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Agricultural Market Brief

N°20

Organic farming in the EU

A decade of organic growth

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Agriculture and Rural Development

CONTENTS

HIGHLIGHTS

Organic farming is an agricultural method to produce food and feed using natural substances and processes. Its key contribution to a more sustainable agriculture is acknowledged in the Common Agricultural Policy (CAP). An action plan for the development of organic production in the EU was adopted in 2021[a] to support both production and consumption, and to further enhance sustainability, in line with the European Green Deal, the Farm to Fork Strategy[b] and the Biodiversity Strategy.

Data available on EU production and consumption of organic food show a growing trend in the 2010-2020 decade. With 14.8 million ha in 2020, the area under organic farming represented 9.1% [c] of the total EU agricultural land and close to 20% of the area under organic farming in the world. The largest share was dedicated to permanent grassland (42%), followed by green fodder (17%), cereals (16%), and permanent crops, such as fruit, olives and vineyards (11%). Despite significant growth, EU organic animal production accounts for a small share of total EU animal production, between 1% and 7% depending on the sector. On average, organic farms are bigger than conventional farms and run by younger farm managers.

The environmental, economic and social benefits of organic farming are shown by data from the EU Farm Accountancy Data Network and meta-analyses of scientific research, with results varying significantly across sectors and Member States. For instance, organic arable crop farms save 75-100% on plant protection product costs per hectare and 45-90% on fertiliser costs per hectare compared to conventional farms, and they generate a higher or similar income per working unit.

On average, despite lower yields, organic farms generate a similar or higher income per worker thanks to higher prices and higher levels of EU support, stemming mainly from the CAP, with a range of approaches across Member States in their strategic plans.

Compared to 2015, the EU organic retail sales almost doubled in 2020, and the area under organic farming grew by 41%. Imports from non-EU countries, in particular tropical fruit, increased between 2018 and 2021. Measures under the organic action plan and the CAP aim at sustaining growth, which may be affected by economic developments such as food inflation affecting EU consumers' purchasing power, and therefore demand for organic products.

Organic farming is a knowledge-intensive, rather than input-intensive, form of agriculture. Therefore, research and innovation are key tools for boosting organic farming. Support is provided under the EU research and innovation framework programmes Horizon 2020 and Horizon Europe (2014-2020 and 2021-2027), and the CAP's agricultural European innovation partnerships EIP-AGRI.

[a] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an Action Plan for the Development of Organic Production', COM (2021)141 final, European Commission, Brussels, 2021.

[b] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system', COM (2020)381 final, European Commission, Brussels, 2020.

[c] This annual evolution is based on annual organic crop statistics (based on data collected through the organic certifying bodies), which differs from data collected for the farm structure survey (through national statistical institutes, directly from farms), available every 10 years. The latter depicts a lower level of agricultural area under organic farming in 2020 (8.3%), but a stronger increase from 2010 (+119%). As of 2025, data to monitor the annual area under organic farming will be collected and reported under the regulation on statistics on agricultural input and output.

Between 2015 and 2020, **retail sales** of organic products **doubled** in the EU

On average, the organic area in the EU **increased annually by 5.7%** in the period 2012-2020

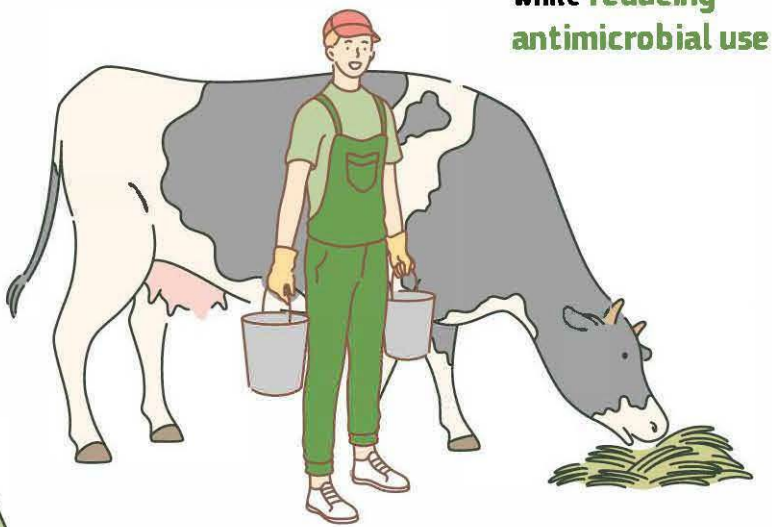
9.1% **of the EU's utilised agricultural area** was under organic farming in 2020

Species richness in organic farming is up to **34% higher** than in conventional farming

ORGANIC FARMING

Higher ambition for organic farming **in the new CAP** – Conversion to organic farming is supported through eco-schemes or rural development interventions in all CAP Strategic Plans

Organic farming practices improve animal welfare while **reducing antimicrobial use**



Between 2014 and 2020, the **production** of organic **pigs** and **poultry** grew annually **by 9% and 11% respectively**

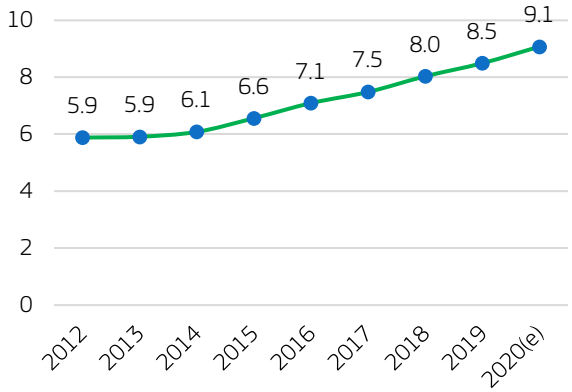
61% of Europeans are aware of the organic farming logo

1. Facts and figures on organic farming in the EU

A growing area

In 2020, 74.9 million ha of agricultural land were farmed organically in the world (including the area under conversion towards organic farming)[1]. The EU area under organic farming reached 14.8 million ha in 2020[2], which was 19.7% of the total in the world and 9.1% of the EU's utilised agricultural land (UAA).

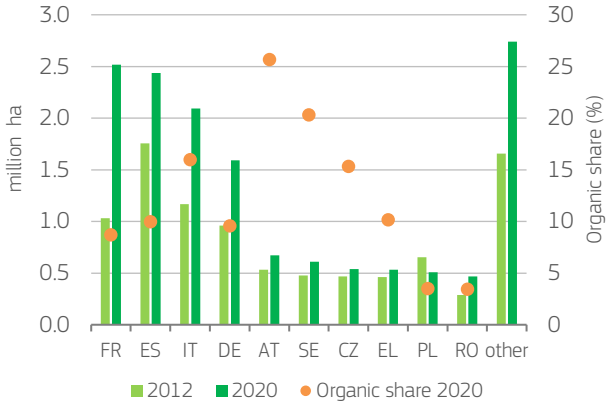
Graph 1.1 – Evolution of the share of EU agricultural area under organic farming, 2012-2020 (%)[3]



Source: Eurostat (online data table org_cropar). Data for France 2020 is provisional. Includes land fully converted and under conversion.

The share of EU agricultural land under organic farming increased by more than 50% in 2012-2020, with an annual increase of 5.7%. During that period, the share of the land under organic farming increased in all EU countries except Poland (where it started to grow again in 2019 after several years of decline).

Graph 1.2 – Land under organic farming, area in 2012 and 2020 (million ha), and share of the UAA in 2020 (%), in main producing countries and sum of the other Member States



Source: DG AGRI calculation based on Eurostat (online data table org_cropar).

The four countries with the largest area under organic farming in the EU are France, Spain, Italy and Germany, with 52% of the total in 2012 and 59% in 2020. France in particular increased its area under organic farming by almost 150% since 2012, while Italy almost doubled it.

In 2020, France became the EU country with the largest area of land under organic farming with 2.5 million ha and an average annual growth of 11.8% in 2012-2020. Spain, which had the largest area under organic farming in 2012, came close with 2.4 million hectares.

Regarding the share of the utilised agricultural area under organic farming, compared to the EU average of 9.1%, in 2020 it reached more than 25% in Austria, and was above 20% in Estonia and Sweden. However, in Ireland and Malta, the figure remained below 2%.

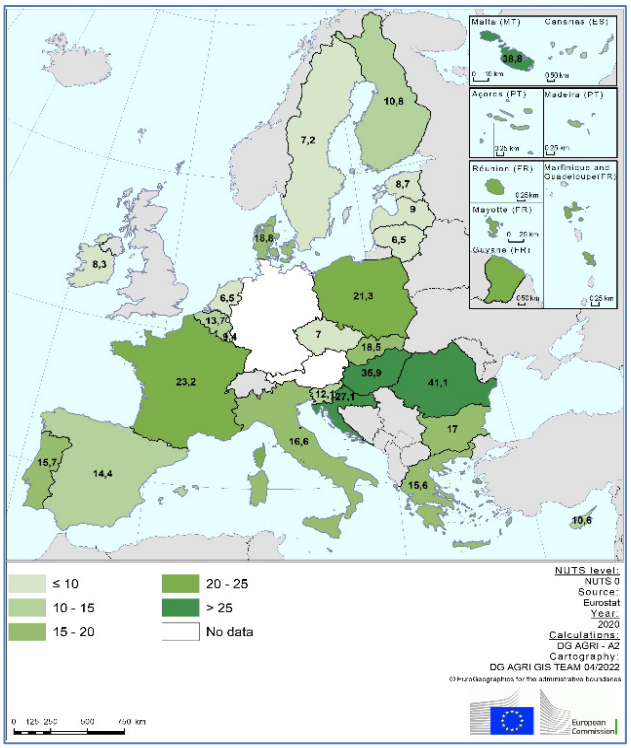
[1] FiBL & IFOAM – 'Organics international The world of organic agriculture – Statistics & emerging trends 2022', Organic World Publishing, Frick, Switzerland, 2022, 22 pp, https://www.fibl.org/fileadmin/documents/shop/1344-organic-world-2022.pdf.

[2] Eurostat (online data table org_cropar)

[3] This annual evolution is based on annual organic crop statistics (based on data collected through the organic certifying bodies), which differs from data collected for the farm structure survey (through national statistical institutes, directly from farms), available every 10 years. The latter depicts a lower level of agricultural area under organic farming in 2020 (8.3%), but a stronger increase from 2010 (+119%). As of 2025, data to monitor the annual area under organic farming will be collected and reported under the regulation on statistics on agricultural input and output.

The area under conversion from conventional to organic farming[4] provides an indication of the potential growth in the organic sector in the coming years. In 11 EU countries, the share of the area under conversion accounts for between 10% and 20% of the total area under organic farming and, in 6 countries, it exceeds 20%. Two thirds of the hectares under conversion are in France, Spain, Italy and Romania.

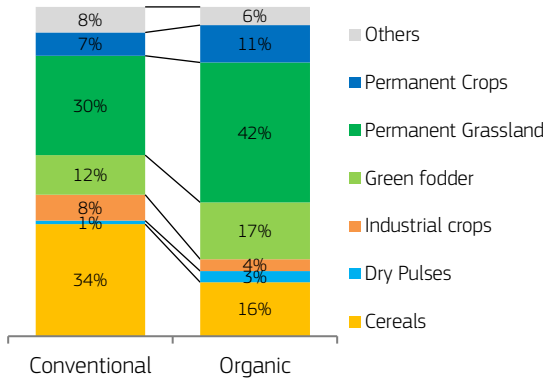
Map 1.1 - Area under conversion to organic, 2020 share of total area under organic farming (%), by country



Source: DG AGRI calculation based on Eurostat (online data table org_cropar).

Grassland is the main land use category

Graph 1.3 – Land use of conventional and organic agriculture, 2020, by crop (%)

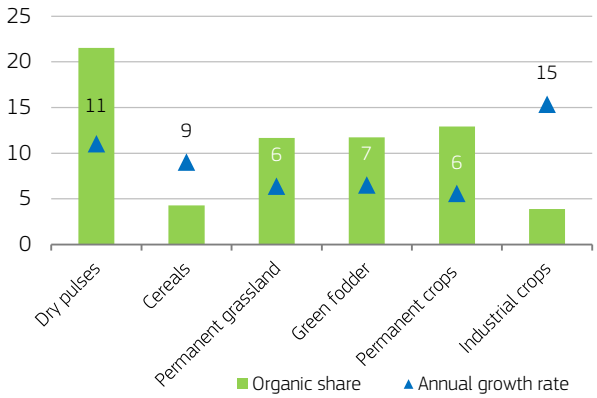


Source: DG AGRI calculation based on Eurostat (online data tables org_cropar and apro_cpsh1).

In 2020, the largest share of the EU area under organic farming was permanent grassland, with 42% and 6.2 million ha. This area is used for organic livestock (for both meat and dairy), which requires access to outdoor grazing areas, and is mostly located in Spain, France and Germany (together accounting for almost half of the EU's organic permanent grassland). Other parts of organic farming land are devoted to green fodder (17%), cereals (16%) and permanent crops, such as fruit, olives and vineyards (11%).

The share of the area under organic farming compared to the total area per crop is above the EU average of 9.1% for dry pulses (24%), permanent crops (14%), green fodder (13%), permanent grassland (12%) and vegetables (11%). Cereals and industrial crops are below the average: 5% and 4%, respectively. Nevertheless, they registered high annual growth rates in 2014-2020 (respectively +8% and +15%).

Graph 1.4 - Organic land use, share in 2020 and annual growth rate 2014-2020, by crop (%)

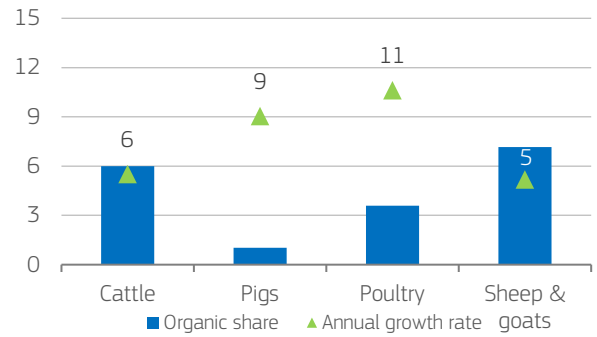


Source: DG AGRI calculation based on Eurostat (online data tables org_cropar and apro_cpsh1).

Organic animal production remains small

Despite fast growth, EU organic animal production remains small in comparison to the EU total. In 2020, about 6.0% of the cattle herd and 7.2% (2019) of the sheep and goat flocks were estimated to be organically raised, while for poultry and pigs this was estimated at 3.6% and 1.0%, respectively. Extensive grass-fed systems for cattle, sheep and goats can be easier and cheaper to convert into organic. By contrast, this conversion is more complex for grain-fed systems due to higher organic feed expenses and stricter rules (e.g. in relation to animal medication). Nevertheless, albeit from a lower basis, organic pig and poultry production show higher annual growth rates (9 and 11%, respectively) than other animal production.

