Organic farming in the EU
A fast growing sector

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Organic production is an overall system of farm management and food production that contributes to the preservation of natural resources and applies high animal welfare and production standards.

Recent production and market trends show the importance that organics has gained over the last decade. Organic farming responds to a specific consumer demand for sustainable food products, promoting more sustainable farming practices and contributing to the protection of the environment and improved animal welfare. This growing demand for organic products is matched by a rapidly growing production: EU organic area increased by 70% in the last ten years and organic retail sales reached EUR 34 billion in 2017, providing farmers with further added value on their production.

The aim of this brief is to describe the main features of the organic sector and report on the latest production and consumption trends.
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- 7% organic land out of total EU farmland in 2017
- Almost 250,000 organic farms in the EU in 2016
- 2x Organic farms are on average almost twice as big as conventional farms
- +70% Over the last ten years, organic area has risen by more than 70% indicating a very dynamic and quickly rising sector

Yields on organic farms may be significantly lower, ranging between 40% & 85% of yields in conventional farming

Premiums on producer prices for organic products reach up to 150% in addition to conventional prices

The EU is the second largest consumer of organic food in the world, with €34.3 billion retail sales in 2017

3.3 million t of organic agri-food products were imported in 2018, under the principle of equivalence of production standards
1. Organic production

Growing organic area in the EU

At global level in 2017, 69.8 million ha were farmed organically (including area in conversion towards organic). The EU reached 12.6 million ha in 2017, which represents 18% of the global organic area and 7% of total EU agricultural land. The impressive growth of organic production by 70% over the past ten years reflects the importance gained by the sector.

Figure 1 – Evolution of EU organic farmland, 2005-2017 (million ha)

Source: Eurostat

On average, organic area in the EU increased annually by 5.6% over the period 2007-2017.

Figure 2 – Organic land, area 2012 and 2017 (million ha), and share 2017 (%), main producing countries

Source: Eurostat

Over half of the EU’s organic area is concentrated in four countries: Spain, Italy, France and Germany. However, looking at the share of organic in total agricultural land, leading countries are Austria (23%), Estonia (20%) and Sweden (19%).

The area under conversion (20% of the 12.6 million ha in 2017) provides an indication of the potential growth in the organic sector for the upcoming years. Eleven EU Member States had shares of areas under conversion between 10% and 20% and eleven exceeded 20%.

Figure 3 - Area under conversion to organic, 2017 share of total organic area (%), by country

Source: Eurostat

Reform of the organic legislation: levelling the playing field

Under the current legislation², Member States benefit from the possibility to grant derogations from production rules on an ad hoc basis. Similarly, rules for imported organic products may also differ from those set in the EU legislation, as long as these are considered ‘equivalent’ or were certified organic.

In 2021, the new legislation on organic production³ will enter into force. The reform aims at building a level playing field for the production of organic products on the EU market, targeting EU production and imported organic products.


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1 The slowdown observed in the data in 2012-2013 may be related to the change in survey methodology implemented from 2012 onwards, rather than an actual slowdown in growth.
The added value of the new regulation is to harmonise rules for all actors. Imported goods will have to comply with the same production and control rules as applied in the EU. Simplification is also an important element of the reform. In particular for small farmers, the new group certification scheme is expected to reduce the administrative burden and certification costs. Another simplifying factor is the possibility to get an exemption from the annual on the spot controls if the holding has a clean record for the past three consecutive years.

Grassland is the main organic land use

In 2016, the largest share of EU organic area was permanent grassland (44%), representing 5.6 million ha. This area is used for organic cattle farming (both meat and dairy), which requires access to outdoor grazing areas. Further organic area is devoted to green fodder (17%), cereals (16%) and permanent crops (11%).

**Figure 4 – Land use of organic and conventional land, 2017, by crop (%)**

While the share of organic area in total production area of dry pulses (14%), permanent crops (12%), green fodder (10%) and permanent grassland (9%) are above the 7% average, the share of organic cereals (4%) and oilseeds (2%) lags well behind, despite a strong annual growth rate of organic oilseeds area of 13% over the period 2012-2017.

