EU AGRICULTURAL OUTLOOK

2023 - 2035

Agriculture
and Rural
Development

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While all efforts are made to provide sound market and income projections, uncertainties remain.

The contents of this publication do not necessarily reflect the position or opinion of the European Commission.

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NOTE TO THE READER

This report presents **the medium-term outlook for EU agricultural markets and income** until 2035 and alternative scenarios analysing both climate change and the adoption of certain soil management practices.

It is based on a set of **macroeconomic assumptions** deemed most plausible at the time of the analysis. Short-term inflation and GDP projections are based on the latest European Central Bank forecast in the short term, while in the medium term they are based on S&P Global and the European Commission's September forecast. In addition, also oil prices and the USD/EUR exchange rate. Population figures were adjusted in a short-term outlook based on the European Commission's forecast and follow growth rates as presented in the latest OECD-FAO Outlook. The analyses of agricultural markets rely on: (i) data that were available up to the end of September 2023 for agricultural production and trade; and (ii) an agro-economic model used by the European Commission. Macroeconomic forecasts and crop-yield expectations are by nature uncertain. To reflect this, an **uncertainty analysis** around the baseline was carried out.

The **CAP strategic plans** of EU Member States are taken into account in both a direct, quantitative way (decoupled and coupled payments) and an indirect, qualitative way (other policy measures). For other policy actions and possible targets stemming from them, only those in place by the end of September 2023 are taken into account. In a similar vein, only **free-trade agreements** that had been ratified up to end of September 2023 are considered, which includes the duration of a temporary liberalisation of a trade with Ukraine.

Uncertainty about macroeconomic developments and geopolitical and trade relations in the next 12 years remains high. It is therefore important to highlight that this medium-term outlook presents a **baseline for future analytical and scenario work** by the Commission, and that this baseline makes it possible to test different developments. This baseline may also provide a reference for assessing the impacts of different legislative proposals on agricultural markets and income. In this baseline, and as the nature of econometric modelling suggests, market developments are assumed to move forward relatively smoothly in the medium term. However, they are likely to be much more volatile each year depending in part on unexpected external shocks. Therefore, this **outlook report should not be misinterpreted as a forecast**. More precisely, these projections correspond to the average trends that agricultural markets are expected to follow if current policies and the macroeconomic environment remain unchanged over the projected period. To provide a more reliable comparison of trends, the report uses **average values over a 3-year period**. For arable crops, milk, dairy products and meats this means that when referring to 2023 (2013), the mean values for 2021-2023 (2011-2013) are used. For specialised crops, the Olympic averages for 2018-2022 (2008-2012) are used, except for a shorter period for peaches and nectarines.

An external **review of the baseline and the scenarios** was conducted at a hybrid outlook workshop held on 24 October 2023 by the Directorate-General for Agriculture and Rural Development (DG AGRI), which was organised by Franziska Schweiger, and Lucia Balog. At the workshop, valuable input was collected from various actors in the EU food value chain.

This Commission report is **a joint effort between DG AGRI and the Joint Research Centre (JRC)**, with DG AGRI responsible for the content. In DG AGRI, the report and underlying baseline were prepared by Paolo Bolsi, Vincent Cordonnier, Mariama Djiba, Mihaly Himics, Beate Kloiber, Adam Kowalski, Dangiris Nekrasius, Eris Papagiannopoulos, Andrea Porcella Čapkovičová, Carlo Rega, Jean-Marc Trarieux, Benjamin Van Doorslaer and Mauro Vigani. DG AGRI's outlook groups and market units helped to prepare the baseline.

The JRC team that contributed to this publication included, for the outlook and climate change scenario: Christian Elleby, Beatrice Farkas, Ignacio Pérez Domínguez, Simone Pieralli, and for scenarios on soil management practices: Maria Bielza, Franz Weiss, Jordan Hristov, Peter Witzke, Monika Kesting, Renate Koeble, Ana Luisa Barbosa, and Thomas Fellmann. Marcel Adenauer and Hubertus Gay from the OECD, and Sergio René Araujo Enciso from the FAO also provided valuable technical support and expertise.

