (EC) No 26/2004 which specifies the information on vessel characteristics to be recorded in the registers.

Forest

Forest is defined as land with tree crown cover (meaning all parts of the tree above ground level including its leaves, branches and so on), or equivalent stocking level, of more than 10 % and with an area of more than 0.5 hectares (ha). The trees should be able to reach a minimum height of five metres at maturity *in situ*.

Fossil fuel

Fossil fuel is a generic term for non-renewable natural energy sources such as coal, natural gas and oil that were formed from plants and animals (biomass) that existed in the geological past (for example, hundreds of millions of years ago). Fossil fuels are carbon-based and currently supply most human energy requirements.

Goats

A goat is a domestic animal of the subspecies *Capra aegagrus hircus*.

Grazed area

The grazed area is the total area of pastures owned, rented or otherwise allocated to the agricultural holding on which animals are kept for grazing during the reference year. The grazed area can also be harvested by mowing or other means. It includes all grasslands that are grazed, independent of whether they are temporary or permanent in nature. Permanent grasslands no longer used for production purposes are however excluded, as well as common lands not allotted to individual holdings.

Greenhouse gas

Greenhouse gases constitute a group of gases contributing to global warming and climate change. The Kyoto Protocol, an environmental agreement adopted by many of the parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 1997 to curb global warming, covers six greenhouse gases:

- *non-fluorinated gases*:
  - carbon dioxide (CO_2);
  - methane (CH_4);
  - nitrous oxide (N_2O).
- *fluorinated gases*:
  - hydrofluorocarbons (HFCs);
  - perfluorocarbons (PFCs);
  - sulphur hexafluoride (SF_6).

Gross value added (GVA)

Gross value added (GVA) is output at market prices minus intermediate consumption at purchaser prices; it is a balancing item of the national accounts' production account:

- GVA at producer prices is output at producer prices minus intermediate consumption at purchaser prices — the producer price is the amount receivable by the producer from the purchaser for a unit of a product minus value added tax (VAT), or similar deductible tax, invoiced to the purchaser.
- GVA at basic prices is output at basic prices minus intermediate consumption at purchaser prices — the basic price is the amount receivable by the producer from the purchaser for a unit of a product minus any tax on the product plus any subsidy on the product.
- GVA at factor cost is not a concept explicitly used in national accounts. It can be derived by subtracting other taxes on production *from GVA at basic prices and adding other subsidies on production.*

Joint Forest Sector Questionnaire

The joint forest sector questionnaire (JFSQ) is an initiative of the International Tropical Timber Organisation (ITTO), the United Nations Economic Commission for Europe (UNECE), the Food and Agriculture Organisation of the United Nations (FAO) and Eurostat to collect statistics on the world timber situation. Each agency collects data from the countries for which it is responsible, with Eurostat compiling information from the EU Member States and EFTA countries.

Kitchen gardens

Kitchen gardens are areas of an agricultural holding devoted to the cultivation of agricultural products not intended for selling but for consumption by the farm holder and his household.

Land use

Land use refers to the socioeconomic purpose of the land. Areas of land can be used for residential, industrial, agricultural, forestry, recreational, transport purposes and so on.

Live weight of fishery products

Live weight of fishery products is derived from the landed or product weight by the application of certain factors and is designed to represent the actual weight of the fishery product as it was taken from the water and before being subjected to any processing or other operations.

Livestock survey

The livestock survey provides information about the livestock population in the EU, as well as information at a national and regional level — it is more detailed than the farm structure survey (FSS), proving more animal categories in its classification of livestock. It is conducted once a year, in December, in all of the EU Member States and in May/June for bovine animals and pigs in the Member States with the largest herds.

Livestock unit (LSU)

The livestock unit is a reference unit which facilitates the aggregation of livestock from various species and age as per convention, via the use of specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal. The reference unit used for the calculation of livestock units (=1 LSU) is the grazing equivalent of one adult dairy cow producing 3000 kg of milk annually, without additional concentrated foodstuffs.