The significant production of organic permanent crops is driven by the high demand for organic fruits and for organic wine. Area for organic fruit represents 29% of the total organic permanent crop area. Spain has the largest area devoted to organic fruit (39% of the organic fruit area). A further 24% of the permanent crop area is devoted to vineyards, located mainly in Spain (33%), France (24%) and Italy (32%).

Overall, 72% of all organic permanent crops are grown in Spain and Italy, covering together almost 1 million ha.

**Figure 5 – Organic land use, share 2017 and annual growth rate 2012-2017, by crop (%)**

**Organic animal production remains small**

Despite a fast growth, EU organic animal production remains small in comparison to total EU animal production, at about 3%. In 2017, about 5% of the cattle herd and 6% of the sheep and goat flocks were estimated to be organic, while for poultry and pigs this was estimated at respectively 3% and less than 1%. Extensive grass-fed systems of 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).

**Figure 6 – Organic livestock, share 2017 and annual growth rate 2012-2017, by livestock (%)**

Nevertheless, organic pig and poultry production show higher annual growth rates (respectively 6% and
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The growth of laying hens, which represent about 40% of organic poultry, is estimated higher, at around 13%. Austria shows the highest share of organic livestock, with 22% of cattle, 29% of sheep and goats and 3% of pigs. Further countries with a high share of organic animal production include Sweden (21% of both cattle and sheep, 2% of pigs), Denmark (13% of cattle and sheep and goats, 3% of pigs) and Latvia (24% of cattle, 31% of sheep and goats).

**Figure 7 – Organic cattle, number of heads 2012 and 2017 (thousands), and share 2017 (%), main producing countries**

Organic dairy production in the EU is largely concentrated in the EU-15. Between 2012 and 2017, the size of the organic dairy herd in the EU has increased annually by around 5.7% and the annual milk production by around 6.3%. Austria, France and Germany, hold 51% of the organic dairy cows in the EU.

**Figure 8 – Production of organic milk, volume 2012 and 2017 (thousand t), and share 2017 (%), main producing countries**

All EU Member states show an increase in organic milk production, except for Poland and Estonia which show a decrease of production in 2017 of respectively 26% and 41% compared to 2012. Despite this increase, the share of organic milk in total milk production is still low, just below 3% in the EU in 2017, but growing in most Member states. However, there are four exceptions: organic milk accounts for a significant share of production in Austria (16%), Sweden (15%), Latvia (10%) and Denmark (10%). Within organic dairy, drinking milk holds the first place.

**Figure 9 – Production of organic dairy products, volume (thousand t milk equivalent) 2017, main producing countries**

Environmental benefits of organic production

Organic farming has to comply with strict standards with regard to the use of chemicals (no synthetic fertilisers and pesticides, stricter rules on animal medication). Numerous studies show evidence of the resulting positive environmental impacts of organic agricultural practices. These include benefits in terms of greater biodiversity and higher soil organic matter4. Besides, organic production is reported to lead to lower emissions of nitrates ammonia and energy than conventional farming on a per hectare basis5. There is however no consensus on the precise contribution of organic farming and the debate is ongoing.

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Critical voices claim also that organic agriculture is inefficient, as the yield gap (see below) requires more area to produce a similar amount of food.\(^6\)

### 2. Characteristics of organic farms

**Organic farms tend to be bigger**

In line with the growth in organic area, the number of organic holdings increased over the last years, in contrast to the declining trend in total number of agricultural holdings. The number of organic farmers grew by 9% in 2016 compared with 2013.

**Figure 10 – Evolution of agricultural holdings and organic holdings, 2003-2016 (thousands)**

![Graph showing the evolution of agricultural holdings and organic holdings, 2003-2016 (thousands)](source: Eurostat)

**Figure 11 – Size of total holdings and organic holdings, 2016 (%)**

![Bar chart showing the size of total holdings and organic holdings, 2016 (%)](source: Eurostat)

Observing the average size of farms, again a different pattern emerges: organic farms are on average almost two times larger (30 ha compared to 17 ha for an average farm). This could be linked to the extensive and grassland-based production systems in the organic sector, but also to the low number of organic farms in Romania\(^8\). Over 66% of organic holdings own 10 ha or more (vs. 20% average for all farms) and only 7% less than 2 ha (vs. 43% for all farms).