The text on apples, peaches, nectarines, and tomatoes for selected Member States was prepared by the AGMEMOD consortium, represented by: Ana Gonzalez-Martinez, Roel Jongeneel, Myrna van Leeuwen, David Verhoog and Tomas Garcia Azcarate (an external expert).

We are grateful to the participants in the October 2023 outlook workshop and to many other colleagues for their feedback in the preparation of the report.

CONTENT

EXECUTIVE SUMMARY

This Medium-term Outlook report has been drawn up considering the main drivers expected to affect the future of EU agriculture until 2035. These drivers include climate change, consumer demand, and the evolving farming sector structure. The report considers how these drivers are likely to affect the EU agriculture, under the most plausible future macroeconomic environment, and assuming that the current policy framework remains unchanged.

Agricultural productivity growth is challenged by pressures from climate change and impacts on key natural resources like water and soil. This would lower yield growth and could lead to a shift of agroclimatic zones towards North, affecting crop cultivation patterns as well. On the other hand, increasing farm sizes have favoured productivity growth. This trend is likely to contribute although at a slower pace than in the recent years.

According to the projected trends, the EU will continue to be a net exporter, and thereby to contribute to global food security. This will be reinforced by the convergence of productivity levels in Member States that joined the EU after 2004 compared to the others, although a gap is due to persist.

Consumer concerns about impacts of their diets are expected to contribute to lower meat consumption (especially of beef and pigmeat). At the same time, the consumption of dairy products is due to stabilise, in line with changing habits (e.g. lower consumption of drinking milk) and expanding novel uses of dairy products (e.g. increasing use of dairy ingredients). On the other hand, consumption of some plant proteins could grow (e.g. pulses) while others (e.g. vegetable oils) could record some decline as consumers are opting for alternatives.

The projected trends also confirm that the CAP remains crucial in supporting farmers to transit to more sustainable agricultural production systems, to become more resilient and more competitive, and to simultaneously fulfil their functions as food producers and stewards of natural resources and the land. By doing so, farmers contribute to the food security of both the EU and world more broadly. In addition to the CAP, the rule-based trade system and innovation (including digitalisation, automation, animal breeding and plant breeding) are other factors that could successfully help EU farmers to adapt to new market conditions, and cope with evolving societal and consumer demands.

While the policy environment is considered stable in this Outlook, macroeconomic conditions are a source of uncertainty. EU countries also face policy challenges linked to funding public expenditure due to interest rate increases by central banks to contain the inflation surge of 2021 and 2022. In this context, the baseline scenario assumes an average annual global economic growth rate of 2.5% by 2035; for the EU will return to 2% average annual inflation after 2024; an exchange rate of USD 1.09 to the euro until 2025 and of USD 1.12 towards 2035; Brent oil prices of USD 102 per barrel in 2035; and a slower world population growth of 0.8% per year.

The amount of **EU agricultural and forest land** is forecast to remain unchanged between now and 2035, but there will be relative changes in the share of different types of land. Climate and weather-related challenges lead to more volatile competitiveness of the EU on global markets, and do not incentivise any cultivation of new arable land. Within arable crops, land-use shifts from cereals to soya beans and pulses are expected. This is due to expectations of lower demand for cereals for feed, and policy incentives to support an increase of plant proteins. The amount of agricultural land given over to permanent crops is likely to remain unchanged with new and more efficient plantations replacing older ones. Permanent grassland and fodder areas may decline only marginally due to an expected extensification of animal production. More land is set to be left fallow given stronger regulatory requirements.