Graph 1.5 – Organic animal production, share in 2020 and annual growth rate 2014-2020, by animal production category (%)

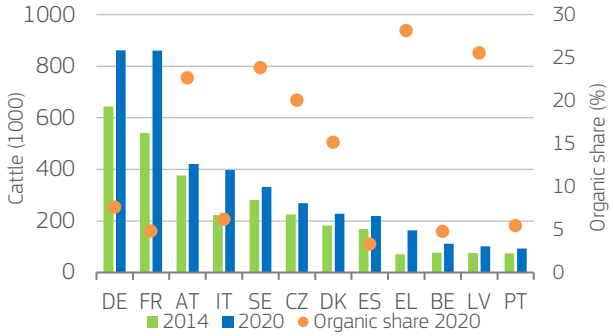


Source: DG AGRI calculation based on Eurostat (online data tables org_lstspec, apro_mt_lscatl, apro_mt_lspig, apro_mt_lssheep, apro_mt_lsgoat, apro_mt_pann and ef_lsk_poultry). DG AGRI estimate for poultry and goats. The share of sheep and goats refers to 2019.

[4] Any farm that wishes to produce organically has to undergo a process known as 'conversion'. During this period, organic production methods need to be used but the resulting product cannot be sold as organic. The length of this conversion period depends on the type of organic product being produced.

High shares of organic livestock were registered in some countries, e.g. Austria (22% of cattle, 35% of sheep and goats and 3% of pigs), Sweden (24% of cattle, 32% of sheep and goats and 3% of pigs), Denmark (15% of cattle and 3% of pigs) and Latvia (26% of cattle, 36% of sheep and goats and 1% of pigs).

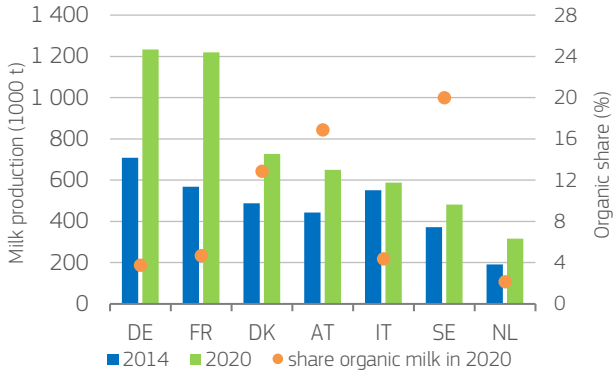
Graph 1.6 – Organic cattle, number of heads in 2014 and 2020 (thousands), and share in 2020 (%), in main producing countries



Source: DG AGRI calculation based on Eurostat (online data tables org_lstspec and apro_mt_lscatl).

More than half of EU organic cattle are raised in Germany, France, Austria and Italy. In 2014-2020, organic cattle numbers grew fastest in Bulgaria, Croatia and Greece. Romania and Poland are the only EU countries where organic cattle decreased in number.

Graph 1.7 – Production of organic milk, volume in 2014 and 2020 (thousand tonnes), and share in 2020 (%), main producing countries

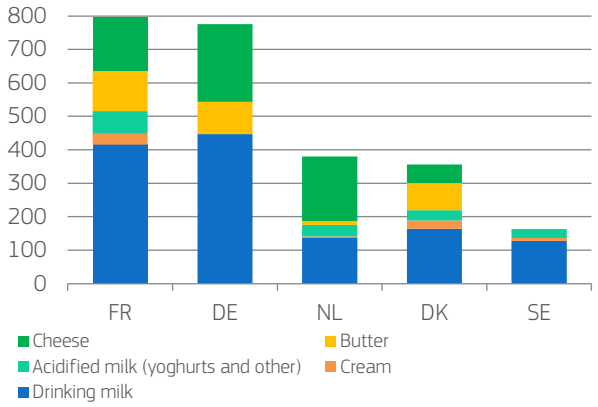


Source: DG AGRI calculation based on Eurostat (online data tables org_aprod and apro_mk_farm), provisional data for Italy.

Three quarters of EU organic milk is produced in Germany, France, Denmark, Austria and Italy. The two leading EU producers, Germany and France, significantly increased their volume between 2014 and 2020: +74% and +115% respectively. Nevertheless, growth was even more remarkable in relative terms in Bulgaria, Greece, Spain and Cyprus. On the other hand, downward trends were registered in Estonia, Hungary and Poland (although Poland has started to recover in 2020).

Despite the increase in organic milk production in most EU countries, the share of organic milk in total milk production is still small: 3.7% in the EU in 2020. However, there are exceptions: organic milk accounts for a significant share of production in Sweden (20%), Austria (17%) and Denmark (13%). Half of all EU organic milk is used as drinking milk whereas cheese production uses 26%.

Graph 1.8 – Production of organic dairy products, volume (thousand tonnes milk equivalent) 2020, main producing countries



Source: DG AGRI calculation based on Eurostat (online data table org_aprod). Data are not available for all countries.

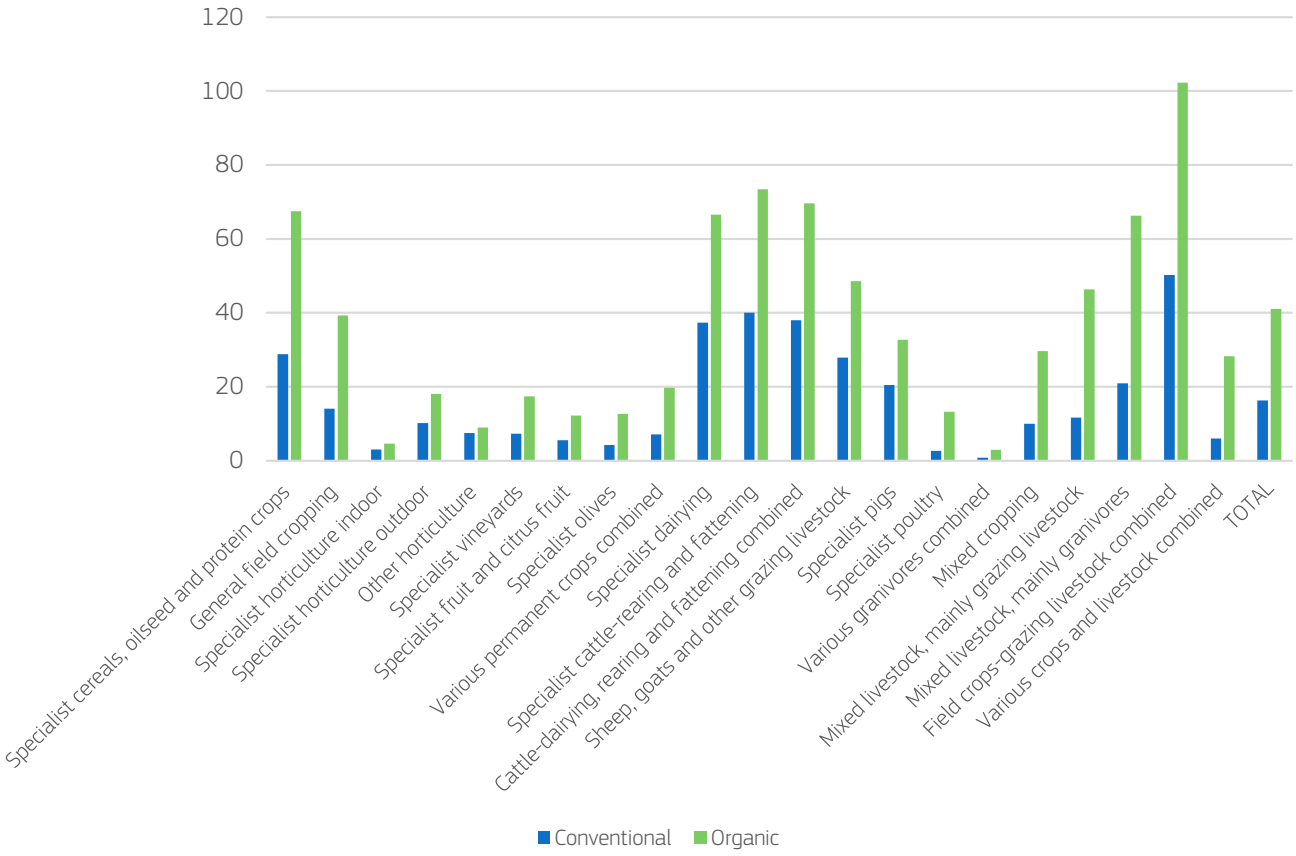
Organic farms bigger on average than conventional farms

Based on data from the 2020 Integrated Farm Statistics[5], 2.7% of EU agricultural holdings have agricultural land and/or livestock that is fully organic or under conversion. An additional 0.9% of farms have some organic production. Therefore, overall, 3.6% of EU farms are organic or partially organic. This share is very different from one country to another: it is highest in Austria (22%), Czechia (18%), Estonia (16%), France (11%) and Finland (11%). It is around only 1% in Hungary, Ireland, Latvia, Poland, Portugal and Romania. In absolute terms, the highest number of EU organic producers is located in Italy (corresponding to 9% of Italian holdings), followed by France (11%) and Spain (4%).

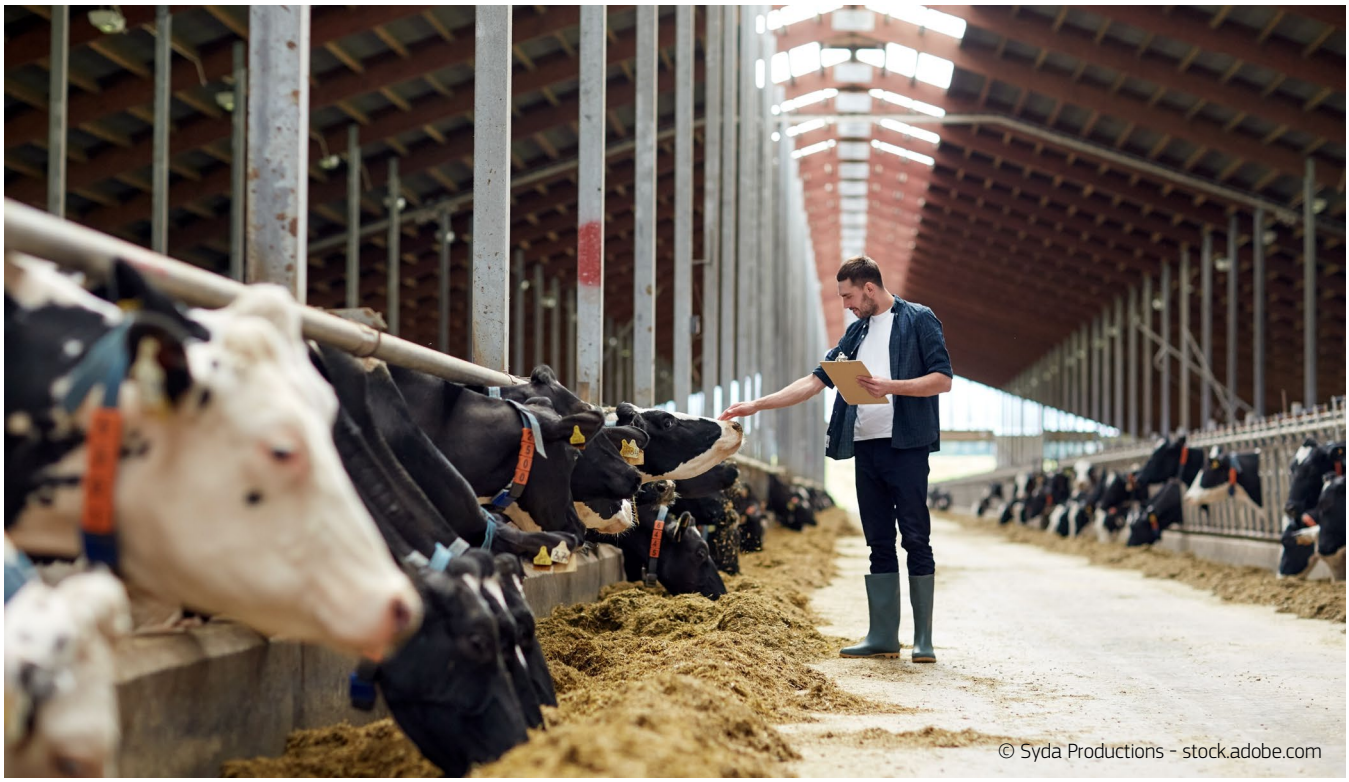
At EU level, the share of land farmed by fully or partially organic holdings is higher than the share of fully or partially organic holdings. This is due to the fact that, on average, the size of organic farms (41 ha) is larger than the size of conventional farms (16 ha, 2.5 times less). Organic farms are larger than conventional ones in the majority of Member States, with the largest difference in Lithuania, Portugal and Slovakia (4 to 7 times larger). However, organic and conventional farms are of similar size in Germany and Ireland, and organic farms are 20 to 40% smaller in Bulgaria, Czechia, France, and Luxemburg.

Most fully organic farms are specialised in cattle-rearing and fattening (14% of EU organic holdings), general arable crops (13%), and olives (10%). On average, organic farms are bigger than their conventional counterparts in all types of farming.

Graph 1.9 –Average size of conventional and fully organic holdings (in hectares) in the EU in 2020



Source: DG AGRI calculation based on Eurostat (Integrated Farm Statistics, 2020, preliminary data, specific extraction).[5]



[5] Source: Eurostat, Integrated Farm Statistics, 2020, preliminary data, specific extraction https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-qq-20-009.

2. Sustainability of the organic sector

Organic production brings environmental, economic and social benefits

Data from the EU Farm Accountancy Data Network (FADN)[6] show that organic plant production farms spend less on fertilisers and plant protection products than conventional farms. Organic arable crop farms save 75-100% on plant protection product costs per hectare and 45-90% on fertiliser costs per hectare compared to conventional farms.

Table 2.1 – Input costs per unit of economic output, income per worker, and labour per unit of economic output in organic versus conventional plant production farms in selected countries[7]

	Fertilisers costs per output unit	Pesticides costs per output unit	Income per worker	Labour per output unit
Cereals, oilseeds, and protein crops	Significantly lower	Significantly lower	Significantly higher	No clear trend
Other arable crops	Significantly lower	Significantly lower	Higher [a]	Higher
Wine	Lower [b]	Lower	No clear trend	No clear trend
Fruit	No clear trend	Lower [c]	No clear trend	Higher [d]

Source: Based on EU FADN - 2017-2020 data (2020 preliminary data).

[a] Exceptions: slightly lower in 3 out of 14 country x economic size combinations.

[b] Exceptions: slightly higher in 2 out of 8 country x economic size combinations.

[c] Exception: slightly higher in 1 out of 8 country x economic size combinations

[d] Exceptions: slightly lower in 2 out of 8 country x economic size combinations

On the other hand, organic plant production farms are more labour intensive in some sectors (they require more workers per unit of economic output). Overall, organic plant production farms generate a higher or similar level of income per worker.

Regarding animal production farms, organic dairy farms have lower veterinary costs per output unit than conventional farms. Both organic dairy and beef farms are more labour intensive, but they generate more income per worker. Organic farms raising sheep and goats also tend to have higher income per worker than their conventional counterparts. Organic granivore farms also have lower veterinary costs per unit of economic output.