**A significant yield gap, possibly compensated by higher producer prices**

Organic production is characterised by a significantly lower yield than under conventional production. The gap is particularly important for wheat, with a yield ranging between 40% (Germany) and 85% (Italy) of conventional yields. The gap for organic maize yields and milk yields is lower, but may still represent a strong disincentive if not compensated by higher prices.

**Figure 12 – Organic yields compared to conventional yields (= 100), average 2012-2016**

![Graph showing organic yields compared to conventional yields (= 100), average 2012-2016](source: EU-FADN)

\(^6\) Also refer to: European Commission, DG Agriculture and Rural Development (2018), *EU Agricultural Outlook for markets and income 2018-2030*, box on Organic farming and climate change

\(^7\) Data in the graph originates from the Farm Structure Survey from Eurostat. Differences in methodology compared to the annual survey results in differences in data between both datasets. Moreover, it should be noted that not all farms are 100% organic.

\(^8\) 33% of all EU agricultural holdings are located in Romania, of which 72% below 2 ha. Less than 0.1% of Romanian farms are organic.

\(^9\) FADN data is based on a sample of farms, which is representative of EU farming in terms of farm types and regions, but not representative of organic farms. Due to this limitation, FADN results should be considered with care.

Lower yields seem however to be counterbalanced by higher producer prices. In Germany, organic wheat producers received up to 150% price premium over conventional prices. Price premium for milk producers are on average lower.

**Figure 13 – Premium on producer price for organic wheat (conventional = 100), 2009-2016**

![Graph showing premium on producer price for organic wheat compared to conventional, 2009-2016.](source: EU-FADN)

While evidence suggests that organic farming creates more added value and achieves higher margins per production unit, organic farmers’ share of value-added in the food chain do not significantly differ from those in conventional supply chains (between 9 % and 62 % share of retail prices for organic products compared to between 6 % and 40 % in conventional).\(^{11}\)

**Figure 14 – Premium on producer price for organic milk (conventional = 100), 2009-2016**

![Graph showing premium on producer price for organic milk compared to conventional, 2009-2016.](source: EU-FADN)

Resulting farm net income is not systematically higher

To assess organic farmers’ income, production cost should also be considered. Input costs are classically lower on organic farms, due to minimal use of fertilisers and pesticides. The costs for fuel and lubricants are similar and sometimes higher, since there is usually a stronger reliance on mechanical techniques in organic farming. Organic farming is on average also more labour-intensive.\(^{12}\) Overall, in terms of income, this results in varying performance of organic farms over conventional.

**Figure 15 – Net market income per annual work unit for field crop farms, average 2012-2016 (thousand EUR/AWU)**

![Graph showing net market income per annual work unit for field crop farms compared to conventional, 2012-2016.](source: EU-FADN)

**Figure 16 – Net market income per annual work unit for milk farms, average 2012-2016 (thousand EUR/AWU)**

![Graph showing net market income per annual work unit for milk farms compared to conventional, 2012-2016.](source: EU-FADN)

Despite increasing organic production in the EU, a minimum of 2 % of organic producers were quitting organic production annually over the last five years.

\(^{11}\) Thünen Institute of Farm Economics (2016), *Distribution of the added value of the organic chain*, study for the European Commission

\(^{12}\) Also refer to: European Commission, DG Agriculture and Rural Development (2013), *Farm Economics Brief, Organic versus conventional farming, which performs better financially?*
(retiring or switching back to conventional farming). Partial data reports on average 4 500 agricultural producers quitting organic production annually over the 2013-2017 period, compared to an average of 5 400 newly registered producers.\textsuperscript{13} Production constraints and costs associated to organic farming appears to be an important motivation to switch back to conventional farming. In particular, bad crop years can be triggering the decision. Further reasons include the lack of local demand and the bureaucracy and costs of certification. The latter has also incentivised some producers to apply organic practices without certification.

### Under conversion labels for wine

There is little doubt that organic wine is a success story, driven by a strong and growing demand for a product with significant profit margins. France is the leading EU organic wine producer, with a 9 % share and an 18 % growth in 2016 compared with 2017. Despite a lower production, significant growth is also observed in Italy (24 %) and Spain (11 %).

