

# The EU cereals sector: Main features, challenges and prospects

## SUMMARY

Food and agriculture systems are central to the well-being of humanity. When considering food security, these systems are needed not just to provide safe, healthy food but also livelihoods and incomes to a large number of farmers. These same systems are integral to rural and economic development. Core to the food security objective is the production of cereals across the globe to meet the increasing demands for food, animal feed and biofuels. In the EU, the cereals sector accounted for approximately 11 % of the total output value of agricultural production in 2016, third in line after the vegetable/horticultural and the dairy sectors. It is an important sector for many Member States, particularly the northern ones, where it is well developed. All Member States produce some combination of cereal crops.

The EU cereals sector is facing challenges not only structurally but also financially and climatically. Developments in the policy framework as evidenced by the new common agricultural policy (CAP) proposals as well as advances in scientific and technological spheres, such as plant breeding and digitalisation, point the way to a more efficient sector. Yet, the sectoral challenges are many. The process of CAP reform for the post-2020 period promising a new delivery model and strategic plans is a departure from the known. World agricultural markets face new uncertainties that, on the supply side, include regulatory responses to new plant breeding techniques and responses to the increasing likelihood of extreme climatic events. The cereals sector is one operating in a farming environment trying to combat the loss of plant protection products previously relied upon, and in a world coming to terms with how to make the Paris Agreement a reality. These challenges will all influence the profitability and survivability of the sector.



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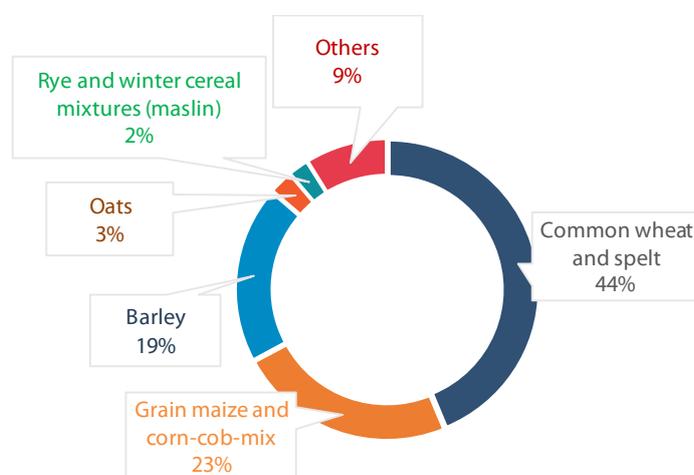
## Facts and figures about the EU cereals sector

### EU cereal production

The EU's cereals sector is the third biggest agricultural sector in terms of output value after the vegetable/horticultural plant sector and the dairy sector. According to recent Eurostat data, the harvested production of cereals (including rice) in the EU was 309.9 million tonnes in 2017. This production level, representing an increase of 3 % on 2016, was achieved in spite of drought conditions in many areas of central and southern Europe and a reduction in the cultivated areas of 1.6 million hectares. All Member States produce cereals. Arable crops account for 45 % (80 million ha) of total utilisable agricultural area (UAA) in 2018. Permanent grassland covers a third (almost 60 million ha), cereals account for 31 % of the total UAA, followed by fodder area (21 million ha) and permanent crops (11.5 million ha), which represent 12 % and 6 % respectively. Fallow land accounts for 4 %.

Figure 1 – Share of main cereals in the EU, 2018

(% of total cereals production)



Source: Eurostat, 2018.

The main producing country is France, which has the most extensive cereals area, accounting for 17 % of the EU total. It is followed by Poland (14 %), Germany and Spain (both 11 %). Common wheat, maize and barley represent the biggest share (79 %). The oilseeds complex uses only 7 % of total UAA, i.e. 12 million ha. When examined in terms of volume produced, France, Germany and Poland together harvested just under 50 % of total EU cereal production in 2017. Figure 1 shows the share (%) of production for the various crops that year. Production levels have shown increasing volumes for wheat and maize since 2015, but

barley volumes have stagnated. European Commission data has shown that soft wheat is the largest EU crop with an average production of 143 million tonnes in the past few years, grown on one-third of the EU's arable area. In terms of quantity and area, wheat is by far the most popular cereal grown in the EU, making up nearly half the total. Soft wheat production has increased by a fifth since 2000, mostly due to yield growth. Of the remaining half of total cereal production, maize and barley each account for a third. Other cereals grown in smaller quantities include triticale, rye, oats and spelt. Maize has become the second most widely grown EU crop, overtaking barley; maize production has increased by 12 % over the past 15 years. By contrast, over the same period barley production has stagnated as a result of a 15 % decline in area, offset by moderate yield growth.