Meat production

Meat production refers to the slaughter, in agreed slaughterhouses, of animals whose carcass weight is declared fit for human consumption; the definition applies to bovine animals, pigs, sheep, goats and poultry.

Milk

Milk is produced by the secretion of the mammary glands of one or more cows, ewes, goats or buffaloes. Farms produce milk for two distinct purposes: to distribute to dairies as well as for domestic consumption, direct sale and cattle feed.

Non-family labour

The non-family labour force of the agricultural holding in the context of the farm structure survey (FSS) refers to persons directly employed by the holding. They can be classified as:

- non-family labour regularly employed — all persons other than the holder and members of his family doing farm work and receiving any kind of remuneration (salary, wages, profits or other payments including payment in kind) from the agricultural holding;
- non-family labour employed on a non-regular basis — all persons other than the holder and members of his family doing farm work and receiving any kind of remuneration from the agricultural holding who did not work each week on the agricultural holding in the 12 months ending on the reference day of the survey; this category usually covers seasonal workers.

Permanent crops

Permanent crops are tree/shrub crops not grown in rotation, but occupying the soil and yielding harvests for several (usually more than five) consecutive years. Permanent crops mainly consist of fruit tree, berry, plantations, vines and olive trees.

Permanent grassland and meadow

Permanent grassland and meadow is land used permanently (for several — usually more than five — consecutive years) to grow herbaceous forage crops, through cultivation (sown) or naturally (self-seeded); it is not, therefore, included in the crop rotation scheme on the agricultural holding. Permanent grassland and meadow can be either used for grazing by livestock, or mowed for hay or silage (stocking in a silo).

Pig

A pig is a domesticated animal of the species *Sus*. A distinction is made between pigs, piglets, fattening pigs and breeding pigs.

Poultry

Poultry refers to domestic birds of the following species: *Gallus gallus* (hens and chickens); *Meleagris spp.* (turkeys); *Anas spp. and Cairina moschata* (ducks); *Anser anser dom.* (geese); *Coturnix spp.* (quail); *Phasianus spp.* (pheasants); *Numida meleagris dom.* (guineafowl); *Columbinae spp.* (pigeons); *Struthio camelus* (ostriches). It excludes, however, birds raised in confinement for hunting purposes and not for meat production.

Producer price

The producer price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any value added tax (VAT), or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer.

Regular agricultural labour force

A regularly employed labour force of the agricultural holding in the context of the farm structure survey (FSS) refers to the directly employed persons who carried out farm work every week on the holding during the 12 months ending on the reference day of the survey, irrespective of length of the working week. Regularly employed labour force may be classified either as a family labour or the non-family labour regularly employed.

Roundwood production

Roundwood production (the term is also used as a synonym for removals in the context of forestry) comprises all quantities of wood removed from the forest and other wooded land, or other tree felling site during a defined period of time.

Sawnwood

Sawnwood is wood that has been produced either by sawing lengthways or by a profile-chipping process and, with a few exceptions, that exceeds 6 millimetres (mm) in thickness.

Sheep

Sheep are domesticated animals of the species *Ovis aries* kept in flocks mainly for their wool or meat.

Slaughterhouse

A slaughterhouse is an officially registered and approved establishment used for slaughtering and dressing animals whose meat is intended for human consumption.

Slaughtering and meat production

Data on slaughtering and meat production are collected on a monthly basis. They refer to the activity of slaughterhouses, while the share of domestic slaughtering (in other words, outside officially recognised slaughterhouses) is explicitly left out of the statistics in order to improve comparability of the results across EU Member States.

Standard gross margin (SGM)

The standard gross margin (SGM) is a measure of the production or the business size of an agricultural holding. It is based on the separate activities or 'enterprises' of a farm and their relative contribution to overall revenue.

Standard output (SO)

The standard output of an agricultural product (crop or livestock) is the average monetary value of the agricultural output at farmgate price, in euro per hectare or per head of livestock. A regional coefficient for each product is applied, as an average value over a reference period (five years). The sum of all the standard outputs per hectare of crop and per head of livestock for a farm is a measure of its overall economic size, expressed in euro.