Table 2.2 – Input costs per unit of economic output, income per worker and labour per unit of economic output in organic versus conventional animal production farms in selected countries[8]

	Veterinary costs per output unit	Income per worker	Labour per output unit
Milk (dairy cows)	Lower	Higher [a]	Higher [b]
Beef (beef only and beef-dairy combined)	No clear trend	Higher	Higher [c]
Sheep and goats	No clear trend	Higher [d]	No clear trend
Granivores (poultry, pigs and others)	Lower	No clear trend	No clear trend

Source: Based on EU FADN - 2017-2020 data (2020 preliminary data).

[a] Exceptions: slightly lower in 4 out of 27 country x economic size combinations.

[b] Exceptions: slightly lower in 4 out of 27 country x economic size combinations.

[c] Exceptions: slightly lower in 7 out of 26 country x economic size combinations.

[d] Exception: slightly lower in 1 out of 9 country x economic size combinations.

[6] EU FADN data is based on a sample of about 80 000 farms, which is representative of EU farming in terms of farm types, regions and economic size, but is not representative of organic farms, which limits the analysis potential of FADN data. https://agridata.ec.europa.eu/extensions/FADNPublicDatabase/FADNPublicDatabase.html

[7] Only combinations of country and economic size for which there are at least 30 farms in the FADN sample over the period 2017-2020 are included.
Cereals, oilseeds and protein crops: AT (2 economic sizes), DE (2), FR (1), IT (3).
Other arable crops: AT (2), DE (4), FR (1), IT (5), PL (2).
Wine: DE (1), FR (3), IT (4)
Fruit: AT (1), DE (1), FR (1), IT (4), PL (1).

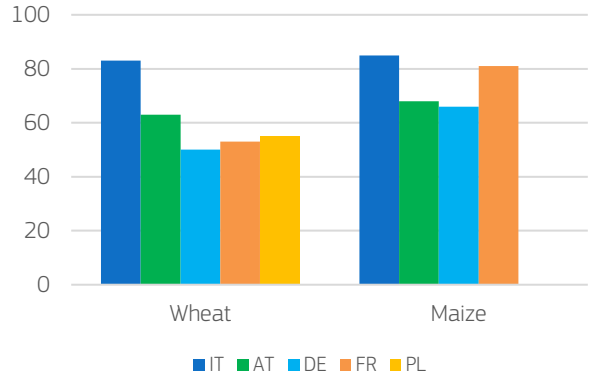
[8] Only the combinations of country and economic size for which there are minimum of 30 farms in the FADN sample over the period 2017-2020 are included.
Milk (dairy cows): AT (3 economic sizes), BE (1), CZ (1) DE (4), DK (2), FI (1), FR (1), IT (4), LV (4), NL (1), PL (3), SE (2).
Cattle (rearing and fattening, rearing-fattening-dairying combined excluding milk specialists): AT (3), BE (1), CZ (4), DE (3), FI (1), FR (2), IT (3), LV (1), PL (2), SE (3), SI (2), SK (1).
Sheep and goats: AT (1), FR (3), IT (4), HR (1).
Granivores (pigs, poultry, various granivores): DE (1), DK (2), IT (2), FR (1).

2.1 Economic sustainability: a sector economically attractive for farmers

FADN data for arable crops farms, dairy farms, and beef farms (where the organic farm sample size in FADN is large enough to provide relevant results in several countries) show that organic farmers benefit from a price premium for their products in the arable crops and dairy sectors, but not in the beef sector. These data also show that costs per unit of land or animal can be lower in organic systems, although this is not always the case. In most cases, the level of income per worker is higher in organic farms, and the share of public support in overall farm income is also higher than in conventional production systems.

Arable crop farms

Graph 2.1 – Organic yields compared to conventional yields for selected arable crops, average 2015-2020 (conventional yields = 100)

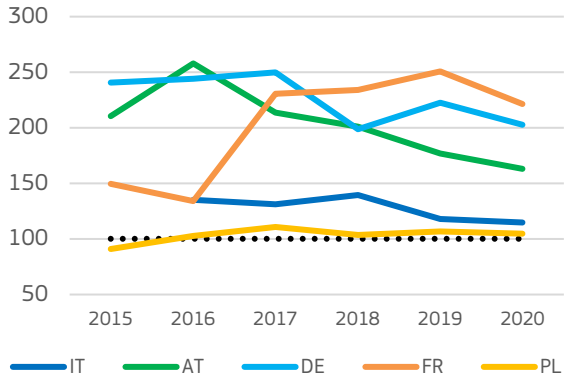


Source: EU FADN. 2020 data are preliminary. Data on organic maize yield not available for Poland because the sample size is too small.

According to a review of meta-analyses commissioned by DG Agriculture and Rural Development to the Joint Research Centre[9], crop yields in organic production are 5-30% lower than in conventional production. Based on FADN data on farms specialised in arable crop production, the yield gap is particularly significant for common wheat, with an organic yield ranging between 50% (Germany) and 83% (Italy) of conventional yields. The gap for organic maize is lower but may still represent a strong financial disincentive if not compensated by higher prices and/or lower costs and/or public support

Higher producer price premium[10] levels are registered for common wheat, with an organic wheat price around twice as high as conventional wheat in Germany, Austria and France (after 2017). In 2020, there was a slight decrease in the premium in all countries analysed, following an increase in the price of conventional common wheat.

Graph 2.2 – Premium on producer price for organic common wheat (conventional=100), in 2015-2020 in selected countries



Source: EU FADN. 2020 data are preliminary.

Organic arable crop farms in Poland, Italy and Austria had lower average costs per hectare in 2015-2020 than conventional farms in those countries, while these costs were higher on organic farms in France and Germany compared to their conventional counterparts. Among the different cost categories[11], lower specific crop costs are

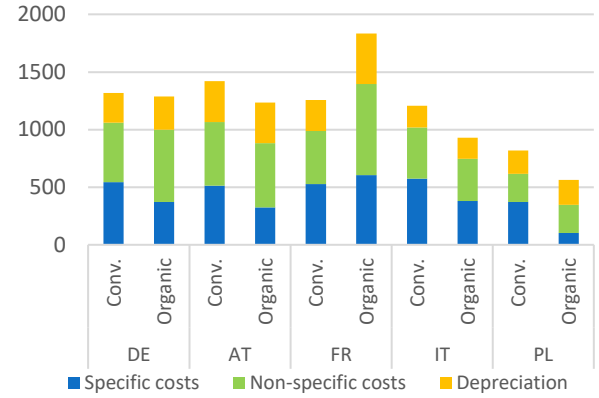
[9] European Commission, iMAP (Integrated Modelling platform for Agro-economic and resource Policy analysis), https://wikis.ec.europa.eu/display/IMAP/.

[10] Percentage by which organic products' producer price exceeds (or falls short of) conventional products price.

[11] *Specific crop costs* include seeds and seedlings, fertilisers, crop protection, and other specific costs related to crop production.
Non-specific costs include motor fuel and lubricants, machines and building upkeep, contract work, energy (electricity, heating fuels), and other direct costs (water, insurance, accountancy fees, telephone charges, etc.).
Depreciation (consumption of capital assets) is a systematic allocation of a depreciable amount of an asset over its useful life. It applies to fixed assets: farm buildings, machinery and equipment, land improvements, permanent plantations, and intangible non-tradable assets.

the primary driver for lower total costs in organic farms (Poland, Italy and Austria). Similarly, when total costs were higher, specific costs were lower (Germany) or the relative increase in specific costs was lower than that of non-specific costs or depreciation costs (France).

Graph 2.3 – Costs for conventional and organic arable crop farms, average 2015-2020 (EUR/ha) in selected countries

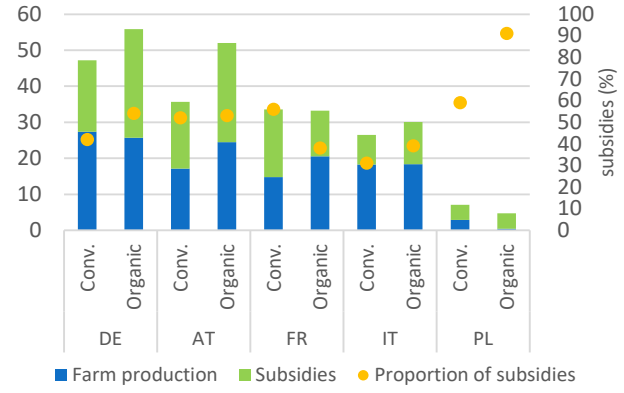


Source: EU FADN. 2020 data are preliminary.

In terms of average annual farm net value added per annual work unit (AWU) for 2015-2020, organic arable crop farms had (i) a higher total income in Austria, Germany and Italy (ii) a similar income in France, and (iii) a lower income in Poland compared to conventional farms.

In Italy and Germany, income from farm production[12] per worker is similar between conventional and organic farms, while organic farms in Austria and France earn around 40% more from their production. Organic farms in Poland gain very little from farm production, and much less than their conventional counterparts.

Graph 2.4 – Farm net value added per worker for conventional and organic arable crop farms, average 2015-2020 (thousand EUR/AWU) in selected countries and proportion of public support in total farm net value added



Source: EU FADN. 2020 data are preliminary.

Organic arable crop farms in Germany, Austria, and Italy receive around 50% more subsidies per worker than conventional farms[13]. Subsidies per worker on organic and conventional farms in Poland are similar, while organic farms in France receive a third less in subsidies per worker than conventional farms.

Looking at the share of subsidies in income, organic arable crop farms were more reliant on public support for their income than conventional farms in three Member States (Germany, Italy and particularly Poland). In France, however, organic farms are more autonomous than conventional farms in terms of generating their income.

In conclusion, organic arable crop farms face quite different situations in terms of yield gap, premium on producer price and costs per hectare across Member States. Together with differences in public support, this leads to mixed trends in the total income per worker when comparing conventional and organic farms.

For instance, although the income per worker from farm production in Italy and Germany is similar between conventional and organic farms, the reasons for this similarity are different. On one hand, organic farms in Germany have a significant yield gap and similar costs to conventional farms, but this is compensated for by a strong premium on producer prices. On the other hand, organic farms in Italy have a lower premium but a smaller yield gap than in Germany, and they also have lower costs than conventional farms in Italy.

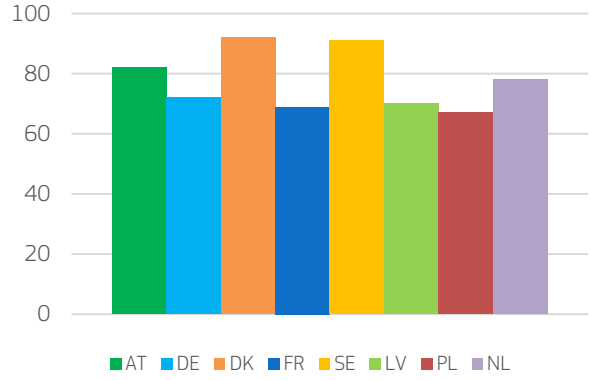
Similarly, even though organic farms in France and Austria both make around 40% more income from their production compared to conventional farms, the total income in Austria is much higher in organic farms than conventional farms due to greater public support. In France, lower public support per worker leads to similar total income for organic and conventional farms.

Despite lower costs, organic farms in Poland suffer from the absence of a premium on producer prices to compensate for the significant yield gap. The same support level per worker for organic and conventional farms does not compensate for the lower income from farm production in organic farms.

Dairy farms

Based on FADN data on farms specialised in dairy production, milk yields are lower by 8-33% on organic farms than on conventional farms.

Graph 2.5 – Organic yields compared to conventional yields for dairy cows, average 2015-2020 (conventional yields = 100)



Source: EU FADN. 2020 data are preliminary

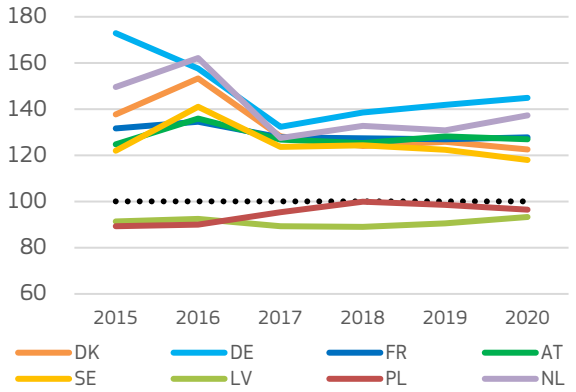
FADN data on dairy farms from selected EU countries show a premium on producer price for organic milk of more than 20%, after a drop in 2017 following an increase in the price of conventional milk (Poland and Latvia are an exception, with no premium in either country).

https://agridata.ec.europa.eu/extensions/FADNPublicDatabase/description.html.

[12] Income from farm production includes the output made from selling the products on the market, the differences in stocks, farmhouse consumption, etc.

[13] Income from subsidies includes EU CAP and national public support, but excludes support on investment.

Graph 2.6 – Premium on producer price for organic milk (conventional=100), 2015-2020 in selected countries

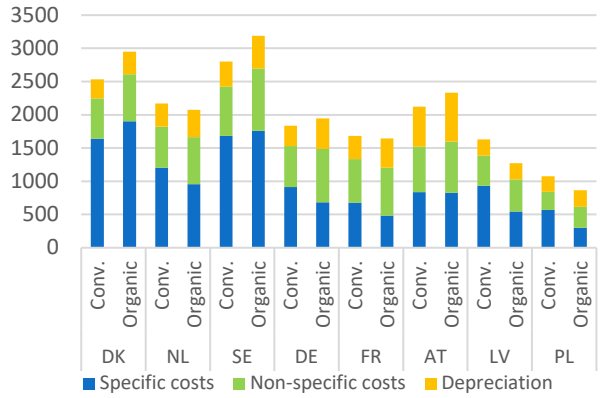


Source: EU FADN. 2020 data are preliminary.

Organic dairy farms in Denmark, Sweden, Austria, and Germany had higher average costs per livestock unit in 2015-2020 compared to conventional farms, while in the other Member States studied, these costs were (slightly) lower (Latvia, Poland, France, Netherlands) on organic farms.

Among the different cost categories, lower specific livestock costs[14] are the primary driver for lower total costs in organic farms in Latvia, Poland, France, and the Netherlands. Similarly, lower specific costs compensate partially for the higher non-specific and depreciation costs on organic farms in Germany. In Austria and Sweden, the stable or only slightly higher specific costs act to reduce the overall effect of the stronger increase in non-specific and depreciation costs on organic farms. Specific costs on organic farms in Denmark are higher to the same extent as other costs on these farms.

Graph 2.7 – Costs for conventional and organic dairy farms, average 2015-2020 (EUR/Livestock unit) in selected countries



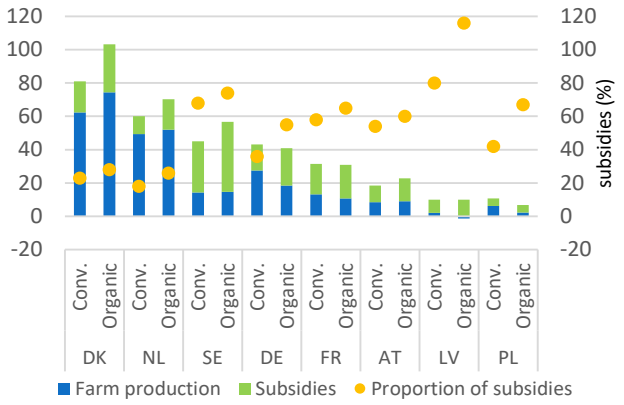
Source: EU FADN. 2020 data are preliminary.