### Cereal crop yields

The EU has the highest wheat yield in the world, both due to favourable natural conditions and to intensive and innovative production systems. Despite a slight decline in feed use, demand for wheat remains strong in 2019, due to growth in food use, which, at 1.3 %, is just below the five-year average, given more stable import costs. In the past five years, food use has outstripped the long-term trend. Global demand is expected to exceed production for the first time in six years.

For maize, the average EU yield for the crop lags behind that of major producers, such as the United States and Canada, where genetically modified (GM) varieties are allowed. However, yields in the

EU-15 are comparable to those in Canada (9.5 t/ha), while yields in the EU-13 are increasing but still lagging behind. For other coarse grains (mainly barley), EU yields are also the highest in the world.

Cereal yield levels in the Member States that joined the EU after 2004 have been coming closer to the levels in the other Member States over time. The gap is expected to further decrease in the coming decade, given the slowdown of yield growth particularly in those Member States that joined before 2004. Overall, however, the average EU wheat yield is expected to increase only very slowly in the next 10 years. There are several reasons for this stagnation in yield, including technology and production systems which have evolved to such an extent that outputs are close to the theoretical obtainable yield. Agricultural policies have shifted towards decoupled payments, which has led to a lower use of fertilisers. Climate change is also playing a role, as are policy choices in respect of the regulation and limited uptake of GM crops and the limitation of certain active ingredients used in plant protection. More specifically, these policy choices include the ban on neonicotinoids and the provisions of the Sustainable Use Directive.

## Cereal use

In the past 5 years, around 14 % of domestic use of cereals has been either for seed or for processing in non-food/non-feed industries, including [bio-energy](#). Today, nearly two-thirds of the EU's cereals are used for animal feed and around one-third for human consumption. Only 3 % are used for biofuels. As the food and feed part of cereal use is projected to increase only marginally, industrial use will become more important as a driver of for increasing cereal production in the EU. Demand for wheat in industrial use shows the highest growth rates (1.9 % annually between 2016-2018 and 2030), followed by maize (1.6 %) and barley (0.8 %). With respect to barley, most of the industrial use and growth is in malt processing and breweries. The shares of the three crops used in other industries differ significantly across the Member States, reflecting different local specialisations.

From a livestock feeding perspective, demand for animal feed (from arable crops, fodder and pasture) should grow in the 2018-2030 period, despite mixed trends in the total EU herd. Total feed uses should reach 275 million tonnes in 2030. There will be a differential growth pattern between medium-high protein feed and low protein feed. Higher demand for feed from locally produced, GM-free and organic crops will be the main driver of the increase. Demand for fodder, particularly silage maize, will also play a role.

Figure 2 – Trends in production, utilisation and stocks from 2009/10 to 2019/20



Source: [FAO, 2019](#).

While cereals are used for feed and food, they also have a role in the production of biofuels, where growth is expected to show only modest increases compared to the past decade. Whereas in the past decade the expansion of biofuels led to more than 120 Million tonnes of additional cereals demand, predominately maize, this growth is expected to be essentially zero over the outlook period. The UN Food and Agriculture Organization's (FAO) [latest](#) 2019 forecast for production, utilisation and trade showed some slight increase in volumes produced combined with an increase in usage resulting in a decline in stocks. Figure 2 shows the trend in production, utilisation and stocks over the past decade.