Yields of **cereals and oilseeds** are forecast to remain stable despite climate change and constraints on the availability and affordability of some agricultural inputs (e.g. plant protection products), thanks to positive developments applicable within a short time, such as precision farming, more crop rotation and improved soil health. This could also be further supported by technological improvements, impacts of which could be rather seen in a longer term. Cereal production is expected to continue to be driven by wheat and maize. Production of pulses and soya beans will also increase in the EU, supported by EU policies favouring protein crops, crop rotation and increasing needs for plant proteins. This is likely to lead to an overall reduction in imports of oilseeds and protein crops.

The demand for **animal feed** in the EU is forecast to decline over the coming years due to reductions in the EU's production of pigmeat, beef and also a decline in the dairy herd. A drop in crop-based feed is also expected due to a shift towards more grass-based (extensive) production systems, and towards more efficient feed conversion ratios (which are likely to be improved via genetics and better-targeted feeding systems).

Levels of EU **oilseed** crushing are forecast to remain stable, but the use of vegetable oils could decline due to a reduction in demand for biofuels, with an expected further shift away from palm oil, at the benefit of rapeseed oil.

Sugar beet production is due to slowly decline, leading to lower sugar production in the EU. EU sugar consumption is also expected to decline between now and 2035 because of consumers shifting to diets with a lower sugar intake, especially by reducing the high sugar content of food products. Although the EU will continue to be a net importer of sugar, its reliance on imports is likely decline.

Demand for **biofuels** in the EU is also expected to decrease as the decarbonisation of road transport, the use of crop-based feedstock to produce biofuels is limited by a production utilisation cap set in 2020, and the use of advanced biofuels is expected to grow.

Despite significant challenges, the **EU dairy sector** showed remarkable performance in recent years. EU milk productivity should continue to increase in the coming years, albeit at a slower pace than in the past, with high quality and sustainability standards generating more added value in the sector. EU and national environmental policies already in place are due to lead to a decrease in the size of the dairy herd, so EU milk production could slightly decline by 2035. Despite this, production of some dairy products is still expected to grow (e.g. cheese, whey, skimmed milk powder) albeit at a slower pace than in the past. Butter production is likely to remain stable. These developments are supported both by positive domestic and global demand. On the contrary, there will be a further decline in the production of drinking milk and whole milk powder. EU per capita consumption of dairy products is forecast to remain stable, but lifestyle changes and the health requirements could increase the demand for fortified, functional dairy products and nutrition (e.g. elderly, sportsmen/women, pregnant women). The product portfolio of EU dairy exports will also need to adapt to changing demand in trading partners, favouring dairy products of greater added value. The EU raw milk prices are expected to be well above pre-2022 levels by 2035.

EU **beef** consumption remains challenged by high price, consumer health and sustainability concerns. This, combined with low profitability, stricter environmental and climate regulatory framework, is expected to lead to further production decline by 2035. Coupled income support and eco-schemes under the new CAP, together with a relatively good price outlook, will help slowing down this trend but will not reverse it. The average slaughter weight will continue its slightly upward trend thanks to better feed and herd management, and a larger share of beef-type animals in the productive herd. Declining EU production may contribute to keep beef prices at a higher level than in the past. Although EU beef meat exports are due to grow slowly between now and 2035, EU exports of live bovine animals are expected to decline gradually due to increased competition and existing concerns about long-distance transport.

Consumption of **pigmeat** is challenged by sustainability and health concerns as well and is therefore projected to decrease between now and 2035. Intensive pigmeat production systems are likely to face further societal criticism. African Swine Fever is assumed to remain in the EU, with no major or uncontrolled outbreaks forecast. EU pigmeat exports - which increased in the previous decade - are expected to decline between now and 2035 due to a recovery in pigmeat production in Asian countries. Imports are likely to remain low and stable. Pigmeat prices could stay higher than past levels due to increased costs and reduced EU supply.

Among meats, **poultry** could continue benefitting from a relatively healthier image, absence of religious constraints, and a cheaper price. Together with further export opportunities, this would push poultry production upward between now and 2035, albeit at a lower yearly growth rate than seen in the past decade. Due to environmental laws, expansion may only be possible in certain EU regions. In the future, the incidence of *Avian influenza* is expected to extend over the whole year instead of being a seasonal event. It will challenge the sector, especially free-range production systems. EU poultry exports are due to regain momentum, despite the continuing price gap with world prices.