In terms of average annual farm net value added per annual work unit for 2015-2020, organic dairy farms had a higher total income than conventional farms in Denmark, Sweden, Austria, and the Netherlands; an almost similar income in France and Germany; and a lower income in Poland and Latvia.

Organic dairy farms in Denmark, Austria, the Netherlands, and Sweden earned (slightly) more income per worker from farm production compared to conventional farms. In Poland, Germany, and France, income from farm production is (much) lower per worker in organic farms than in conventional ones. In Latvia, organic dairy farms actually lose money from the farming activity itself.

In all Member States studied, the subsidies received per worker were higher in organic dairy farms than in conventional ones, except in Poland, the level of subsidy was similar. Organic dairy farms were more reliant on public support for their income than conventional farms, especially in Latvia, Poland, and Germany.

Graph 2.8 – Farm net value added per worker for conventional and organic dairy farms, average 2015-2020 (thousand EUR/AWU) in selected countries and proportion of public support in total farm net value added



Source: EU-FADN. 2020 data are preliminary.

In conclusion, organic dairy farms face quite different situations in terms of yield gap, premium on producer price and costs per hectare in various Member States. Together with differences in public support, this leads to mixed trends in the total income per worker when comparing conventional and organic farms.

The organic farms in Member States with the smallest milk yield gap (Denmark, Sweden, and, to a lesser extent, Austria and the Netherlands) were the ones that had a positive gap in income from farm production compared to conventional farms. This was the case even though organic farms in three of these Member States (Denmark, Sweden, and Austria) were also the ones with the highest relative costs compared to their conventional equivalents (the premium on producer price is quite close in these four countries).

On the other hand, organic farms in two Member States with a larger milk yield gap (France and Germany) had a slightly negative gap in income from farm production compared to conventional farms. Organic farms in France have slightly lower costs than conventional ones, and a premium on producer price around the same level as Denmark, Sweden, Austria and the Netherlands. The premium on producer price is the highest of all Member States in Germany, but organic farms there also have slightly higher costs than conventional farms. Public support in Germany and France compensates for most of the gap in income from farm production, thereby leading to a total income that is only slightly lower in organic farms than in conventional ones (-2% for organic farms in France, and -5% in Germany).

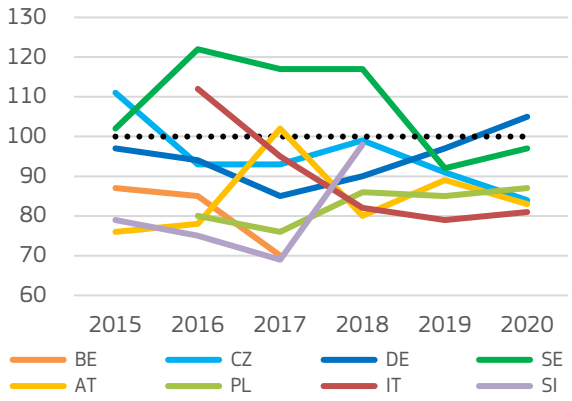
Despite having lower costs per animal, organic dairy farms in Latvia and Poland suffer from the combination of a large yield gap and receiving no premium on their prices. This leads to a much lower income from farm production in organic farms.

[14] Specific livestock costs include feedstuffs and other livestock specific costs (such as veterinary fees, reproduction costs, milk tests, storage, etc.), https://agridata.ec.europa.eu/extensions/FADNPublicDatabase/description.html.

Beef farms

FADN data on beef farms from selected EU countries show that, in general, the producer price for organic cattle intended for meat production was 5-30% lower than the price for conventional cattle, except for Sweden in 2015-2018. This lower producer price for organic animals may be explained by the fact that, under the organic system, cattle usually reach classes of conformation and fat cover[15] that receive – proportionally – a lower price per kilogram of carcass weight. However, recent market data[16] suggest that organic cattle of the same age class, sex, conformation and fat cover are, in most cases, sold at a higher price than their conventional counterparts.

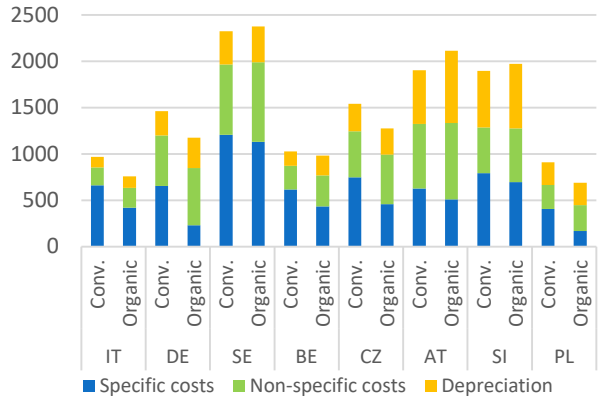
Graph 2.9 – Premium on producer price for organic beef 1–2-year-old male bovines (conventional=100), 2015-2020 in selected countries



Source: EU FADN. 2020 data are preliminary.

Organic beef farms in Poland, Italy, Germany and Czechia had average costs per livestock unit that were lower by a fifth to a quarter compared to conventional farms. These costs were also slightly lower in Belgium, although they were (slightly) higher in Austria and Slovenia. In all Member States studied, specific costs per organic livestock unit were lower by between 6 and 60% compared to conventional ones.

Graph 2.10 – Costs for conventional and organic beef farms, average 2015-2020 (EUR/Livestock unit) in selected countries



Source: EU FADN. 2020 data are preliminary.

[15] The classes of conformation and fat cover are a quantitative indicator of the 'meatiness' of a carcass. They can be interpreted as an equivalent to the concept of yield in the arable crop or dairy sectors.

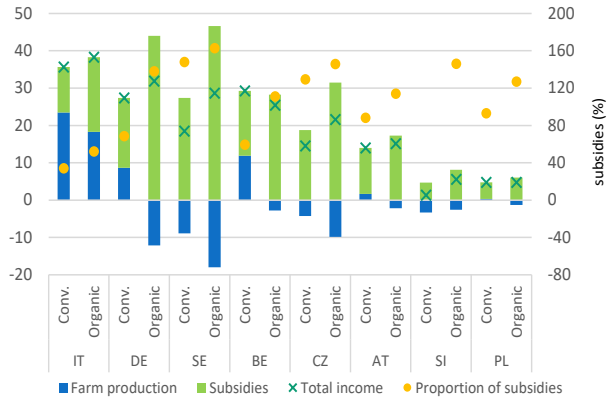
[16] Notifications of the Member States to the European Commission in the context of the Market Transparency Regulation (data for AT, CZ, DE, FR and SE, year 2022).

In terms of average annual farm net value added per annual work unit for 2015-2020, organic beef farms had a higher total income in all Member States compared to conventional farms, except in Poland (same total income) and Belgium (lower income for organic farms).

In all Member States studied except Slovenia, the income per worker from farm production was lower in organic farms than in conventional farms, with sometimes major differences (e.g. in Germany and Belgium). On the other hand, the income per worker from subsidies was consistently higher in organic farms than in conventional farms. Poland and Austria had the smallest difference (around +40% income from subsidies per worker for organic farms), while Germany had the highest (+135%). The difference in the other Member States studied was between +60 and +75%.

On average, both conventional and organic beef farms tend to be more reliant on public support for their income than arable crop farms or dairy farms. In several Member States, subsidies were needed to cover part of the costs. Organic farms were more dependent on public support for their income than conventional farms in all countries studied, except Slovenia.

Graph 2.11 – Farm net value added per worker for conventional and organic beef farms, average 2015-2020 (thousand EUR/AWU) in selected countries and proportion of public support in total farm net value added



Source: EU FADN. 2020 data are preliminary. Proportion of subsidies for conventional beef farms in Slovenia: 349%.

In conclusion, organic beef farms face quite different situations in terms of premium on producer price and costs per livestock unit across Member States. Together with differences in 'yield' (classes of conformation and fat cover) and public support, this leads to mixed trends in the income per worker when comparing conventional and organic farms.

Focus on specific Member States

The successful example of Austria

Austria leads the EU's organic ranking in the share of agricultural land under organic farming. It is also in third place in the annual per-capita consumption of organic products. The share of the total utilisable agricultural area (UAA) under organic farming reached 25.7% in 2020, equalling almost 680 000 ha. Most of the land under organic farming is dedicated to permanent grassland (58%), followed by cereals (20%). In most cases, grassland farms can convert to organic farming more easily than arable or permanent crops farms.

More than half of the organic holdings in Austria are dedicated to dairy or cattle-rearing and cattle-fattening. This is also due to the unique characteristics of Austria, where 64% of agricultural land is considered to be in areas facing natural constraints.

Organic milk production in Austria increased by 46% between 2014 and 2020 to reach a share of 17% of total Austrian milk production. According to FADN data, the yield gap between organic milk production and conventional production is around 18% in specialised farms. This is compensated for by a producer price premium that reached 27% in 2020. Moreover, organic milk producers save on average more than 20% on veterinary costs per cow compared with conventional producers. All of these elements together result in higher profitability for organic milk producers (the income per worker is around 20% higher). Similarly, organic arable crops have a lower yield but also lower costs (for plant protection products and fertilisers) and a higher income per worker[17].

The high share of organic farming is stimulated by high domestic demand. 11% of total retail food sales are organic, and these are mostly channelled through general retailers, which account for 81% of all sales of organic products in the country[18]. This might indicate that organic consumption is fully part of regular Austrian consumer habits (with an annual per capita consumption of EUR 254, one of the highest in the world).

The Austrian organic farming sector benefits from CAP support that is higher than for conventional farms. EU support for the maintenance of organic farming under the rural development programme is 119 EUR/ha on average, supplemented by 115 EUR/ha of national co-financing. The number of supported hectares has constantly increased. In its CAP strategic plan, Austria is willing to continue to support organic farming and has set a target of 30% of the total agricultural area to be under organic farming to be achieved by 2030.

Organic farming has difficulties taking off in Poland

The total area under organic farming in Poland fell for a few years after 2014. This trend seems to have come to an end, with a small increase since 2019. Nevertheless, the agricultural area under organic farming in Poland (3.5% in 2020) is still well below the EU average. Cereals, plants harvested green and permanent grassland cover more than two thirds of the Polish area under organic farming. Organic livestock production – mostly poultry and cattle – is very limited. 44% of Polish organic holdings are general arable crop producers.

Based on FADN data for specialised farms, the premium on producer prices for organic wheat in Poland is very modest. This is unlike other countries, where the organic wheat producer price can be more than double the price of the conventional one. For milk, there is even a negative price gap. In Poland, consumers spend on average less than EUR 10 per capita per year on organic food.

In 2019, EU support for organic farming amounted on average to EUR 134 per ha, supplemented by EUR 77 per ha of national co-financing. Support from the CAP covers around 80% of all area under organic farming[19].

Barriers to the development of the organic-food market include: a low supply of raw materials; underdeveloped market channels; relatively high prices; lower purchasing power (77% of the EU average) and lower awareness on the part of domestic consumers compared with other countries. There are good prospects for the development of the organic food market in Poland over the coming decades, but it is still in its initial development phase.

The Polish authorities see great potential for the development of organic farming and the growth of the market, and have set themselves the target of doubling the organic UAA compared with 2020, reaching 7% in 2030.

Czechia: 21% of agricultural land to be supported for organic production under CAP strategic plan

By 2020, Czechia had reached a share of 15% of UAA under organic farming. This is the second highest share (after Estonia) of the countries that joined the EU in 2004 or after. The largest share of this area was used for permanent grassland (82% of the total UAA under organic farming), followed by cereals (7%). This land use is reflected in a relatively high share of organic cattle (20% in 2020) and sheep and goats (40% in 2019). However, only 1% of all milk produced by Czechia is organic. According to FADN data, organic beef producers have higher income per worker (between 50% and 90% higher on average, depending on the size class of the farm) thanks to a producer price premium and greater subsidies. According to the latest Organic Food Market Report for 2020[20], the market share of organic food in Czechia is 1.77%, showing that there is still room for consumption to increase. The total organic food turnover of Czech producers, including exports, reached approximately CZK 9.41 billion (EUR 383 million) in 2020.

The total area under organic farming (conversion and maintenance) receiving CAP support grew from 311 000 ha (65% of the total UAA under organic farming) in 2015 to 517 000 ha (96% of the total UAA under organic farming) in 2020. In 2019, support per hectare under the rural development programme amounted to EUR 104 on average[21]. However, there were large discrepancies between different types of organic production, as in many other Member States. Most money within organic agriculture was provided for permanent grassland, where the CAP subsidy rate was EUR 84/ha for conversion

[17] Green Report 2021 – The situation of the Austrian Agriculture and Forestry (in German), Federal Ministry of Agriuclture, Regions and Tourism, 2021, Vienna, https://gruenerbericht.at/cm4/jdownload/send/2-gr-bericht-terreich/2393-gb2021.

[18] Bioinfo Austria 2021 – Gastro- Data, Agrarmarkt Austria, 2021, Vienna, https://bioinfo.at/bio-in-zahlen.

[19] European Commission, 'Dashboard Organic Production, Directorate-General for Agriculture and Rural Development', 2022.

[20] Report on the organic food market in Czechia in 2020 (in Czech), Czech Ministry of Agriculture, 2022, https://eagri.cz/public/web/file/698660/_514_TU_56_Zprava_o_trhu_s_biopotravinami_v_CR_v_roce_2020_V1.pdf.

[21] European Commission, 'Dashboard Organic Production, Directorate-General for Agriculture and Rural Development', 2022.

and EUR 83/ha for maintenance. For arable land, the rate can be as high as EUR 669/ha for conversion and EUR 583/ha for maintenance. For permanent cultures, such as hops and vineyards, this rate reached EUR 900/ha for conversion and EUR 845/ha for maintenance. By 2028, Czechia wants 21% of its UAA to be farmed organically.

France: more than 2.5 million hectares of land under organic farming

France is a developed market for organic food, from both a supply and a demand perspective. In terms of the absolute land area under organic farming, France became the most significant EU country in 2020, overtaking Spain, with more than 2.5 million hectares. This represents a share of 8.7% of total French UAA. Permanent grassland, plants harvested green, and cereals are the main organic crops. Almost 5% of the cattle and milk produced in France is organic (France produces one fifth of the EU's organic milk).

In 2020, 11% of French farms were organic (fully or partially). In terms of farm specialisation, vineyards, cereals-oilseed-protein crops, general field crops, and dairy producers accounted for the highest share of organic holdings in France (respectively 19%, 12%, 10% and 10%).[22]

Based on FADN data for specialised farms, French organic producers have lower yields than conventional French producers (-48% for wheat, -17% for maize, -31% for milk – average 2015-2020). However, French organic farms benefit from a price premium of 21% for wheat and 28% for milk in 2020, but no premium for beef. French organic producers also have lower costs for pesticides, fertilisers and veterinary services, and benefit from higher CAP support. As a result, their average income is similar to that of conventional farms.