Growing organic wine demands high labour resources: conservation tillage, thorough vineyard observation to prevent intervention, manual work when weeding or preparing the soil, etc. Moreover, the average yield is significantly lower (e.g. averaging 70% of conventional yields in Spain). The three-year conversion period for wine to be granted with the organic label represents an important cost for the producer.

To partially compensate this loss, a specific label has been set up in France, to designate wine produced on a vineyard under conversion to organic. French winemakers may use this label after the first year, and therewith benefit from higher consumer prices.

### Pesticides in bananas in Sweden contributed to increased organic consumption

In 2013, a debate rose in Sweden, when seven different types of pesticides were found in a single banana during tests by Testfakta, an independent testing and research company. Reactions were strong and contributed amongst other drivers to the significant increase of the organic food market by 36 % annually over the next two years.

### The EU ranks second in global organic consumption

In 2017, the global organic food and drink market reached EUR 92 billion. The US accounts for 47 % of the global market, followed by the EU, with 37 % (EUR 34.3 billion). Over the last ten years, the EU market doubled its size and it continues growing at a significant pace (11 % in 2017 compared to 2016), indicating that it has not yet reached its maturity stage.

The penetration of organic food products varies significantly between countries. The largest EU markets for organic are Germany, with 10 billion EUR (5.1 % organic in total retail sales), and France, with 7.9 billion EUR (4.4 %). The French organic retail market is a good example of a country where organic has overcome its introduction stage and has now earned its place. Consumers have become more environmentally aware and organic sales increase significantly (18 % in 2017).

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\textsuperscript{13} Data available is very limited and countries covered by the data together represent only between 10 %-20 % (depending on the year) of total organic producers registered. While the lack of data do not allow grasping the extent of the phenomenon, it allows identifying it.

\textsuperscript{14} Mondelaers, K., W. Verbeke G. Van Huylenbroeck (2009), \textit{Importance of health and environment as quality traits in the buying decision of organic products}, British Food Journal, Vol. 111 Issue: 10, pp.1120-1139

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In spite of the already high shares, organic integration in Denmark and Sweden continues, with a respective growth of 15% and 9% in 2017 compared to the previous year. Denmark is with 13.3% the country with the highest integration of organic worldwide. Over the last years, consumers in Denmark and Sweden have been showing a great commitment to high profile food and a growing interest on getting to know the production methods and origins of what they eat. Likewise, the organic share in Austria pursued its growth in 2017 by 12% to reach 8.6% of retail sales.

A lower integration of organic products is observed in a number of other countries, including Spain (2.8%) and Italy (3.2%). Eastern European and Baltic countries also show a below average uptake of organic with 0.9% in the Czech Republic, 2.6% in Estonia, 1.5% in Latvia and 1% in Lithuania. In these countries, organic is still at an early development stage and demand has not yet fully emerged. Growth of the sector is nevertheless slightly above average in Spain and Italy at respectively 16% and 8% in 2017, which is an indication that organic consumption is taking off.

This growing demand for organic is also well reflected in the annual per capita expenditure, which averaged EUR 67 in 2017, compared to EUR 29 in 2007.

**Organic eggs dominate organic retail sales**

The market shares of specific organic food products provide useful information to assess consumption trends more in detail. Here again, different preferences emerge in different countries.

Eggs have the highest retail market share in organic within the EU, with an exceptionally high penetration in some countries: 33% in Denmark, 30% in France, 22% in Austria and 21% in Germany. The growth rate remains high.

Organic fresh fruit and vegetables represent another success story of organic farming, with over 10% organic consumption in Austria, Denmark and Sweden, and a sustained growth rate.

Consumption of organic dairy is also significant, in particular in Austria and Sweden, respectively at 11% and 10%. Penetration rates of organic drinking milk are particularly high in Denmark and Austria with respectively 32% and 18% of consumption.

**Figure 17 – Organic retail sales, share and value (in billion EUR), 2017**

![Graph showing organic retail sales and shares for different countries.]


On the other hand, organic does not appear to take off as quickly in further food products, such as beverages (excluding wine) and meat. However, with regard to organic meat, despite a relatively low market share in most EU countries, retail sales indicate a high growth, up to 12% in Italy and 13% in the UK.

Penetration rates are also particularly low (1% or less) in a range of processed food products, such as savoury snacks, sweet biscuits and confectionary, frozen food, sauces and ready meals10.