## Value of production

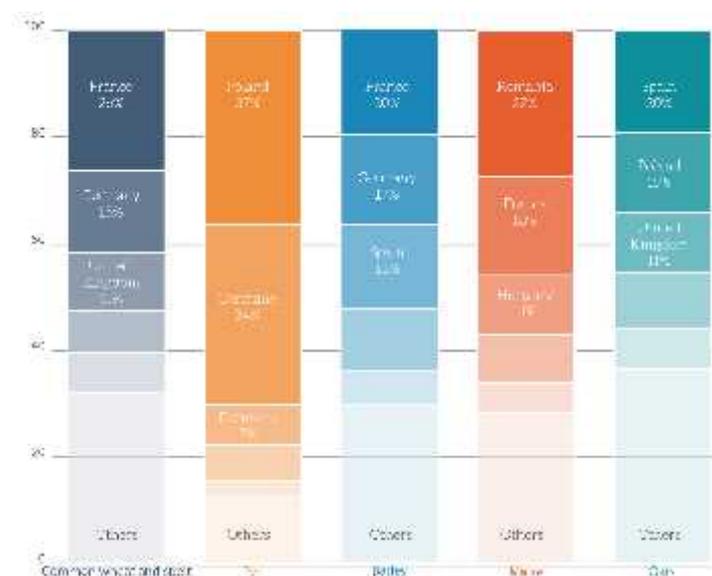
In 2017, the agricultural industry of the EU-28 produced a total output value of €427 billion (up from €400 billion in 2016). Half of this output value came from crop production (led by vegetables and horticultural plants). Another 39.6 % came from animals and animal products (with milk accounting for the greatest share of output value). Agricultural services and secondary activities contributed 8.6 % of total output value.

## Recent and future trends

In their joint [Agricultural Outlook 2018-2027](#), the Organisation for Economic Co-operation and Development (OECD) and the FAO observed that conditions on world agricultural markets are very different from 10 years earlier. Production has shown growth commodities, and in 2017 reached record levels for, among other things, cereals. The levels of stocks across crop types are at all-time highs. On the demand side, growth is weaker. While the impetus to growth has come from rising per capita incomes in China, this growth source is slowing down and the OECD – FAO view is that new sources of global demand are insufficient to maintain overall growth. As a result, prices of agricultural commodities are expected to remain low. Current high stock levels also make a rebound unlikely within the next few years.

As to the use of cereals produced, the foremost source of demand growth will be feed, closely followed by food. Again, China is expected to drive demand. Growth of feed demand is expected to slow globally, despite livestock production intensification. Much of the additional food demand will originate in regions with high population growth such as sub-Saharan Africa, India, the Middle East and North Africa. According to the International Grains Council ([IGC, 24 October 2018](#)), global cereal production in 2018-2019 is expected to fall slightly, to 2 081 million tonnes (down 1 % from the 2017/18 production year), due to adverse weather conditions in a number of key growing regions. Total use is projected to reach an all-time high of 2 138 million tonnes, with expected increases in food, feed and (particularly) industrial use (+3 % year-on-year). Consequently, stocks are expected to fall by around 9 %, signalling good prospects for cereal prices in the short term.

Figure 3 – Cereal production by main producing EU Member State, 2017



Source: [Eurostat, 2018](#).

The European Commission's 2018-2030 [outlook](#) for agriculture examined the cereal sector in some detail. The Commission expressed the view that EU cereal production is expected to continue growing to 325 million tonnes by 2030. This is an increase on the 309.9 million tonnes produced in 2017. This growth is driven by a small increase in feed demand (in particular for maize), moderate export prospects and the growing importance of industrial uses. The scope for greater growth is limited by reduced potential for area expansion and slower yield growth in the EU. Prices are expected to remain stable at close to €170 per tonne by 2030. Demand for feed (from arable crops, fodder and pasture) is expected to grow in the outlook period, despite mixed trends in animal production. Total feed use should

reach 275 million tonnes in 2030. It is anticipated that higher demand for feed from locally produced, GM-free and organic crops will positively stimulate domestic feed production.

Agriculture remains the primary land use in the EU, despite competition from other uses. While a decline in agricultural land use in the EU is expected to continue up to 2030, reaching 176 million ha, the pace of this decline will be slower. In line with this trend, the area of main cereals, permanent grassland and permanent crops is set to further decline in the same period. The amount of land used for other arable crops and oilseeds is stabilising, while land used for fodder is increasing slightly. Positive changes in yields boosting production are compensating for the declining agricultural area used. The EU is self-sufficient in cereals and, as a 2016 EPRS [foresight](#) study found, is a net exporter. Over 50 % of cereal production is fed to livestock and the demand for animal feed has a major influence on the market, both within the EU and internationally.