France is the second largest EU market in terms of organic retail food sales, after Germany, with EUR 12.7 billion in sales and a share for organic products of 6.5% of national retail food sales. Over the last decade, the fastest growth was registered in organic fruit, sales of which grew by 13% annually. However, in the last 2 years, organic meat and eggs have been the categories with the largest increase in annual sales. Annual per capita expenditure on organic products in France was EUR 188 in 2021. 55% of organic food is sold through general retailers, while specialised organic retailers account for 29% of all organic sales. This is one of the highest percentages of organic sales accounted for by specialised organic food retailers in the EU[23].

The share of land under organic farming receiving specific CAP support in 2020 was 56.6% in France. The budget allocated by France to measures to support organic farming has continuously increased in recent years. In 2020, average organic support per hectare in rural development programmes was EUR 128/ha, supplemented by EUR 42/ha national co-funding [23].

For the programming period 2023-2027, the support for conversion to organic farming will increase by 36% (reaching EUR 340 million per year on average), with the aim of doubling the area under organic farming and achieving the target of 18% of the UAA under organic farming by 2027.

Romania: a potential yet to be developed

Since 2017, Romania has registered rapid growth in the amount of agricultural land under organic farming (under conversion and maintenance), reaching 469 000 hectares in 2020 (of which 41% are under conversion)[24]. However, the share in 2020 (3.5% of the Romanian UAA) is still significantly below the EU average of 9.1%. Most of the land under organic farming (61%) is used for cereals and permanent grassland. The number of organic dairy cows reached a peak in 2014, falling to roughly half the 2014 level in 2020. In recent years, there has been rapid growth in the number of organic poultry heads (especially for egg production) and in the number of organic beehives.

From 2015 to 2019, the number of processors in the organic system increased from 106 to 191 and the range of organic products diversified greatly.

The demand for organic product by Romanian consumers is still very low. Retail sales of organic food amounted to EUR 41 million in 2020. Nevertheless, consumer interest in organic products is growing, following the trend at European level.

The area under organic farming benefiting from CAP support has been growing consistently, reaching 82% of the total area under certified organic farming. In the same year, organic support (conversion and maintenance) under the rural development programme amounted to EUR 242 per hectare.

The low number of organic processors, together with the increasing consumer demand, can be an opportunity for market development for corresponding organic products, but would require additional investments.

The Romanian authorities see great potential for the development of organic farming, and agro-tourism and extensive farming. Romania, like other EU Member States, is developing a national plan to support organic farming. This plan includes subsidies for new operators, the distribution of organic food within the School Programme, and measures to promote consumption and encourage production. At the same time, the national strategic plan will finance commitments to maintain organic farming, and convert new areas to organic farming.

[22] Source: Eurostat, Integrated Farm Statistics, 2020, preliminary data, specific extraction https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-20-009.

[23] Euromonitor International; Health and Wellness Industry Edition 2022. Data available for BG, CZ, HU, PL, RO, SK, AT, BE, DK, FI, FR, DE, EL, IE, IT, NL, PT, ES, and SE. Volumes refer to retail only.

[24] Eurostat (online data table org_cropar).

2.2 Environmental impact: organic farming has a positive impact on the environment and climate

Organic production is a sustainable management system with specific objectives and principles on the basis of which detailed production rules are established[25]. The combination of methods leads to different benefits and trade-offs.

Compared to conventional farming, organic farming has positive environmental and climate impacts when results are reported per unit of agricultural land: positive effects have been found for biodiversity, carbon sequestration, greenhouse gas emissions, energy use, eutrophication, nutrients loss and soil biological quality. No significant effects or contrasting results have been found for air pollutants, and pests and disease control. However, since crop yields are usually lower in organic systems compared to conventional systems, when results are reported per unit of product, no significant effects have been found for nutrient loss/eutrophication, acidification, greenhouse gas emissions and land use, while effects remained positive for energy use.

Unless mentioned otherwise (i.e. per unit of food), results are described per unit of agricultural land in the following paragraphs.

When comparing biodiversity between organic and conventional farming systems, a variety of studies have found a higher total abundance of arthropods, birds, non-bird vertebrates, plants and soil organisms on organically farmed land[26]. A meta-analysis showed that the species richness in organic farming is up to 34% higher than in conventional farming[27]. Other meta-analyses showed similar results.

A significant increase in nematode abundance and thus positive effects on biological soil quality were observed in organic farming systems compared to conventional systems[28].

Positive effects are also reported for climate-related parameters (such as carbon sequestration) in organic farming systems compared to conventional systems for soil organic matter content, soil organic stocks, and the soil organic carbon sequestration rate. These positive effects are present even in organic farms with low rates of manure application[29]. On greenhouse gases (GHGs), a decrease of GHG emissions (both for CH_4 and N_2O emissions) per unit of land can be shown for organic farming on farms with both animal and plant production. The results also depend on the type of production. However, the situation is less clear for the impacts per unit of food product and for individual product categories. For instance, positive effects can be reported for organically produced fruits, but dairy products and eggs do not show significant differences in GHG emissions between organic and non-organic products[30].

Organic systems, as compared to conventional systems, did not significantly reduce ammonia emissions both per unit of area and per unit of product[31].

Organic cropping systems may increase the soil nitrogen stock compared to conventional systems, but this is not supported by a

[25] Parliament and Council Regulation (EP, EC) No 2018/848 of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007, article 5.

[26] Crowder D. W. et al, 'Conserving and promoting evenness: organic farming and fire-based wildland management as case studies', Wiley Online Library, Vol. 93, Issue 9, USA 2012 pp. 2001-2007, https://doi.org/10.1890/12-0110.1

[27] Smith O. M. et al, 'Landscape context affects the sustainability of organic farming systems', PNAS, Vol. 117, No 6 Washington DC, USA, 2019, pp. 2870–2878, https://www.pnas.org/doi/epdf/10.1073/pnas.1906909117. See also Bengtsson, J. et al, 'The effects of organic agriculture on biodiversity and abundance: a meta-analysis', British Ecological Society, Vol. 42, Issue 2, London, UK 2005 pp. 261-269, https://besjournals.onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2005.01005.x.

[28] Puissant, J. et al, 'Soil Biology and Biochemistry, Quantification of the global impact of agricultural practices on soil nematodes: A meta-analysis', Science Direct, Vol. 161, 2021, https://www.sciencedirect.com/science/article/pii/S003807172100256X.

[29] García-Palacios, P. et al, 'Crop traits drive soil carbon sequestration under organic farming', Journal of Applied Ecology, Vol. 55, Issue 5, London, UK, 2018, pp. 2496-2505, https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.13113.

[30] Clark M. and Tilman D., 'Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice', IOP Publishing Ltd, Environmental Research Letters 12(6):064016, 2017, https://iopscience.iop.org/article/10.1088/1748-9326/aa6cd5.

[31] Tuomisto H. L. et al, 'Does organic farming reduce environmental impacts? -a meta-analysis of European research', PubMed, Vol. 112, 2012, pp. 309-320, https://pubmed.ncbi.nlm.nih.gov/22947228/.

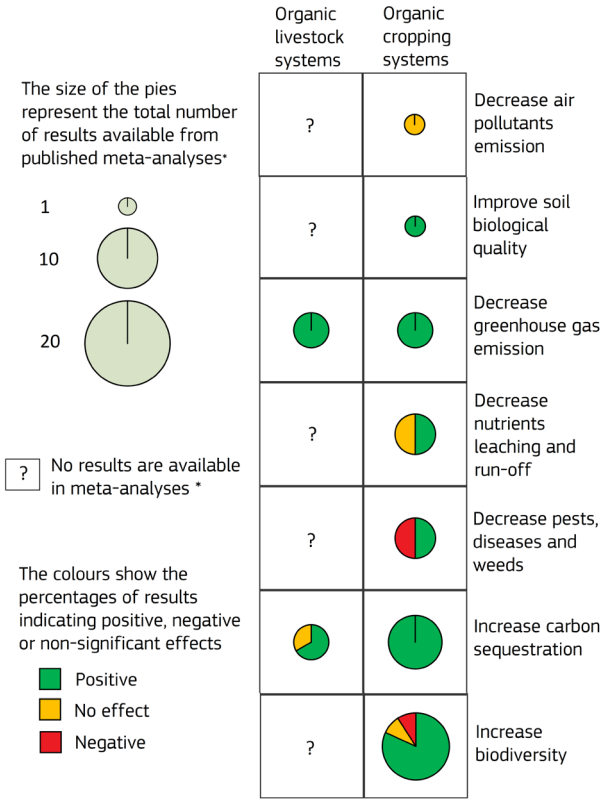
statistical analysis[32]. Considering nitrogen leaching per unit of area, the figures for organic farming are lower than for conventional farming[22], while no significant differences were observed for phosphorous leaching/run-off and ammonia emissions.

Pest abundance was found to significantly increase in organic systems compared to conventional systems, even though the natural enemies of pests were also found to be significantly higher in organic systems than in conventional systems. Organic farming does not therefore avoid the need for pest control[33]. Sections 1.10.1 and 1.10.2 of Annex II of Regulation 2018/848 in fact prescribe that the prevention of damage caused by pests and weeds shall rely primarily on the protection by natural enemies, the choice of species, crop rotation, mechanical/physical methods, and thermal processes. Only when plants cannot adequately be protected from pests by these measures, or in the case of an established threat to a crop, can certain products and substances authorised for use in organic production be used, and only to the extent necessary.

Organic farming also limits the use of antimicrobials, especially in livestock farming. Part II of Annex II of Regulation (EU) 2018/848 sets out livestock production rules. Section 1.5 of this Regulation covers the healthcare of animals and forbids the use of chemically synthesised allopathic veterinary medicinal products (including antibiotics and boluses of synthesised allopathic chemical molecules) for preventive treatment of livestock. To treat sick animals, antibiotics may be used where necessary, but under strict conditions and under the responsibility of a veterinarian, when the use of phyto-therapeutic, homeopathic and other products is inappropriate.

In terms of energy use, the production of organic cereals, oil crops, pulses, eggs and dairy products used less energy per unit of food compared to conventional production. This was not the case for fruit and meat production (similar energy use) and vegetables (higher energy use in organic systems)[34].

Figure 2.1 – Synthesis of the available scientific evidence (from published meta-analyses*) on the effects per hectare of organic farming systems (as compared to conventional) on environmental and climate impacts



**Each meta-analysis synthesises the results of large numbers (10-230) of field experiments comparing organic farming to conventional farming systems, using robust statistical methods.*

Source: European Commission, iMAP (Integrated Modelling platform for Agro-economic and resource Policy analysis), https://wikis.ec.europa.eu/display/IMAP/

[32] 'Kopittke, P, M. et al, 'Global changes in soil stocks of carbon, nitrogen, phosphorus, and sulphur as influenced by long-term agricultural production', Wiley Online Library, Vol. 23, Issue 6, 2017, pp. 2509-2519, https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.13513

[33] Andrivon, D. et al, 'Can organic agriculture give up copper as a crop protection product?', INRA, Science & Impact, Paris, France, 2018, p. 5, https://www.inrae.fr/sites/default/files/pdf/expertise-cuivre-en-ab-8-pages-anglais-1.pdf.

[34] Clark, M and Tilman, D., 'Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice', IOP Science, 2017, pp. 1-12, https://iopscience.iop.org/article/10.1088/1748-9326/aa6cd5/pdf

2.3 Social sustainability: organic farming attracts younger farmers

In most countries, farms fully converted to organic farming or under conversion attracted younger farm managers compared to conventional farms[35]. At EU level, around 21% of organic farms in 2020 had a manager aged under 40, while this proportion was only 12% in conventional farms.

In terms of gender balance, the share of organic farms run by women was lower than the share of conventional farms run by women at EU level (26% versus 32%) in 2020. However, in eight countries, the share of farms run by women was (slightly) higher in organic farming than in conventional farming: Bulgaria, Czechia, Denmark, Finland, Germany, Ireland, France, and Austria [35].

Organic farms run by women focused on olives (13% of all organic holdings run by women), general arable crops (13%), cattle-rearing and fattening (11%), and fruit (9%). Compared to conventional farms, the presence of female managers in organic farming was higher in cattle-rearing and fattening, dairying, and fruit farms. On the other hand, women were underrepresented in organic arable crops farms [35].

Despite the lower share of organic farms run by women at EU level, the income gap between farms run by women and men (i.e. farms run by women typically make less income than farms run by men) was smaller in organic farms than in conventional farms in most Member States in 2019 (-28% versus -43% at EU level).[36]

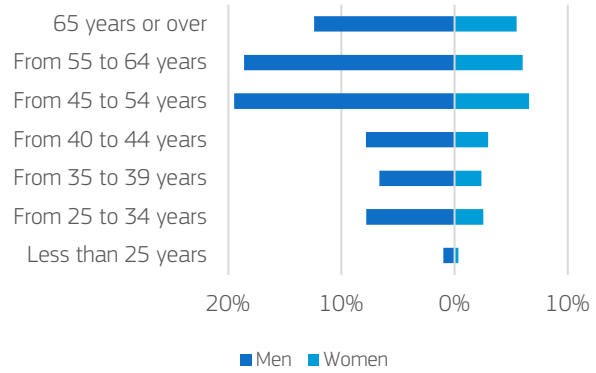
Organic farming is more labour intensive than conventional farming. To produce the same output value, more labour was needed (+4% at EU level in 2020, but with big variations among countries and types of farms, reaching up to three times more working units per output in Lithuania for arable crop production).[37]

[35] Source: Eurostat, Integrated Farm Statistics, 2020, preliminary data, https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-20-009.

[36] Source: EU FADN, 2019 data.

[37] Source: EU FADN, 2020 preliminary data.

Graph 2.12 – Share of organic holdings by age and gender of farm managers in the EU in 2020



Source: DG AGRI calculation based on Eurostat, Integrated Farm Statistics, 2020, preliminary data, specific extraction.

Higher animal welfare standards in organic farming

According to the study on 'CAP Measures and Instruments Promoting Animal Welfare and Reduction of Antimicrobials Use'[38], organic farming can also be considered as a relevant systemic approach for improved animal welfare and reduced antimicrobial use. This is because practices implemented in organic animal husbandry (according to the EU's organic regulations) differ significantly from conventional practices. These organic practices are characterised by increased space allowance, permanent outdoor access, no preventive antimicrobial use, stricter treatment management of antimicrobial use, and reduced mutilations (for safety reasons and under anaesthesia or analgesia). Specific practices are also set for each animal species. Organic cattle have longer weaning periods, more roughage-based feeding and specific bedding requirements instead of full-slatted floors. Organic pigs get litter and roughage, and organic poultry benefit from more light, more perches and nests, access to dust baths and access to fresh water whenever they want. The production of poultry bred for meat requires the use of slow-growing breeds.