**Conventional stores represent the main distribution channel**

The distribution of organic products through the various retail distribution channels shows different patterns from country to country. In many EU countries, conventional retailers (supermarkets) dominate the organic distribution market, with over 75% in countries like Austria, Denmark and Sweden. Conversely, in Portugal and Spain, distribution goes primarily through the specialised channel, i.e. organic products specialised stores. The distribution structure seems linked to the share of organic in retail sales: while organic products represent an integral part of the shopping basket of many Swedes, Austrians and Danish, these are made widely and easily accessible

10 Rabobank (2018), An Odyssey into a parallel Universe
through the conventional distribution chain (e.g. supermarkets). In other countries like Spain or Portugal, organic food is still perceived as a niche market with an exclusive status, mainly purchasable in specialised organic stores.

Other distribution channels include the catering industry, online sales or direct sales (e.g. box scheme delivery). A growth in consumption through these channels is reported in a number of EU countries over the past years. For example, public procurement of organic products (for catering in schools, hospitals, etc.) reached 33% of public consumption in Sweden in 2018 and 20% in Denmark.

**Figure 19 – Organic retail sales by distribution channel, share 2017 (%)**

![Graph showing distribution channels of organic retail sales](image)


The controversial discussion on packaging

Many voices highlight the ironic situation where organic food is sold in supermarkets wrapped up in non-environmentally-friendly packaging including plastic, polywrap and metal. While legislation requires organic products to be packaged to prevent it being mixed with non-organic products, a clear trend demands for greener packaging. A wide range of companies in the sector has taken on the challenge, proposing environmentally friendly alternatives to plastic packaging in the form of compostable biomaterials.

**4. Balancing demand and supply**

**Finding a market for organic production**

One of the challenges in the organic markets is the delicate balance between demand and supply. A mismatch between demand and supply may occur when the locally produced organic food exceeds the local demand for that particular food product. Trade can to a certain extent solve the issue – however, some consumers associate organic food with local food and perceive long-distance transport as challenging the basic principles of organic. Further consumption trends may also impact the demand for organic products, such as for example veganism.

Remunerative outlets for unsold organic products may also be missing. For example, on the conventional market, surplus milk can be processed into milk powder or other goods with longer shelf life. This is more difficult with organic milk surpluses, due to a lack of demand for organic milk powder. Organic milk therefore is sometimes sold as conventional, at the same price as conventional milk. With a growing demand, the share of declassified milk shows however a declining trend.

While a farmer’s decision to convert to organic production needs to be taken several years in advance, the uncertainty of finding a market for the organically-produced food may refrain conversion to organic, despite the steady growth in demand.

**Organic producing countries are not systematically the biggest consumers**

While Italy and Spain are amongst the four largest producers of organic, their consumption lags behind. A large share of their production is therefore exported. Similarly, countries with a high share of organic land, like Austria and Sweden, may produce in excess of domestic demand. Little data is available on intra-EU trade of organic food.

The graph below sets in perspective the share of organic in retail sales with the share in land use.

**Figure 20 – Organic retail sales, share and value, and organic land use, share, 2017**

![Graph showing organic retail sales vs. organic land use](image)

Source: *Land use from Eurostat, retail sales from The World of Organic Agriculture, Statistics and Emerging Trends 2019, FiBL & IFOAM*

17 Hermansen, J., M. Knudsen, C. Schader (2013), *Globalization of organic food chains and the environmental impacts*, Organic Agriculture for Sustainable Livelihoods, Ch. 3
Compensating deficits in availability of organic products with imports

For a range of food products, demand seems to grow at a faster pace than supply. Factors behind this include the production costs and required investments, which may represent a disincentive for producers despite the price premium, as well as the two to three-year conversion process, which creates a time lag to address demand. This translates for some products, such as pork meat, in a slow uptake of organic production and consumption.

Imports from outside the EU partly compensate the gap. In 2018, 3.3 million t of organic food were imported.

**Figure 21 – EU organic imports, share in volume (t), 2018**

Significant products include food not or little produced in the EU, such as tropical fruits and nuts (24 % of organic import volumes) and coffee and tea (4 %), or commodities with a low share of organic EU production, including cereals (22 %, including wheat and rice), oilmeals and oilseeds (20 %, including soya beans) and sugar (5 %).