## Prices

Price trends for cereals have fluctuated over the past 15-20 years. Price reporting [analysis](#) done by the Commission has shown an increase in prices in the period from 2007 to 2012, followed by a fall-off since then due in large part to improved global harvests. In spring 2019, the Commission [short-term outlook](#) for cereals, oilseeds and sugar areas in the EU-28 indicated a decline in 2019-2020 to around 70.7 million ha. On the basis of historical trend yields, the EU cereals harvest would reach 308 million tonnes. EU cereal prices are expected to remain below the peaks of 2014, but above the long-term average, at €168-180/t in 2030. Prices on the commodity markets are only part of the story; farm incomes are the critical aspect that ensure primary producers stay in the business. A Commission sectoral focus [analysis](#) covering the 2014-2024 period shows the income situation for various types of cereal producers.

In the early years of the 2018-2030 [outlook](#) period, prices are expected to be lower than in the longer term, especially for maize and barley, driven by ample global supply, low energy and input costs, and a relatively weak euro. Barley and maize prices are expected to remain closely aligned. Due to good export demand, it is assumed that common wheat prices will remain above coarse grain prices over the outlook period. Currency realignments, particularly an expected re-appreciation of the euro against the US dollar, may have an effect from 2020. Generally, all prices show an upward path from 2022 onwards. This may be related to the increasing energy and input costs assumed in the second half of the outlook period. The relatively low stock-to-use ratios indicate that prices may react to any unexpected production shortfall in the EU or in major supplying regions. As shown in a paper produced for think-tank FARM Europe (2017), [price volatility](#) is now more prevalent in the agri-sector and particularly in the arable sector.

## EU policy framework for the cereals sector

CAP reforms have brought changes to the support mechanisms for all farm commodities and cereals have also moved from a complex system of market measures to a simpler process. Payments are no longer related to volume produced and are fully decoupled. The CAP consists of two 'pillars', the first includes direct payments to farmers and market measures. The second pillar concerns rural development policy and it is aimed at achieving balanced territorial development and sustaining a farming sector that is environmentally sound, as well as promoting competitiveness and innovation. The direct payment system allows producers to switch to different crops or types of production in response to market developments. Since 2008, the different arable crops regimes have been integrated into the [Single Common Market Organisation \(CMO\)](#), and EU policy has been limited to two main areas: intervention and trade measures. Intervention is the buying-in of cereals and rice to public storage and was introduced to protect farmers from low market prices. Today, it is used only in cases of real necessity, providing an authentic safety-net for farmers.

## Trade measures

About 20 % of the EU's wheat crop is exported annually, while large quantities of oilseeds, animal feedstuffs and rice are imported. EU trade in cereals is governed by a set of [regulations](#) on imports and exports. Imports of rice are subject to the issuing of a standardised import licence and, in general, payment of a tariff. For some cereals, tariffs are variable, for others they are fixed. In addition – in accordance with the EU's commitments under the World Trade Organization (WTO) – a number of fixed tariff import quotas are in place at a lower or zero duty. Exports of rice to countries outside the EU are mostly subject to the issuing of an export licence.

## Market measures

The sector is governed by various [regulations](#) that deal with the common organisation of the market as well as public intervention and storage. The Single Common Market Organisation in the first pillar is laid down in [Regulation \(EU\) No 1308/2013](#); the latter establishes rules for managing the market for specific agricultural products. A number of provisions exist which enable the EU to intervene in agricultural markets in times of price crises or other market disruptions. These provisions introduce market intervention mechanisms that involve public buying, storage and disposal of agricultural products by EU authorities through the use of private storage facilities for these products. Relevant for the cereal sector is the fact that public interventions can be made for wheat, barley, maize and rice at a fixed price and during certain periods.

The Commission may take exceptional measures in instances of serious market disturbances arising due to plant or animal diseases, natural disasters or health risks, among others. A crisis reserve can be mobilised in such times to give support to the sector affected. Another possibility for the Commission is that of authorising producer organisations to take temporary measures to manage supply so as to stabilise agricultural markets. Article 222 of [Regulation \(EU\) No 1308/2013](#) is applicable in this instance.