[38] European Commission, Directorate-General for Agriculture and Rural Development, 'Study on CAP measures and instruments promoting animal welfare and reduction of antimicrobials use', European Commission, Brussels May 2022, https://data.europa.eu/doi/10.2762/122586

3. Organic sales

Organic food responds to consumer expectations for more sustainable food

The EU organic logo gives a coherent visual identity to organic products sold in the EU. This makes it easier for consumers to identify organic products and helps farmers to market them across all EU countries. The organic logo can only be used on products that have been certified as organic by an authorised control authority or body. This means that they have met strict conditions on how they are produced, transported and stored[39].

According to a Eurobarometer survey in 2022[40], more than six in ten Europeans (61%, +5 percentage points since 2020) are aware of the organic farming logo. This level of recognition is much higher than for other logos such as the 'Fairtrade' logo (41%), the 'protected geographical indication' logo (22%), the 'protected designation of origin' logo (16%) and the 'traditional specialty guaranteed' logos (16%).

In addition to the EU organic logo, consumers can encounter several other logos when buying food. These logos are produced by private quality schemes identifying products that claim benefits in terms of environmental protection, animal welfare, health, or social conditions. These aspects are indeed very important to consumers, as shown by a Eurobarometer survey in 2020[41].

Respondents to this survey were asked what they considered to be the most important characteristics of 'sustainable' food. 'Nutritious and healthy' (41%) was the most common response, with 4 in 10 of those surveyed mentioning this as one of the main characteristics of sustainable food. Close to a third of respondents mentioned 'little or no use of synthetic pesticides' (32%) and nearly 3 in 10 cited 'affordability of food for all' (29%) as the most important characteristics of sustainable food. Less than a quarter of respondents mentioned 'local or short supply chains' (24%) and 'low environmental and climate impact (e.g., carbon footprint)' (22%) as being the main characteristics of sustainable food, while a fifth cited 'high animal welfare standards', and 'minimal packaging, no or little plastic'. Slightly less than a fifth mentioned 'respect for workers' rights, health and safety and fair pay' (19%), 'organic' and 'minimally processed, traditional' (both 18%). 'Fair revenue for producers' was mentioned as being one of the most important characteristics of sustainable food by just 16% of respondents, while only a tenth cited 'availability' (10%).

Organic products are one of the answers to these preferences expressed by consumers about sustainable food. Around a quarter of respondents thought that eating a healthy and sustainable diet involved eating organic food (26%).

Data for Denmark (see graph 3.1)[42], which is the EU country with the highest share of organic retail sales, show that the main drivers for buying organic are avoiding spray residues in fruit and vegetables, better animal welfare and better environment and drinking water.

On average, 83% of EU respondents believe that organic food products comply with specific rules on pesticides, fertilisers and antibiotics, with the highest scores in Denmark (95%), Italy and Sweden (both 93%). At the other end of the scale, this opinion is shared to a lower extent in Lithuania (63%), Romania (73%), Bulgaria and Czechia (both 74%). In addition, 81% of EU respondents agree that organic food products are produced with better environmental practices and higher animal welfare standards than other food products, ranging from 67% in Lithuania to 89% in Italy.

A 2020 report by the European Food Safety Authority confirmed that pesticide residues are generally lower in organic food than in

[39] European Commission, 'Organics at a glance', 20.05.2022, https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/organics-glance_en.

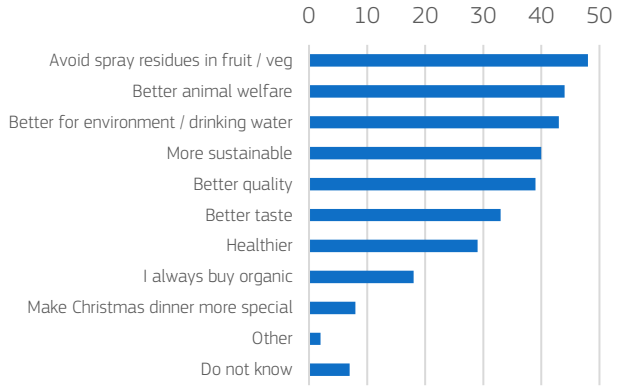
[40] Special Eurobarometer 520 – 'Europeans, Agriculture and the CAP', 2022, https://europa.eu/eurobarometer/surveys/detail/2665.

[41] Special Eurobarometer 505 - 'Making our food fit for the future – new trends and challenges', 2020, https://data.europa.eu/data/datasets/s2241_505_eng?locale=en.

[42] Source: Statista, 'What are the main reasons why you buy organic food?', 2020, https://www.statista.com/statistics/1194826/main-reasons-for-buying-organic-food-in-denmark/.

conventionally produced food. In 2020, 55% of all food samples - organic and non-organic – contained no quantifiable pesticide residues, while for the organic food sample, more than 80% contained no quantifiable residues[43].

Graph 3.1 – Main reasons for buying organic food in Denmark in 2020 (share of respondents in %)



Source: Statista, 'What are the main reasons why you buy organic food?', 2020, https://www.statista.com/statistics/1194826/main-reasons-for-buying-organic-food-in-denmark/.

Compared with conventional food, organic food was perceived as less affordable by most respondents to the 2022 Eurobarometer survey[44] in all EU countries. The countries with the highest percentages of respondents of this view were Greece (98%), Sweden, Estonia and Cyprus (all 97%), and the lowest were Romania (78%), Austria (85%) and France (90%).

Since 2020, the proportion of respondents who agree that organic food products are difficult to find in supermarkets, shops or markets in the area where they live has decreased in 15 EU countries, most strikingly in Portugal (50%, -13 percentage points), Greece (40%, -12), Austria (39%, -12), and Czechia (31%, -10). However, it has increased in ten countries, most notably in Malta (63%, +9) and Cyprus (65%, +6%). Affordability appears to be a key factor in the development of demand for organic products, with differences from one Member State to another. For instance, in Spain, higher prices are the main reason why people say they do not purchase more organic food products (55% of respondents said this, in 2021[45]). Economic developments affecting EU consumers' purchasing power, should they persist, including a phase of high inflation and slow economic growth expected in the coming years, may affect the growth of organic consumption in the EU.

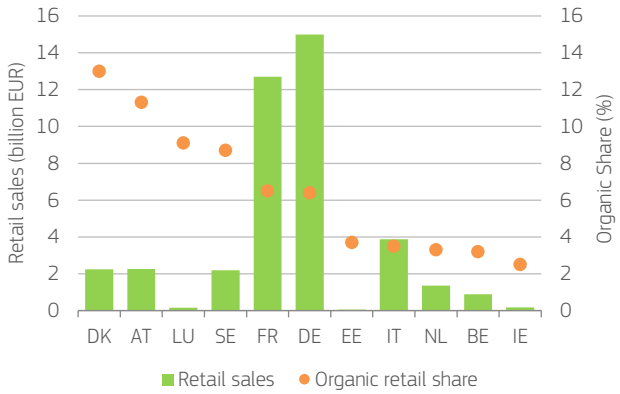
Sales of organic food increased strongly in the EU until 2020

In 2020, the world market for organic food and drink exceeded EUR 120 billion. The EU ranks second in the world for consumption of organic food, with a share of 37%, of the global market, with the United States accounting for the largest share of the global market at (41%). They are followed by China, the third largest market for organic food at 8.5%. A large majority of the EUR 44.8 billion of sales of organic food and drink in the European Union is concentrated in Germany and France, which account for 33.5% and 28.3% of the EU's sales of organic food respectively.

Compared to 2015, the EU organic retail sales were almost double in 2020, whereas the area under organic farming increased by 41%. The growth in organic sales was particularly fast during the COVID-19 pandemic, understood as the consequence of consumers paying more attention to health issues, higher food consumption at home and/or the shortage in conventional food.

There are 6 EU countries in the global top 10 countries for the highest per capita consumption of organic food globally by value: Denmark (EUR 384), Luxembourg (EUR 285), Austria (EUR 254), Sweden (EUR 212), France (EUR 188) and Germany (EUR 180). Denmark and Austria also rank as world leaders in terms of organic food's share of retail food sales (respectively 13% and 11%). The situation is very different among the EU countries. For instance, in Bulgaria, Hungary, Portugal and Romania, the share retail food sales accounted for by of organic food sales is close to 0%. In these countries, organic is still at an early development stage and demand has not yet fully emerged[46].

Graph 3.2 – Organic retail sales, share and value (in billion EUR), 2020 in selected countries



Source: FiBL & IFOAM, 'The World of Organic Agriculture, Statistics and Emerging Trends', 2022.

Organic products sales grew rapidly in the fresh food market

In the fresh food market, sales of organic products have increased in all categories in recent years, in terms of both volume and market share. A survey in France, Germany, Italy and Spain shows that eggs are the product with the highest organic share and fastest growth in the fresh food organic market[47]. Total sales volumes of organic and non-organic eggs grew by 9% in 2021 compared with 2012, but the most notable increase was in volumes of organic eggs (65%) in these four countries. The growth rate of organic eggs in France was 126% over this period, and the share of organic eggs reached 16.6% in 2021.

Organic fresh fruit and vegetables represent another success story of organic farming. In the same four countries, organic fruit volumes

[43] European Food Safety Authority, 'The 2020 European Union report on pesticide residues in food', EFSA journal, Volume 20, Issue 3, 2022, https://doi.org/10.2903/j.efsa.2022.7215.

[44] Special Eurobarometer 2022 520 – Europeans, Agriculture and the CAP, https://europa.eu/eurobarometer/surveys/detail/2665

[45] Statista, 'Reasons why people do not purchase more organic food products in Spain in 2021' 2022, https://www.statista.com/statistics/1298016/reasons-not-to-buy-more-organic-food-spain/.

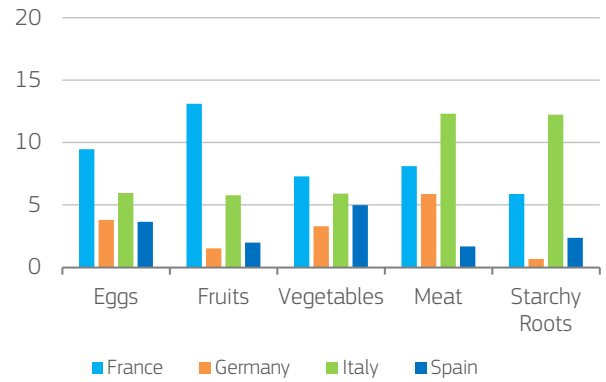
[46] FiBL & IFOAM – 'Organics international The world of organic agriculture – Statistics & emerging trends 2022', Organic World Publishing, Frick, Switzerland, 2022, 68 pp, https://www.organic-world.net/yearbook/yearbook-2022/yearbook-2022-download-pdf.html

[47] Source: Euromonitor International; Fresh Food Industry Edition 2022. Data available for four EU countries: FR, DE, ES, and IT.

increased by 57% between 2012 and 2021 and reached a share of 9% of total sales of fresh fruit, while sales of vegetables grew by 54% and also reached a share of 9% of sales of fresh vegetables. The growth rate in this sector was the highest in France (especially for fruit). However, a decrease in the consumption of organic fruit and vegetables is expected due to the current decrease in consumers' purchasing power and high inflation.

While overall meat consumption has decreased in the four countries surveyed (9%), organic meat consumption registered a spectacular growth (+91%), albeit from a low base, indicating a shift by consumers. Similarly, the consumption of starchy roots (potatoes and others) decreased by 5% whereas the organic volumes increased significantly (+32%).

Graph 3.3 – Growth in organic retail sales in volumes, annual growth rate 2012-2021 (%)



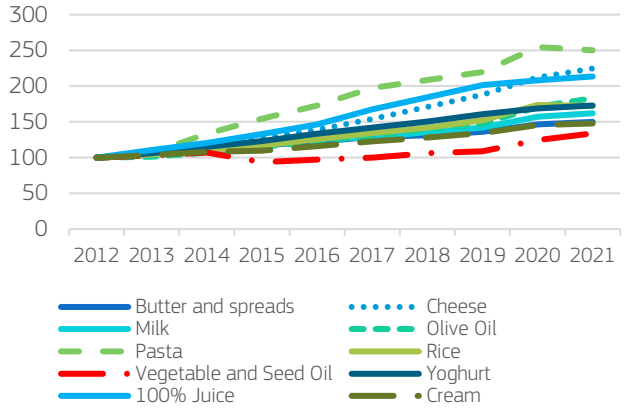
Source: Euromonitor International; Fresh Food Industry Edition 2022.

Demand is also increasing for organic packed food

Over the last decade, demand has also increased very rapidly for organic packed food in all EU countries and across all product categories.

Despite the decrease in total EU retail sales of milk (-8% compared with 2012), retail sales of organic milk increased by 62% since 2012 and reached 1.3 billion litres in 2021. Organic cheese sales grew even faster (+125%) whereas yoghurt sales increased by 73% and butter and spreads by 50%. Approximately half of the organic dairy products volumes (in each category) were sold in Germany and France.

Graph 3.4 – Retail sales of packed organic products in volumes, 2012=100, in 19 EU countries



Source: DG AGRI calculations based on Euromonitor International; Health and Wellness Industry Edition 2022. Data available for BG, CZ, HU, PL, RO, SK, AT, BE, DK, FI, FR, DE, EL, IE, IT, NL, PT, ES, and SE.

Denmark has the highest share of organic milk in overall drinking milk sales (40.3%), followed by Sweden (21%). The highest shares of organic cheese sales in the EU are in Denmark (9% of all cheese sales) and Austria (7% of all cheese sales).

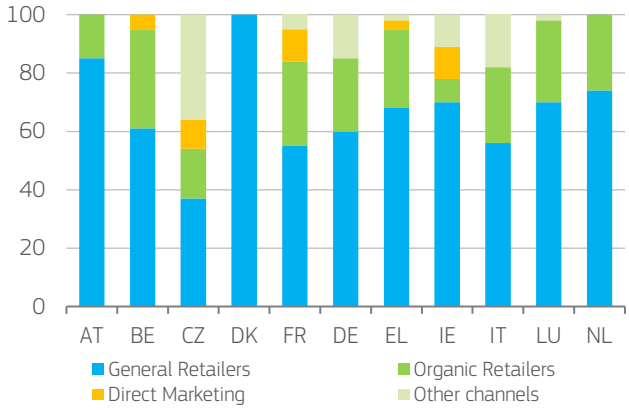
Retail sales of organic olive oil and other oils in the EU were 34 million litres each in 2021 (up +83% and +34% respectively, since 2012).

Retail sales of organic rice in the EU were 39 000 tonnes in 2021 (up 72% on 2012). Sales of organic pasta grew even faster over the period, growing by 150% and reaching 140 000 tonnes. Sales of organic juice reached 166 million litres (+113%) in 2021[48].

General retailers are the main channel for the distribution of organic food

Organic food in the EU is distributed primarily via general retailers, with peaks in those countries where the share of organic consumption is very high, such as Denmark and Austria. The second largest distribution channel for organic food consists of specialised organic retailers.

Graph 3.5 – Organic retail sales in value by distribution channel, share 2017 (%)



Source: The World of Organic Agriculture, Statistics and Emerging Trends 2022, FiBL & IFOAM.