Utilised agricultural area (UAA)

The utilised agricultural area (UAA) describes the area used for farming. It includes the land categories: arable land; permanent grassland; permanent crops, and; other agricultural land such as kitchen gardens (even if they only represent small share of the total UAA). The term does not include unused agricultural land, woodland and land occupied by buildings, farmyards, tracks, ponds, and so on.

Waste

Waste means any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force. Disposal of waste means:

- the collection, sorting, transport and treatment of waste as well as its storage and tipping above or underground;
- the transformation operations necessary for its re-use, recovery or recycling.

Abbreviations

Geographical aggregates and country codes

EU-28	European Union of 28 Member States
EU-27	European Union of 27 Member States
EU-15	European Union of 15 Member States
EU	European Union
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
IS	Iceland
LI	Liechtenstein
NO	Norway
CH	Switzerland

ME	Montenegro
MK (1)	The former Yugoslav Republic of Macedonia
RS	Serbia
TR	Turkey

In this publication like in the other Eurostat publications, the geographical descriptions and the use of the terms 'southern', 'northern', 'central', 'eastern' and 'western' Europe are not meant as political categorisations. The references in the text are made in relation to the geographical location of one group of Member States of the European Union in comparison to another group of Member States.

Units of measurement

%	per cent
AWU	annual work unit
EUR	euro
ha	hectare
kg	kilogram
km^2	square kilometre
kW	kilowatt
LSU	livestock unit
m^3	cubic metre
toe	tonne of oil equivalent
tonne	1 000 kg

Other abbreviations

AEI	agri-environmental indicators
CAP	Common Agricultural Policy
CFP	Common Fisheries Policy
CLRTAP	Convention on Long-range transboundary air pollutants
COM	Communication
CMO	Common Market Organisation
EAA	economic accounts for agriculture
EC	1. European Community 2. European Commission
EEA	European Environment Agency
EEC	European Economic Community
EFTA	European Free Trade Association
EMEP	European Monitoring and Evaluation Programme

(1) Provisional ISO code which does not prejudge in any way the definitive nomenclature for this country, which is to be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

Eurostat	statistical office of the European Union
FLEGT	forest law enforcement, governance and trade
FSS	farm structure survey
HICP	harmonised index of consumer prices
LULUCF	land-use, land change and forestry
NH_3	ammonia
NH_4	ammonium
NO_3	nitrate
N	nitrogen
N_2O	nitrous oxide
NUTS	classification of territorial units for statistics (NUTS levels 1, 2 and 3)
P	phosphorus
SAPM	survey on agricultural production methods
UAA	utilised agricultural area
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change

How to obtain EU publications

Free publications:

- ***one copy:***
  via EU Bookshop (http://bookshop.europa.eu);

- ***more than one copy or posters/maps:***
  – from the European Union's representations
  (http://ec.europa.eu/represent_en.htm);
  – from the delegations in non-EU countries
  (http://eeas.europa.eu/delegations/index_en.htm);
  – by contacting the Europe Direct service
  (http://europa.eu/europedirect/index_en.htm) or
  – calling 00 800 6 7 8 9 10 11
  (freephone number from anywhere in the EU) (*).

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Priced publications:

- via EU Bookshop (http://bookshop.europa.eu).

Priced subscriptions:

- via one of the sales agents of the Publications Office of the European Union (http://publications.europa.eu/others/agents/index_en.htm).

Agriculture, forestry and fishery statistics

2014 edition

This publication presents a selection of topical data. Most data cover the European Union and its Member States, while some indicators are provided for other countries, such as members of EFTA, acceding and candidate countries to the European Union.

This publication may be viewed as an introduction to European statistics and provides a starting point for those who wish to explore the wide range of data that is freely available on Eurostat's website at

http://ec.europa.eu/eurostat

KS-FK-14-001-EN-N

ISBN 978-92-79-43201-9

Publications Office

doi:10.2785/59171