## Income support

[Direct payments](#) form a crucial component of farm incomes across the EU. They are included in [Regulation \(EU\) No 1307/2013](#) and represent the main policy instrument in the 2014-2020 CAP. Making up some 70 % of the total CAP expenditure, direct payments consist of a number of components including a basic payment per hectare to provide basic income support; a 'greening' payment as compensation for following agricultural practices beneficial to the environment; additional support for young farmers to encourage them to enter and remain in the sector; as well as redistributive payments used for re-allocating funds from large to small and medium-sized farms. There are also payments for farmers working in areas with specific natural constraints; simplified schemes for small farmers; and coupled payments related to production granted to protect specific agricultural sectors. These payments represent a stable form of income for farmers based on hectares farmed and decoupled from production. They are discussed in finer detail in a number of EPRS publications including a 2016 [in-depth analysis](#). Cereal farmers are also in receipt of direct payments. An analysis of [Farm Accountancy Data Network \(FADN\) data](#) from 2015 clearly shows the importance of those payments to the cereal farming sector and the contribution it makes to farm income. A closer examination of the data shows that direct payments account for the highest proportion of total receipts in grazing livestock farms (16.9 %), and field crop farms (15.5 %).

## Challenges and perspectives

### Global demand

The global agricultural sector faces onerous times in the years ahead, not least related to the task of producing enough food for a growing population. By 2050, it is estimated that there will be at least 9 billion people on the planet and ensuring food security will be an ongoing issue. A 2017 FAO

[publication](#) examined the trends and challenges facing the sector. In terms of trends, population growth will speed up the dietary transition towards higher consumption of meat, fruits and vegetables relative to that of cereals. This would require a shift in output with more pressure placed on natural resources. The authors of the publication argue that increased use of land, irrigation and agro-chemicals played a major role in the growth of agricultural production during the Green Revolution. They go on to say that the gains achieved came at a cost in terms of negative effects on agriculture's natural resource base, including land degradation, salinisation of irrigated areas, over-extraction of groundwater, build-up of pest resistance and erosion of biodiversity. A 2011 FAO [study](#) draws attention to how agriculture has also damaged the wider environment through deforestation, the emission of greenhouse gases and nitrate pollution of water bodies.

## Environmental sustainability, climate change and crop yield

Another aspect that has an impact on agriculture is that of the competition for natural resources. In their 2017 publication mentioned above, the FAO also comment on the fact that around 14 % of all energy used comes from renewable sources, with almost three-quarters coming from bioenergy. There has been an increase in the consumption of cereals and oilseeds for biofuel production and this has implications for agriculture and the land used for cereal production. The consequence of this increased demand for biofuels may feed into an increased demand for land to produce arable crops. Accordingly, intensification in one area may lead to an expansion in crop areas. This has implications for climate change but the reverse is also the case insofar as climate change is affecting cereal production both in yield terms and in how changes in climate can result in desertification and soil erosion.

Climate change is causing an increase in the frequency of extreme events, whether it is precipitation, temperature, or unusual winds. For agriculture, this usually results in reduced yields and greater variability of these. Cereals, particularly durum wheat and winter barley, are particularly subject to the phenomenon of lodging, which causes a loss of yield, a decline in grain quality and an extension of harvest time. On the other hand, yields are also impacted by drought, especially in areas where shallow soils predominate. The drought in parts of Europe in the summer of 2018 is an example. The effects of climate change will also be seen in cereal production. In its [Fifth Assessment Report in 2014](#), the Intergovernmental Panel on Climate Change (IPCC) stated with high confidence that low-latitude countries would be 'consistently and negatively affected' in terms of crop production, whereas in northern latitudes impacts would be more uncertain. The IPCC concluded that climate change will increase the inter-annual variability of crop yields in many regions.

In a 2016 agricultural markets brief, [Productivity in EU agriculture](#), the Commission noted that in agricultural ecosystems, the main concerns today are soil and water. Some soils in cereal areas in the EU suffer from sub-fertility, with several causes put forward, including shorter rotations, decreased use of organic options, excessive nitrogen inputs (which favour organic carbon mineralisation) and deep ploughing. This latter disrupts microbial life in the soil and thereby the synthesis of nutrients available to plants. In 2008, the Commission [estimated](#) that 45 % of European soils had a very low [organic matter](#) content, with less than 2 % organic carbon in southern European countries, but also in France, the United Kingdom, Germany and Belgium.