General grocery retailers are the main distribution channel for organic packed food

The distribution of organic products through the various retail distribution channels follows different patterns from country to country. In many EU countries, large general grocery retailers (such as supermarkets, hypermarkets and discounters) dominate the organic distribution market, with a share of 90% or more of all sales in Denmark, Finland and Sweden. A large part of organic packed food is distributed via discounters in Germany (41%) and Denmark (31%). Conversely, in Hungary and Italy, half of the sales go through traditional grocery retailers. E-commerce is growing and it has reached a share of 10% or more in Hungary, Romania, Slovakia and the Netherlands [48].

[48] Euromonitor International; Health and Wellness Industry Edition 2022. Data available for BG, CZ, HU, PL, RO, SK, AT, BE, DK, FI, FR, DE, EL, IE, IT, NL, PT, ES, and SE. Volumes refer to retail only.

4. Imports on the rise[49]

For some agri-food products, production in the EU is limited (e.g. tropical products) or demand outpaces supply (e.g. sugar). Imports from outside the EU fill that gap. Data on import volumes of organic products are available from TRACES (TRAde Control and Expert System)[50]. This is the European Commission's online management tool hosting the sanitary certificates requested for intra-EU trade and importation of animals, food, feed and plants as well as the organic inspection certificates. This database does not, however, provide data on values of imports.

The EU imports organic products from over 120 countries. Imports of organic products can take place on the basis of equivalency recognitions and equivalency agreements or through recognised control bodies. The EU has currently 14 equivalency recognitions or agreements with the following countries: Argentina, Australia, Canada, Chile, Costa Rica, India, Israel, Japan, Tunisia, Republic of Korea, New Zealand, Switzerland, the United Kingdom and the United States of America. For other countries and for products not covered under such equivalencies, a series of control authorities and control bodies are recognised certifying operators who want to export their organic products to the EU on the basis of equivalence.

The new legislative framework on organics based on Regulation (EU) 2018/848 applies from 1 January 2022. It introduced a system of control authorities and control bodies recognised for certifying imports from third countries on the basis of compliance with EU rules.

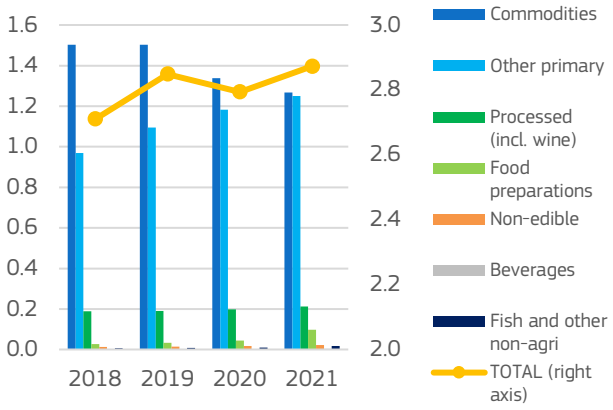
Imports of organic products on the rise

Imports of organic products into the EU increased from 2.71 million tonnes in 2018 to 2.87 million tonnes in 2021 (+6%). In terms of product classes, the principal imports are commodities and other primary products, with a combined share of around 90% of total organic imports in volume. The reported increase in imports in 2021 is notably due to the availability of data on imports from the UK.

[49] For further details: EC (2022), 'EU imports of organic agri-food products – Key developments in 2021', September 2022, European Commission, DG Agriculture and Rural Development, Brussels, https://agriculture.ec.europa.eu/system/files/2022-09/agri-market-brief-19-organic-imports_en.pdf.

[50] European Commission, TRACES, https://food.ec.europa.eu/animals/traces_en

Graph 4.1 – EU imports of organic products by class[51] (million tonnes)



Source: TRACES, data before 2021 do not include imports from the UK due to the unavailability of data at that time.

Imports of commodities have been decreasing, mainly due to the diminishing supply of oilcakes, sugar and wheat. However, imports of 'other primary' products have risen, mainly thanks to growth in the demand for tropical fruit, and in particular bananas. From 2018 to 2021, imports of tropical fruit increased by 27% to 900 000 tonnes, of which imports of bananas increased by 26% to 720 000 tonnes.

Imports of other high value products are significantly smaller. Nevertheless, they showed higher growth rates between 2018 and 2021. For example, imports of processed products (mainly juices and olive oil) increased by 13% to 210 000 tonnes, food preparations by 254% to 100 000 tonnes and beverages by 120% to 3.700 tonnes.

Exporters of tropical fruit top the list of exporting countries

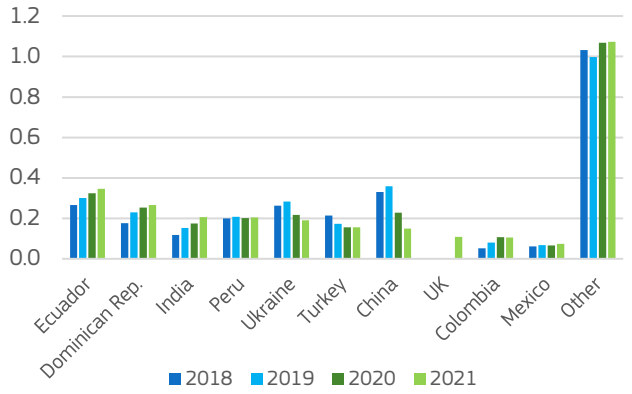
The principal exporters of organic bananas – Ecuador and the Dominican Republic – are the top exporters of organic products to the EU. Moreover, exports from these countries to the EU have increased

[51] "Commodities" includes: cereals, vegetable oils and oilseeds, sugars, milk powders and butter, unroasted coffee and cocoa. "Other primary" includes: meat products, fruit and vegetables, milk yoghurt and honey. "Processed" includes: cheese, meat preparations, wine and fruit juices. "Food preparations" includes: infant food, confectionary and pasta. "Beverages" includes: beers, spirits and soft drinks, while "non-edible" covers: plants and essential oils. Moreover, in its scope, the organic regulation also covers fishery products, which are reported under "Fish and non-agri".

by 30% and 51% respectively from 2018 to 2021. India (+74%, mainly oilcakes) and Colombia (+102%, beet and cane sugar; tropical fruit, nuts and spices) also increased exports substantially. However, exports decreased from China (-55%, oilcakes), Ukraine (-28%, wheat) and Turkey (-28%, cereals; oilseeds).

Lastly, the UK became a significant exporter of certain organic products to the EU in 2021. Exported products include dairy products (100% of EU organic imports), pet food (98%), beer (100%), poultry meat (100%), sheep and goat meat (81%) and pig meat (62%).

Graph 4.2 – EU imports of organic products by exporting country (million t)



Source: TRACES, data before 2021 do not include imports from the UK due to the unavailability of data at that time.

5. Matching the Green Deal ambition with appropriate EU support to organic farming

Main funding comes from the CAP

The EU recognises the benefits of organic farming for sustainable agriculture, food and consumers. Under the 2014-2022 CAP period, organic farmers were able to benefit from several support measures. For 2023-2027, as part of the CAP Strategic Plans, various interventions stay in place to support organic farming in the EU. Today, the main CAP funding comes from the European Agricultural Fund for Rural Development (EAFRD). Significant dedicated funding programmed under both the European Agricultural Guarantee Fund (EAGF) and/or the European Agricultural Fund for Rural Development (EAFRD) will be dedicated to support conversion to and maintenance of organic area in the upcoming funding period (2023-2027)[52].

In the 2014-2022 funding period, under measure 11 of EAFRD (payments for organic farming), 27 out of 28 Member States offered payments for conversion to (measure 11.1) and/or maintenance of (measure 11.2) organic farming[53]. Sub-measure 11.1 was implemented in all Member States except Austria and the Netherlands. For the 2014-2022 period, Member States had planned to support a total of 4.1 million ha (2.5% of utilised agricultural area) for conversion to organic farming. By 2020, effective support had reached 3.5 million ha (2.2% of UAA). Measure 11.2 was implemented by all Member States except the Netherlands, which supported organics farming through national funds[54].

The CAP, a supporter of organic

In 2020, 61.6% of EU land under organic farming received specific organic support payments [54] (on average EUR 144/ha of CAP support and EUR 79/ha of national co-financing). Organic farmers in Areas with Natural Constraints (ANC) can also receive organic farming support. Further Rural Development measures also supported the development of organic production, including investments in organic farming practices and aid for the marketing and promotion of organic products. Therefore, organic farmers had the possibility to benefit from different measures and receive higher subsidies under Rural Development than conventional farmers.

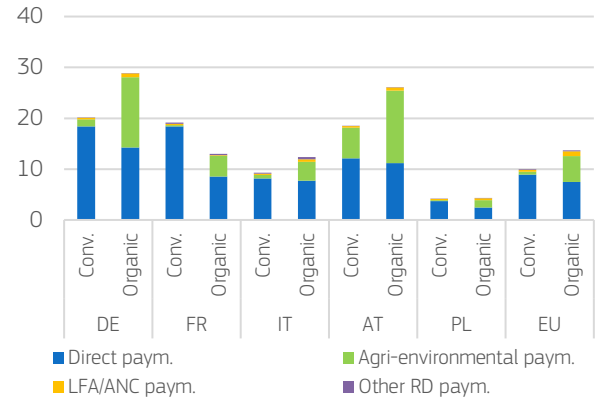
Under Pillar I of the CAP (direct payments), organic producers automatically qualified for greening payments. Producer organisations of organic fruit and vegetables also benefited from increased EU co-financing rates through operational programmes. Overall, organic farmers usually benefited from higher total EU subsidies, as illustrated in the graphs below for arable crops (+37%), dairy (+68%), and beef farms (+26%) (using 2015-2020 average data).

[52] European Commission, 'Dashboard Organic Production, Directorate-General for Agriculture and Rural Development', 2022, https://agridata.ec.europa.eu/extensions/DashboardIndicators/OrganicProduction.html

[53] IFOAM, 'Organic farming and the prospects for stimulating public goods', Brussels, Belgium, p. 15-21, 2016, https://www.organicseurope.bio/content/uploads/2020/06/ifoameu_study_organic_farming_cap_2014_2020_final.pdf?dd.

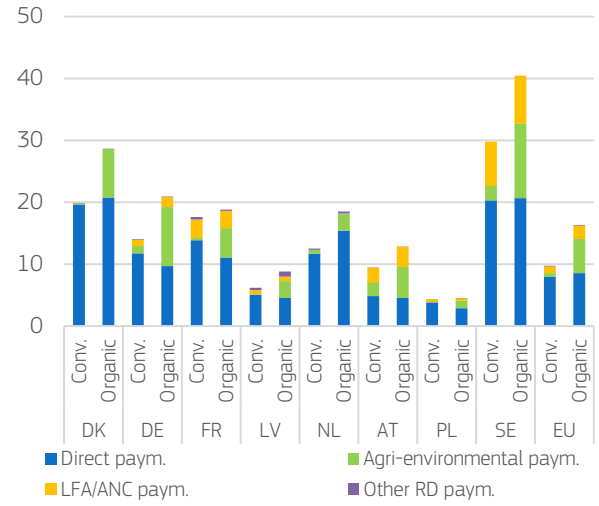
[54] Source: DG AGRI calculations based on data on programme implementation and Eurostat (online data table TAG00025).

Graph 5.1 – Subsidies to arable crop farms by type in selected countries, average 2015-2020 (thousand EUR/AWU)



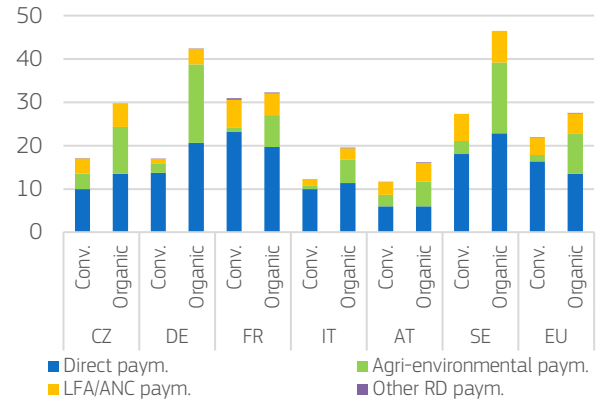
Source: EU FADN, 2020 data are preliminary.

Graph 5.2 – Subsidies to dairy farms by type in selected countries, average 2015-2020 (thousand EUR/AWU)



Source: EU FADN, 2020 data are preliminary.

Graph 5.3 – Subsidies to beef farms in selected countries, average 2015-2020 (thousand EUR/AWU)



Source: EU FADN. 2020 data are preliminary.

Organic farming contributes to four out of nine of the 2023-2027 CAP objectives. These include protecting the environment, contributing to the preservation of landscapes and biodiversity, generating a viable farm income, and responding to societal demands on food health, sustainable food and animal welfare.

In the 2023-2027 CAP, organic farming has a more prominent role and following the Farm to Fork strategy, it will play an even more important role than before. The CAP is a key instrument in achieving the Green Deal objectives, including the Farm to Fork and Biodiversity strategies' targets. One of those targets is to have 25% of EU agricultural land under organic farming by 2030 and significantly increase organic aquaculture. In 2021, the Commission launched the "Action Plan for the development of organic production" to support the achievement of this target. Member States are now implementing the EU action plan via concrete policy measures in their national organic action plans and their CAP strategic plans[55].