A decline in the EU production of **sheep and goat meat** is expected to continue, following a decline in sheep and goat herds. These declines are expected despite coupled income support and favourable prices, although these prices are likely to increase more slowly that was the case in the past decade. EU per capita consumption should remain relatively stable due to sustained consumption patterns related to migration and cultural traditions.

On **specialised (permanent) crops**, the area of land given over to **olives for oil** is forecast to remain stable, but climate change will lead volatility in yields and oil quality. These negative impacts could be reduced by both the introduction of more resistant varieties and the changes in production systems (towards more intensive ones), together with research and innovation, could reduce the negative impacts. Diverging consumption trends should persist across the EU, with decreasing consumption patterns in the main producing countries due to higher prices, while consumption is expected to keep increasing in other EU countries due to the growing popularity of the Mediterranean diet, and health awareness campaigns promoting the benefits of olive oil over other fats. As growth in EU consumption of olive oil remain is set to remain relatively stable, the share of EU production accounted for by exports on will grow.

Wine consumption is projected to continue to decline by 2035. Moreover, reduced availability of plant protection products, further irrigation restrictions in some EU countries and volatility due to climate change could reduce both the area and yields of vineyards, leading to large fluctuation and on average lower production volumes. Although uncertainties remain, EU wine exports could grow over the coming years, albeit at a much lower rate than in the recent years, while the level of wine imports to the EU remains low and is expected to decline further.

The production of **apples, peaches, nectarines, and tomatoes** will also face challenges related to extreme weather events, increasing energy costs, limitations on the use of pesticides, and pest outbreaks. Because of these factors, the EU apple sector could lose competitiveness and reduce its harvested area. At the same time, EU per capita consumption of apples could increase due to consumer preferences for eating more fruit. EU production of peaches and nectarines is projected to decline between now and 2035, as consumption is also declining due to a higher competition of other fruit. Energy costs are an additional limiting factor for the development of fresh tomato production in some EU countries such as the Netherlands. However, new investments in Spain and Portugal could lead to higher tomato yields and greater areas under processed tomato cultivation. The trade performance of both streams (for fresh consumption and processing) could remain as in the present, with the EU being a strong net importer of fresh tomatoes and a net exporter of processed ones, especially of high value products like peeled and tomato sauces. At the same time, in fresh consumption small-sized varieties continue to be demanded more, reducing overall consumption volumes.

An upward trend of the overall agricultural **production value** is projected between now and 2035. After coming down from the currently high levels, prices of input could continue growing at a slower pace, in line with past trends. This would be mitigated by an adoption of cost-efficient practices and further productivity gains, although lower than observed in the past. Based on the difference between production value and changes in costs, income margins are due to grow in nominal terms. In real terms, their evolution will depend on inflation developments, and the level of competitiveness of the EU compared to global markets which could further impact evolution of prices.

Despite limitations, some further productivity gains could be achieved through mechanization and automation. These, along with the low attractiveness of the sector, the variability of profits is all expected to cause agricultural labour to keep declining.

In addition to the Agricultural Outlook, this report also contains **scenario analyses** to investigate two different "*what if*" future situations: one scenario on the impact of climate change on world agricultural yields, trade, and commodity prices; and another scenario on the environmental and economic impacts of a wider adoption of soil management practices promoting carbon sequestration and reducing soil greenhouse gas (GHG) emissions, namely winter cover crops, tillage management and peatland restoration.

Results from the first scenario analysis reveal that climate change can favour an expansion of harvested area for maize, rice, soya beans and wheat at the expense of others (assuming the current agricultural area would remain stable, with no further area gains due to global warming).