Yields have stagnated over the past 15 years with the reconversion of good cereal lands into urbanised areas. At the same time, the reversion of less optimal grasslands for cereals has been put forward as a reason. The depletion of soil organic carbon has also been suggested as a reason for stagnant or falling yields. The use of herbicides for weed control and the associated attendant risk of run-off is also a cause for concern. As for genetic improvement of crops to meet societal expectations, this has been an ongoing trend throughout the centuries. Today, preparing for a world dealing with climate change requires new crop adaptations. The plant breeder of today focuses on selecting characteristics such as hardiness, resistance to diseases, as well as greater nitrogen utilisation efficiency, weed control and tolerance to drought. A 2018 study commissioned by the Parliament's AGRI committee, describes the [new breeding techniques](#) (NBTs) that are part of the

effort to provide producers with crops that are more resistant and more tolerant to adverse climatic and/or disease stressors.

## Increasing competition from outside the EU

The past decade has seen the rise of the Black Sea basin in the global grain trade. A number of factors explain this change, including the economic recovery of Ukraine and its return to the previous role of Europe's 'bread basket', and the Russian boom in agriculture, such as in the [wheat market](#), due to its natural assets and as a response to the US and EU economic sanctions on its energy sector in 2014. Tax incentives, modern technologies and use of fertilisers have been mobilised to achieve this goal.

## Lower income of farmers

Several factors are responsible for the [decline in income](#) experienced by EU cereal producers in recent years. First, there is the influence of global market parameters. In the case of soft wheat, for example, the world supply has been slightly above demand since 2015, which leads to low prices in the face of production costs. The low yields in the EU for 2017-2018 were also a factor which affected production in Russia, Australia and the US. Variability of yields and prices are an ever-present challenge for cereal production, and prices can show a great deal of movement in any given short or medium-term period, as evidenced by the Commission dashboard referring to prices for common wheat in the French town of [Rouen](#).

At the same time, as shown in a Parliament [in-depth analysis](#) from 2019, the cost of growing cereals has increased, mainly due to plant protection product costs and higher certification costs along with other fixed and variable costs. Income falls are also attributable in part to a progressive erosion of the value of direct payments in recent years, made more palpable by the choice of some Member States to transfer large amounts of aid from the first towards the second CAP pillar.

## Volatility of the market

Where once the [market](#) could be described as relatively predictable, increased demand, higher oil and freight costs and financial markets have increased its [volatility](#). Price variations are now characterised by their suddenness and brutality. The range of the variations experienced can also vary greatly. Given the challenges faced by the sector, the question is being asked whether there is space for insurance tools to assist in managing volatility and in particular crisis management. This was evidenced in the dairy sector in 2016. Risk [management](#) is a core issue and price volatility is only one facet; other aspects include risk related to production, climate and income. How these three types of risk should be addressed is dependent on the frequency of the risk and its impact on farm income.

Risks can be classified as normal, marketable and catastrophic/systemic. Normal risks include small changes (in prices or yields caused by a weather event) that can be managed on-farm.

Marketable risks occur less frequently and lead to higher losses that are more difficult to manage and require the market to intervene. An example of a marketable risk would be a large price decrease that can lead to a significant decrease in farm income.

Finally, catastrophic or systemic risks occur infrequently but cause large damage to many farmers. Leading to very high costs, private companies are not best placed to cope; accordingly, public aid is provided to cover the losses of agricultural producers. Examples of catastrophic risks are large-scale droughts or floods that hit an entire country or region, or a widespread contagious disease. The issue of price volatility has been dealt with detail in a 2016 EPRS publication on [income stabilisation](#) tools.

## Plant protection products

Like any crop, cereals require protection against pests. However, farmers are now facing a scarcity of approved substances as well as new pressures due to climate change, and are therefore faced with the need to find effective alternatives quickly. With regard to insecticides used to protect crops, the current challenge for farmers is the [neonicotinoid](#) class, which has been widely used since the discovery in 1985 of the insecticide Imidacloprid. Neonicotinoids have been used extensively as seed coatings. However, they have low biodegradability and travel through the soil food chains, building up concentrations there, and are mentioned as a cause of death in pollinating insects and other non-target insects and animals. The European Food Safety Authority (EFSA) confirmed this danger in its [conclusions](#) in February 2018 for three types of bees evaluated. On 27 April 2018, the majority of EU Member States voted to ban three neonicotinoid insecticides (Clothianidin, Imidacloprid and Thiamethoxamur) from 2019 for all field crops in the EU, with the only exception being greenhouse use. The cost of banning neonicotinoids for oilseed rape cultivation in the EU has recently been [estimated](#) at €900 million per year. On wheat and barley, Imidacloprid makes it possible to avoid yield losses of the order of 20-30 % caused by dwarfing jaundice. Regarding the herbicides used for grain farming, the main subject is the debate on [glyphosate](#). While the license to exploit the molecule (discovered in the 1950s) came to an end in December 2017, Member States voted in November of the same year for a five-year extension. In October 2017, the European Parliament voted – in a non-binding manner – to phase out glyphosate by 2022.