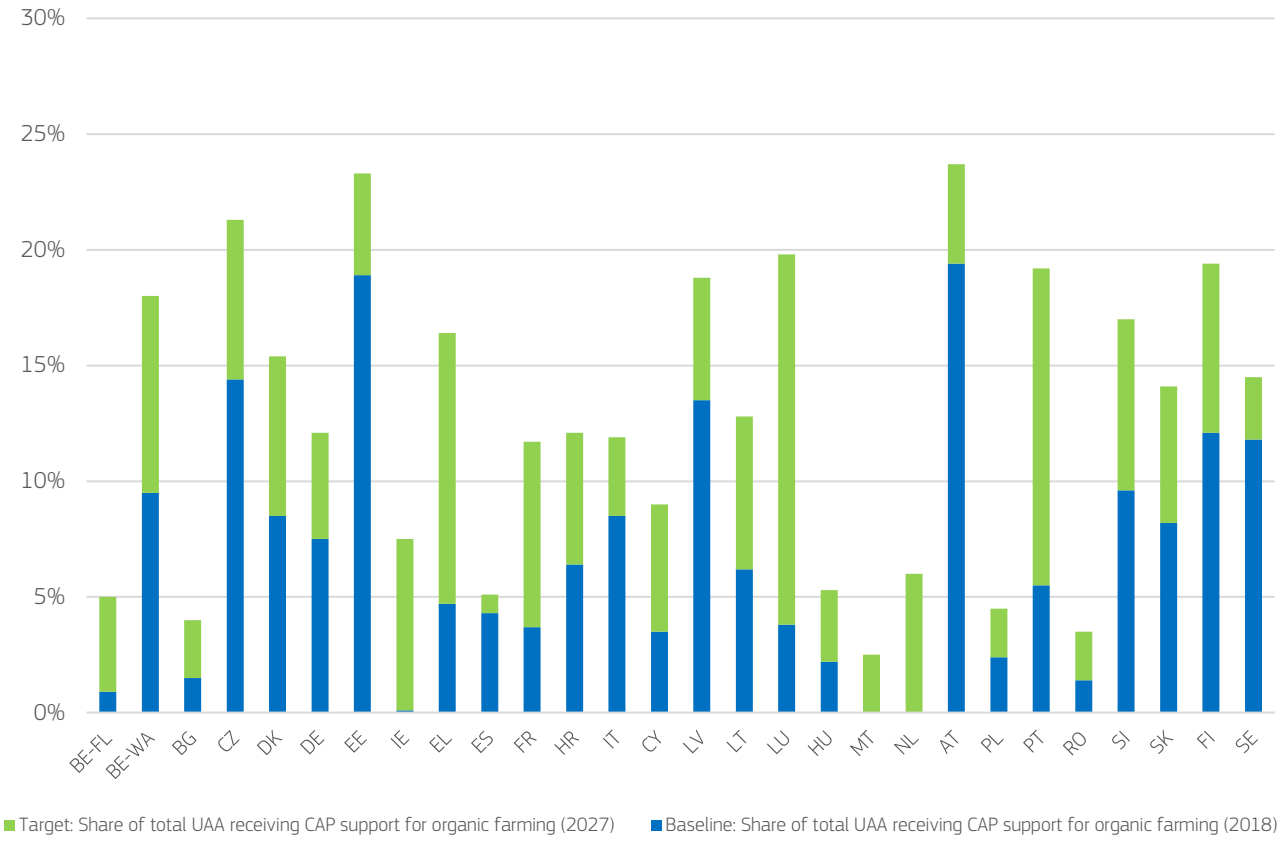
National organic farming targets

Member States were encouraged to indicate national target values for organic farming (as of a total UAA in 2030) in their CAP strategic plans and to develop national organic action plans (NOAP) (see Table 5.1). Austria, Belgium-Wallonia, Germany and Sweden have set the most ambitious targets, with 30% of UAA under organic farming to be reached by 2030. Member States' targets are, however, not directly comparable, as targets have been set for either 2027 or 2030 (or not indicated yet).

In their CAP Strategic plans, Member States have set a target value for the result indicator measuring the share of their total UAA expected to receive support for organic farming by the end of the 2023-2027 period. According to the CAP strategic plans, all Member States have set their expected target for area under organic farming with CAP support. All Member States plan to increase the area receiving CAP support. At EU level, it is expected that about 10% of the total UAA will be receiving CAP support for organic farming in 2027. However there are significant differences: 18 CAP strategic plans aim at supporting more than 10% of their UAA for organic farming with CAP funding, with 3 out of those, targeting above 20% (Austria, Czechia and Estonia).

[55] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an Action Plan for the Development of Organic Production', COM (2021) 141 final, European Commission, Brussels, 2020.

Graph 5.4 – Share of total UAA receiving CAP support for organic farming



Source: DG AGRI, based on approved CAP strategic plans.

Table 5.1 – CAP targets[56]

Country	Share of UAA under organic farming, 2020 (baseline)[57]	National target values[58] of share of UAA to be under organic farming	Share of UAA receiving organic CAP support, 2018 (baseline)	Expected share of UAA receiving organic CAP support (2027)[59]
BE-Flanders[60]	1,5%	N/A	0,9%	5,0%
BE-Wallonia[60]	12,5%	30,0%	9,5%	18,0%
BG	2,3%	7,0%*	1,5%	4,0%
CZ	15,3%	N/A	14,4%	21,3%
DK	11,5%	20,0%	8,5%	15,4%
DE	9,6%	30,0%	7,5%	12,1%
EE	22,4%	N/A	18,9%	23,3%
IE	1,7%	7,5%*	0,1%	7,5%
EL	10,2%	N/A	4,7%	16,4%
ES	10,0%	20,0%	4,3%	5,1%
FR	8,7%	18,0%*	3,7%	11,7%
HR	7,2%	12,1%	6,4%	12,1%
IT	16,0%	25,0%*	8,5%	11,9%
CY	4,4%	10,0%	3,5%	9,0%
LV	14,8%	20,0%*	13,5%	18,8%
LT	8,0%	15,0%	6,2%	12,8%
LU	4,6%	N/A	3,8%	19,8%
HU	6,0%	10,0%*	2,2%	5,3%
MT	0,6%	5,0%	0,0%	2,5%
NL	4,0%	N/A	0,0%	6,0%
AT	25,3%	30,0%	19,4%	23,7%
PL	3,5%	7,0%	2,4%	4,5%
PT	8,1%	N/A	5,5%	19,2%
RO	3,5%	N/A	1,4%	3,5%
SI	10,8%	18,0%	9,6%	17,0%
SK	11,7%	20,0%	8,2%	14,1%
FI	13,9%	25,0%	12,1%	19,4%
SE	20,3%	30,0%	11,8%	14,5%

[56] Figures are partly taken from the CAP Strategic Plans

[57] Source: Eurostat (online data table org_cropar).

[58] Based on "national value" (CAP strategic plans) or, when missing: national organic action plan (NOAP). Values for 2030, (*) 2027.

[59] Result indicator R.29 (share of UAA receiving support for organic farming in the CAP strategic plans). Target values included in the CAP strategic plan.

[60] For BE-Flanders and BE-Wallonia: 2020 Baseline for UAA under organic farming is provided in the CAP plans (not available in Eurostat). The share of UAA receiving support for 2018 is based on the rural development programme implementation report.

What interventions are available in the CAP strategic plans? Comparison of the CAP in 2014-2022 and 2023-2027

Maintenance and conversion can be funded in both pillars: eco-schemes and organic interventions

Eco-schemes (ES) are payments under the first pillar of the CAP that contribute to protecting the environment, climate, and animal welfare. They are a key element of the legislative framework on the future of the CAP. As a minimum, 25% of direct payments in 2023-2027 will be linked to those eco-schemes helping deliver better environmental and climate performance compared to 2014-2022.

Table 5.2 – Interventions applied by Member States to support organic farming in the period 2023-2027[61]

Country	Conversion		Maintenance	
	ES[62]	RD[63]	ES	RD
BE-FL		x	x	
BE-WA		x		x
BG	x	x	x	x
CZ		x		x
DK	x		x	
DE		x		x
EE	x	x	x	x
IE		x		x
EL		x	x	
ES		x		x
FR		x	x[64]	x[64]
HR		x		x
IT		x		x
CY		x		x
LV		x		x
LT	x		x	x
LU		x		x
HU		x		x
MT		x		x
NL	x		x	
AT		x		x
PL		x		x
PT	x	x	x	x
RO		x		x
SI		x		x
SK		x		x
FI		x		x
SE	x		x	
Total	7	24	10	23

Eco-schemes are an integral part of the "green architecture" of the CAP strategic plans. They also consist of an increased level of basic requirements (encompassing "cross compliance" and "greening" of the 2014-2022 CAP) as well continuing with agri-environment-climate interventions under rural development. Each Member State must establish a list of eco-schemes adapted to its own environmental objectives. Farmers' participation in one or more eco-schemes in the framework of the CAP is voluntary. Compared to the Greening[65] measures of the 2014-2022 CAP, eco-schemes offer more flexibility. This is because the content and budget for each measure of the eco-schemes can be chosen freely, as long as they contribute to at least two of the environmental, climate and/or animal welfare objectives set out in the CAP Strategic Plan regulation. Farmers can select and implement the appropriate measure for their farm.

The design of support for organic interventions varies among Member States. Some Member States promote conversion to organic through eco-schemes in the first pillar, and existing organic farms receive their payments through the second pillar (rural development interventions), as in the current programming period. Other countries may support conversion through EAFRD payments in the second pillar and provide support to existing organic farms through eco-schemes. In some Member States, organic interventions are offered exclusively through pillar 1 or pillar 2 for both conversion and maintenance.

Other CAP support

The CAP does not only finance conversion to and maintenance of organic farming. Other measures have either a direct or indirect impact on organic farming: organic farmers can also benefit from support from other measures such as knowledge transfer and innovation actions, sectorial interventions, advisory services, quality schemes for agricultural products and foodstuff (including promotion and information measures), investments, farm business development, setting up of producer groups and organisations, agri-environment-climate measures (AECM), Natura 2000 and Water Directive payments, payments to areas facing natural or other specific constraints, animal welfare, cooperation (including EIP-AGRI) and LEADER[66].

In the interventions of the fruit and vegetables sector, organic production is included. In the wine sector, there is funding for information campaigns concerning quality schemes such as organic production.

[61] The figures are partly taken from the CAP strategic plans.

[62] Eco-schemes.

[63] RD: Rural development interventions

[64] Conversion is supported under rural development in both Metropolitan France and French overseas regions. Maintenance is supported under eco-schemes in Metropolitan France, and under rural development in French overseas regions.

[65] Farmers were entitled to greening payments if they complied with the mandatory practices beneficial to the environment. Organic farmers automatically received greening payments for their farm in the 2014-2022 CAP period because organic farming is considered to provide an environmental benefit by definition.

[66] IFOAM, 'Organic Action Plans. Development, Implementation and Evaluation - A Resource Manual for the Organic Food and Farming Sector', Brussels, Belgium, p. 21-27, https://www.fibl.org/fileadmin/documents/shop/1507-organic-action-plans_1.pdf

National organic support remains a priority of Member States

Additional national organic subsidies, outside the CAP, encourage supply and demand for organic products. Most EU countries have shown their determination and willingness to develop the organic sector using national funds. Strategic national or regional plans support land use under organic farming and consumption of organic products. Some Member States, for example, have introduced a fixed proportion of organic food in public catering.

Non-CAP support

The European Investment and Structural Funds (ESI funds) offer support to EU producers, SMEs and organic stakeholders through operational programmes. ESI funds are part of the EU's Common Strategic Framework (CSF) and aim to support economic development in all Member States, as part of the Europe 2020 strategy.

6. Research and innovation in the organic sector

Organic farming is a knowledge-intensive, rather than input-intensive, form of agriculture. Research and Innovation (R&I) is crucial to boost organic farming, by supporting knowledge generation and innovations to help organic farmers comply with EU organic rules.

Under the EU's Research and Innovation framework programme Horizon 2020 (2014-2020), the EU has funded several research projects that focus on organic farming. These account for more than EUR 50 million of EU funding and involve more than 150 partners from more than 20 EU Member States, as well as associated countries and international partners. These projects address specific challenges facing organic farming and are helping to meet the EU's targets for type of production. EU-funded research is addressing key areas like organic crop breeding, through projects such as LIVESEED, ECOBREED, and BRESOV, which increase the availability and quality of organic seeds. Replacing and phasing out contentious inputs in organic farming, such as copper, is the objective of RELACS and Organic PLUS. These projects foster the development and facilitate the adoption of cost-efficient and environmentally safe tools and technologies. Furthermore, the project BIOFRUITNET is working to make European organic fruit production more competitive.

Promoting the exchange of knowledge among farmers, farm advisers and scientists is a key objective of EU-funded research focusing on organic farming. The OK-Net Arable project significantly contributed to this objective. It made material and information accessible to farmers through the Organic Farm Knowledge (OFK) platform. It aims to increase productivity and quality in organic arable cropping all over Europe. In livestock production, EU-supported research has investigated alternative sources of high-protein animal feed and helped organic farmers move towards 100% organic feed through the OK-Net EcoFeed project.

The EU also promotes and supports the coordination of European transnational research in organic food and farming systems through CORE Organic, a network of European ministries and research councils funding national research in organic food systems. Research funded under CORE Organic addresses central parts of organic agriculture, including soil fertility and weed management. On animal husbandry, projects address important aspects such as animal health and welfare, resilience, robustness and feeding. In addition to the organic farming-specific projects mentioned above, several other research projects funded under Horizon 2020 concerned the organic sector, notably in areas like crop diversification, plant health and sustainable husbandry systems.

The European Commission is further increasing support to R&I in organic farming under Horizon Europe (2021-2027). This is fully in line with the Farm to Fork and Biodiversity strategies' objective to boost organic farming, as well as with the new Action Plan on the Development of Organic Production. Under this action plan, the European Commission intends to increase R&I and dedicate at least

30% of the budget for R&I actions in agriculture, forestry and rural areas to topics specific or relevant to the organic sector. This commitment can already be seen in the first Cluster 6 of the Horizon Europe Work Programme (2021-2022), under which at least 35% of the budget allocated to research in the above areas is devoted to topics that are relevant to the organic sector. This includes organic crop breeding, fraud prevention, and foresight for reaching the Farm to Fork target on organics. EU-funded research on agroecological practices in a wider sense also benefits the organic sector, including areas such as plant health, climate change mitigation and adaptation, and agroforestry. EU-funded research will continue to look at the potential of digital tools to support the specific needs of organic farming, such as block-chain technologies to improve the traceability of organic products. Besides calls for projects, the Commission is tapping into the potential of other instruments under Horizon Europe to boost the organic sector. One key instrument to mention in this regard is the EU Mission 'A Soil Deal for Europe', under which the specific contribution of the organic sector to aspects such as soil biodiversity and soil carbon will be analysed.

The next 'Cluster 6' of the Horizon Europe Work Programme (2023-2024) will provide further opportunities and will continue to help tackle barriers to boost the organic sector and reach the Farm to Fork target on organics. This will include a future R&I partnership on agroecology currently under development and provisionally entitled 'Accelerating farming systems transition: agroecology living labs and research infrastructures'. The partnership will set up and support a European-wide network of living laboratories (living labs) as spaces for co-creating solutions to local needs. It will put the farmer at the centre of R&I activities, thus accelerating progress on the ground.

Most EU-funded research projects relevant to organic farming implement the multi-actor approach. This means that organic farmers are genuinely involved in the research projects, using their knowledge and/or entrepreneurial skills to develop solutions and create 'co-ownership' of the results. This speeds up the acceptance and take-up of new ideas, approaches and solutions developed in the project. As part of the requirements, multi-actor projects must involve operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) funded under the CAP as much as possible. Research projects focusing on organic farming therefore contribute to strengthening the links between the Horizon Europe programme and the CAP.

The CAP supports Operational Groups of EIP-AGRI. These Groups are intended to bring together multiple actors – such as farmers, researchers, advisers, businesses, environmental groups, consumer interest groups and other NGOs – to advance innovation in the agricultural and forestry sectors. In the EIP-AGRI Operational Groups database[67], as of November 2022, 72 out of 2 433 Operational Groups have been registered as dealing with organic farming. The types of projects for Operational Groups are very broad. Nevertheless, the project must contribute to the EIP-AGRI objective of promoting agricultural innovation that is more resource-efficient, productive, low in emissions, climate-friendly, and resilient, while operating in harmony with the essential natural resources on which farming depends.

[67] European Commission, 'EIP-AGRI – Operational Groups', 2022, https://ec.europa.eu/eip/agriculture/en/eip-agri-projects/projects/operational-groups

Contact: DG Agriculture and Rural Development, Analysis and Outlook Unit
Email: Agri-A2@ec.europa.eu

Twitter: @EUAgri

#AgriOutlook

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