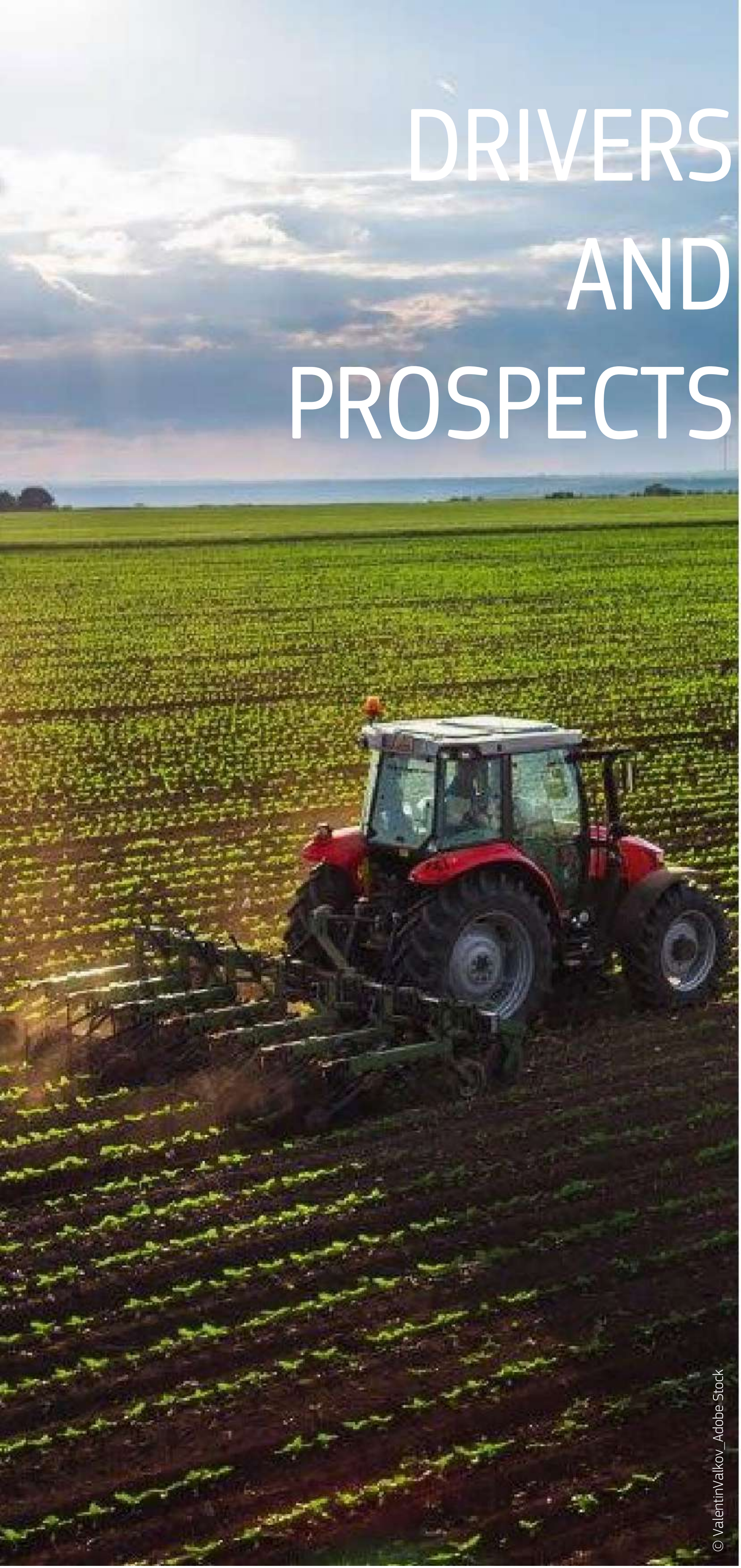
However, yields are to be impacted more negatively and so the area increase would not be sufficient to counterbalance the drop in production, leading to higher prices of these commodities. Due to lower and more expensive feed availability, pigmeat and poultry production would decline. On the other hand, grazing livestock could benefit.