## Current CAP reform

In the context of a decline in the profitability of the cereals sector, the proposals for the post-2020 CAP are giving pause for thought. With a proposed reduction in the CAP budget, the reform proposals could exacerbate the challenges already faced by the cereals sector. In its [impact](#) assessment related to the proposal for CAP reform, the Commission estimates that for the cereals and oilseed crops sector, there would be a 6 % drop in income in the case of a 10 % reduction in income support. On the other hand, according to the Commission's own admission in this impact assessment, the reform proposals presented on 1 June would generate an additional drop of between 8 % and 10 % of agricultural income depending on the options chosen by the Member States. This has potential to lead to the exit of farmers, resulting in the abandonment of territories especially in intermediate zones, as well as to the expansion of farms. It would slow down investment capacity and generational renewal. The proposed reforms have been the subject of a number of EPRS briefings, such as the one on [CAP strategic plans](#). These briefings have examined the three proposals in detail and endeavoured to set out clearly what the reforms will mean not just for farmers but also for administrators and the wider agri-food sector. The effects of changes not just at CAP strategic plan level but also at the [financing, management and monitoring](#) have been considered.

## Civil Dialogue Group

To advance the cereal sector in particular and more generally to aid the development of the entire arable sector, [civil dialogues](#) have been initiated. In this context, they will examine the impact of the reformed CAP on the cereals sector, which will inform further debate on administrative simplification and the integration of the internal market. The Civil Dialogue Group on Arable Crops was established to ensure a dynamic arable crops market and a good functioning of the single market, which will benefit all actors in the EU food and feed chain, including the consumer. The provision of reliable data is essential for national authorities, as is keeping a constant flow of innovation to the farm in order to contribute to the EU 2020 strategy for growth and employment, and to develop the bioeconomy. One way of integrating environment- and productivity-friendly approaches into the arable crops sector is by encouraging green growth and improving the indicators on the efficient use of resources. Member States will also need to develop guidelines based on scientific knowledge and on respect for consumers' and economic operators' freedom of

choice when advising policy-makers. The civil dialogue groups' general tasks pursuant to the Commission decision on establishing them will be: a) to maintain a regular dialogue on all matters relating to the common agricultural policy, including its implementation and new measures the Commission may be called on to take; b) to exchange relevant experience and good practice; c) to advise the Commission on relevant policy; d) to deliver relevant opinions on request of the Directorate-General for Agriculture and Rural Development (DG AGRI) or on their own initiative; and e) to monitor relevant policy developments.

## Digital agriculture

As illustrated in a 2019 study requested by the Parliament's AGRI committee, the [digitalisation](#) of agriculture can be used to gain competitiveness and sustainability. With an increase in yields accompanied by a reduction in their operating costs, EU grain growers can draw on the [potential](#) of the digitisation of agriculture, as shown in another study requested for the AGRI committee in 2018. This is a way to optimise the use of treatments on crops. Farmers can use digital technologies and geolocation to better characterise the soils of their farms and are better placed to take into account differences between and within fields. In this manner they can bring the right mix of inputs – water, fertilisers, and phyto-sanitary products – to the right place and at the right time.

## European Parliament

Parliament has previously brought forward resolutions in relation to the arable sector, one such being on [plant breeding](#) from 2014. In its role as co-legislator, Parliament has debated the future disposition of the sector in the AGRI committee and the Committee on Environment, Public Health and Food Safety (ENVI), with both investigating new technologies that will have a bearing not just on agriculture generally but specifically on developments such as new breeding techniques and genetic modifications. Parliament has also put forward motions for resolutions to deal with income volatility in the agricultural sector, one such being from 2016 and seeking to [aid the cereal sector](#).