**From equivalence to conformity**

Under the current legislation (see box above), imported organic products must prove they conform to standards equivalent to European produced goods. To ensure this, a certification procedure is set up. For countries which standards and control measures have been assessed as equivalent to those in place in the EU (e.g. Australia, Canada, etc.), inspection is carried out by the national authorities of the country of origin, which then issues a certification of equivalence. In all other countries, inspection and certification is the responsibility of independent control bodies appointed by the European Commission to ensure that organic producers follow standards and control measures equivalent to the EU ones.

The new organic legislation shifts from the principle of equivalence to the principle of conformity and will hence require control bodies to certify the same production rules have been applied.

5. EU subsidies and national support to organic

The CAP, a supporter of organic

The EU recognizes the role of organic farming as an asset for both the land and for consumers. Under the Common Agricultural Policy – CAP for the period 2014-2020, organic farmers can benefit from several support measures.

Overall, organic farmers receive more subsidies under agri-environment and animal welfare subsidies than conventional growers, in particular support for maintenance and conversion to organic farming. In 2016, 56 % of EU organic land was granted this support, receiving on average EUR 139/ha of CAP support and EUR 75/ha national co-financing. They also receive higher support under the Areas with Natural Constraints (ANC, Less Favoured Areas (LFA) under the 2007-2013 CAP), which encourages agriculture in areas with natural handicaps. Further Rural Development measures also support the development of organic production including investments in organic farming practices and aid for marketing and promotion of organic products. Organic farmers receive therefore higher subsidies under Rural Development than their conventional counterparts do.

In addition, organic producers qualify under the requirements for greening payments. Producer organisations of organic fruit and vegetables also

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18 Imported organic wine is included under the category ‘Other’ and represents 0.7 % of imported volume. Its share in value terms is estimated higher but is difficult to assess due to data limitations.
benefit from increased co-financing rates through operational programmes. Overall, organic farmers usually (with a few exceptions) benefit from higher total EU subsidies.

**Figure 22 – Subsidies per AWU to field crop farms by type, average 2012-2016 (thousands)**

![Figure 22](image)

Source: EU-FADN, AWU = annual work unit

**Figure 23 – Subsidies per AWU to milk farms by type, average 2012-2016 (thousands)**

![Figure 23](image)

Source: EU-FADN

Organic farming is further recognised under the legislative proposals for the CAP beyond 2020 and it complies with several of its objectives, including environmental care, contributing to preserving landscapes and biodiversity and responding to societal demands on food health, sustainable food and animal welfare.

**National support to organic boosts supply and demand**

Alongside EU aid, almost all EU countries have also shown their determination and willingness to develop the organic sector. Strategic national or regional plans support organic land use and consumption of organic. For example, Germany launched a program in 2017 to reach a 20 % share of organic area by 2030. Further countries launched similar programs to increase the organic surface19.

On the consumption side, national plans usually target public procurement of organic, for consumption in public schools, kindergartens, hospitals and residential homes. For example, in Copenhagen (Denmark), 90 % of meals served in public entities were organic, just one year following the launch of a program for organic in 2015. Similarly, in Sweden, the objective was set to reach 60 % share of organic in public sector consumption by 2030. At the end of 2018, consumption of a wide range of products already overpassed 50 %, including coffee and tea, leguminous plants and seed, cereals, dairy products, eggs, fish and other seafood). Similar strategies are found in a number of countries, including non-exhaustively Croatia, Finland, France, Germany, Italy, Latvia and Slovenia20.

**6. Conclusions**

The organic sector responds to an increasing desire for sustainable food production, and as such, it fits perfectly under the CAP objectives. At the same time, it provides higher prices to farmers. Over the next years, improved farming practices and increased use of technology and digitalisation have the potential to reduce production costs, with positive impacts on farm income and consumer prices.

The strong growth rates in both production and consumption indicate that the organic market has not yet reached its maturity stage and further growth can still be expected. Organic farming is already responding to further emerging consumer trends such as veganism and demand for locally produced food products, turning these challenges into opportunities.

19 IFOAM and FiBL (2015), Organic action plans, a guide for stakeholders
20 Progress Consulting (2018), Sustainable procurement of food, study for the European Committee of the Regions