Results from the second scenario analysis show that peatland restoration can effectively contribute to decreasing GHG emissions, N surpluses and NH_3 emissions, while soil management practices can help to reduce nutrients leaching to water, soil erosion, and emissions of GHGs and NH_3. However, the long-term cost-efficiency of soil management practices with respect to GHG mitigation is not guaranteed as the carbon-sink capacity of soils is finite. The scenario analysis showed moderate negative effects on farm income that are mainly due to higher costs associated with these practices.

ABBREVIATIONS

ASF	African swine fever
CAP	common agricultural policy
C	carbon
CH_4	methane
CO_2	carbon dioxide
CV	coefficient of variation
DG	Directorate General
EC	European Commission
EU	European Union (of 27 Member States)
EUR	euro
FAO	Food and Agriculture Organization of the United Nations
FDP	fresh dairy products
FTA	free trade agreement
GDP	gross domestic product
GHG	greenhouse gas
GM	genetically modified
HPAI	Highly pathogenic avian influenza
IPCC	Intergovernmental Panel on Climate Change
JRC	Joint Research Centre
MTO	medium-term outlook
N	nitrogen
N_2O	nitrous oxide
NH_3	ammonia
OECD	Organisation for Economic Cooperation and Development
SAPM	Survey on Agricultural Production Methods
SMP	skimmed milk powder
RCP	representative concentration pathway
UAA	utilised agricultural area
UK	United Kingdom
US	United States of America
USD	US dollar
WMP	whole milk powder
bbl	barrel
c.w.e.	carcass weight equivalent
CO_2 eq.	carbon dioxide equivalent
eq.	equivalent
g	gram
ha	hectare
hl	hectolitre
kg	kilograms
km^2	square kilometre
l	litre
pp	percentage point
t	tonne
t.o.e.	tonne oil equivalent
w.s.e.	white sugar equivalent

DRIVERS AND PROSPECTS



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This chapter gathers elements which drive the EU agricultural outlook, such as climate change; consumption trends; evolving farming structures; the past and current trade performance of EU agricultural products; value creation along the EU food chain; the latest reform of the common agricultural policy; and the macroeconomic environment.

In addition, it presents the main future trends in EU agriculture, by focusing on future supply, changing EU consumer preferences, and EU trade performance, with a link to food security. It also shows key results of the analysis carried out to assess possible developments caused by uncertain conditions.

CLIMATE CHANGE AND ENVIRONMENT

Climate change is leading to higher temperatures and extreme weather events

The EU agricultural sector is facing unprecedented environmental challenges, due to increasing pressures from climate change and competition for key natural resources like water and soil. Agriculture is both driving climate change and being highly impacted by it. According to the IPCC[1], in 2011–2020 global temperatures were on average 1.09 °C higher than in 1850-1900.

Human-caused climate change is increasing the frequency and severity of extreme warm weathers, heavy precipitation, and droughts. This is already affecting water security, slowing the growth in agricultural productivity seen over the past 50 years at global level, and causing knock-on damage to food security as a result. A shift in agro-climatic zones towards north is also being observed and this will affect crop cultivation patterns.

In the four main IPCC scenarios, median temperature increases in the near term (2021-2040) compared with 1986-2005 range from 1.2 to 1.7 °C, with the greatest increases projected in western and central EU. Under all scenarios, extreme weather events are projected to become more frequent. In the EU, deteriorating trends have been recorded for five key climate indicators affecting agroecosystems, such as mean annual temperature, the number of days with maximum temperature above 25 °C, the length of growing season, effective rainfall and the frequency of extreme droughts[2].