The AGRI committee has examined these advances in [plant breeding](#) techniques. In a joint hearing (May 2018) held with ENVI, the findings presented were clear that new crop varieties were required to meet challenges such as climate change and the spread of plant diseases. It was also noted that an increasing number of plant breeding companies are already actively using NBTs. There is still some uncertainty particularly in the aftermath of the European Court of Justice [ruling](#) of 2018 in respect of genetically modified organisms and the [plant breeding](#) technology such as gene editing.

Parliament has also instigated the undertaking of a number of studies, not least on [competitiveness](#) (2014), where issues affecting all sectors were examined. Within Parliament, The Panel for the Future of Science and Technology (STOA) had a synthesis [report](#) prepared on how to feed 10 billion people – options for sustainable food and agriculture in the EU (2014).

During the previous parliamentary mandate the subject of glyphosate was discussed in the ENVI committee and also before the Petitions Committee (PETI) as part of a [European Citizens Initiative](#).

In March 2017, the AGRI committee convened a hearing on 'Sustainable Plant Protection – Opportunities and Challenges for the Agricultural Sector'. This was done to closely examine the issues surrounding the need for plant protection products, their impact on biodiversity, plant protection in organic production and the existing EU regulatory system.

## Advisory committees

In the response to the CAP proposals, the European Committee of the Regions (CoR) called for the introduction of [voluntary crisis management tools](#) based on the management of production volumes while also suggesting restoring the minimum requirement of 7 % non-productive ecological focus areas per farm. It supported the principle of eco-schemes and proposed that a minimum of 30 % of the national payments envelope should be devoted to them. The CoR also

called on the Commission to establish a fully operational monitoring system for the regular collection of updated measured data on pesticide residue in the environment (especially in soil and water), possibly based on the successful experience with the land use/cover area frame statistical survey (LUCAS) soil monitoring system. In its response to the Commission's June 2018 proposals for the post-2020 CAP, the European Economic and Social Committee (EESC) demanded that the current CMO be improved and strengthened so as to provide an effective safety net and market support, particularly in crisis or challenging times, such as the Russian ban or Brexit, in order to protect primary producers, processors, consumers, markets and jobs. The EESC believes that the Commission's legislative proposals must be much stronger on 'markets' and 'trade', and that they should contain meaningful and tangible measures. In a 2016 [opinion](#), the EESC stated that with regard to more sustainable food systems, current food systems faced many challenges not least the loss of arable land due to soil degradation.

## Stakeholders

The sector has been subject to commentary from stakeholders, not least COPA-COGECA, a farming – cooperative representative association in Europe, who have emphasised how one hectare of cereals fixes 5-6 tonnes of CO<sub>2</sub> per year. This reinforces the benefits of arable land maintenance in the climate change context. The greater impact lies in the provision of plant protein. The European production of plant protein accounts for an annual average 45 million tonnes of harvested crude protein, mainly derived from EU cereals, oilseeds and protein crops and used for food and feed. Cereals provide the largest share of EU plant protein, accounting for 37 million tonnes or 84 % of the total, while oilseeds including soybeans supply 6 million tonnes (14 %), and protein crops 1 million tonnes (2 %). In a [position paper](#) from January 2019, COPA-COGECA sets out the challenges faced in securing plant protein from cereals. These include competitiveness, effectiveness, protein quality, protein pricing, protein self-sufficiency of livestock farms and consistency in public policy.

IFOAM, the European umbrella organisation for organic food and farming noted that there are currently 12.8 million hectares given over to [organic](#) production in Europe. The contribution made by organic cereals is 43.3 % of that area or in excess of 5.5 million hectares. In addressing the debate on new breeding techniques, an IFOAM [position paper](#) sets out the arguments against these techniques. Addressing the concept of crop rotation, the authors of the paper expressed the view that there were multiple benefits to it and that it should form part of the CAP reform process.

Food Drink Europe, the European food and drink industry organisation, addressed the issue of sustainability in its [publication](#) of 2012 dealing with environmental sustainability vision towards 2030. It stated that the amount of arable land worldwide per capita halved from 1960 to 2007 from 0.39 hectares to 0.21 hectares. This was set against a backdrop where demand for land was increasing due to biofuel, paper and timber. In sourcing sustainably, the publication points out the importance of responsible cultivation practices that preserve soil fertility and minimise soil erosion, loss of arable land and biodiversity.

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