Large areas in the EU are set to be affected by water scarcity

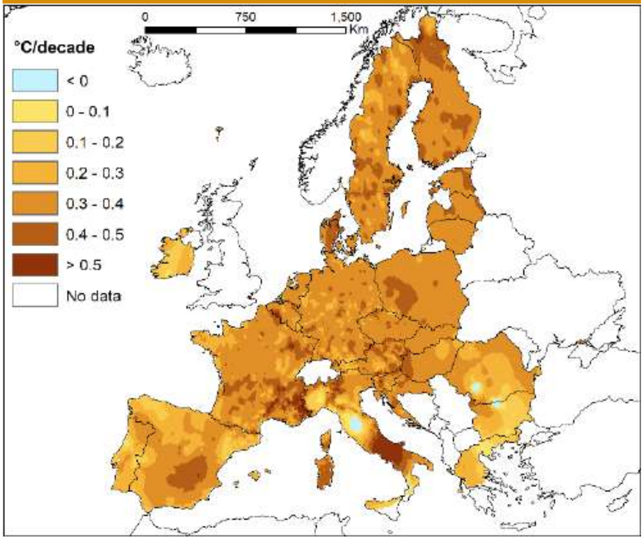
Due to the increasing frequency of extreme weather events, water availability has been challenged, resulting in increasing competition for the use of water. For example, areas affected by water scarcity increased between 2010 and 2019[3] and in 2019, 29% of the EU's territory (excluding Italy) was affected by water scarcity during at least one season in 2019[4].

Given forecasts for more frequent droughts and reductions in effective rainfall, water scarcity in the EU is not likely to reduce by 2030. Consequently, increased competition for water as well as more frequent restrictions on water use can be expected.

A stable but highly variable EU nitrogen surplus is expected

For soil, the potential impact of nutrient losses to the environment is measured by the gross nitrogen balance (the difference between nitrogen input and output). A negative balance may lead to degradation in soil fertility and erosion, while nutrient excess may cause eutrophication and the pollution of both surface water and groundwater. On average, the EU balance per ha of UAA remained relatively stable in 2010-2015, with surplus values ranging from 46.7 to 44.4 kg N/ha. However, geographical variations across EU countries are significant, with values greater than 50 kg N/ha repeatedly recorded in the Netherlands, Belgium, Germany, Denmark, Italy, Czechia, Croatia and Cyprus.

MAP 1.1 Trends in annual temperature in 1960-2021(°C/decade)



Source: DG Agriculture and Rural Development, based on EEA (2023a).

A small decrease of in emissions of GHG and ammonia forecast

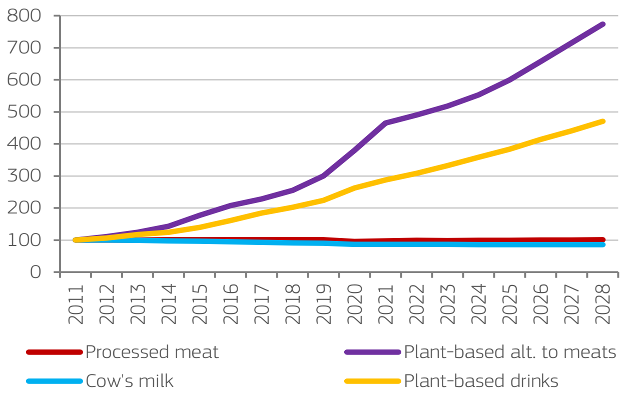
GHG emissions from EU agriculture slightly declined in 2013-2023, from 401.6 to 385.6 million t CO_2 eq. (-3.9%) [5]. This was mainly driven by lower emissions from animal production (down by -4.7% over the period), while the decrease in the plant-based sectors was 1.9%. Ammonia emissions from agriculture remained relatively stable in 2010-2020, with a slight decline from 3.3 to 3.23 million t NH_3 (-2.04%).[6]

[1] IPCC (2023).
[2] Maes et al. (2020).
[3] According to the Water Exploitation Index+ (the percentage of available renewable freshwater resources consumed at river sub-basin level).
[4] EEA (2023b) .

[5] Figures are taken from the AGLINK model, which does not consider permanent crops and horticulture, so reported values may not be directly comparable with other official sources. Nevertheless, the identified trends can be considered as representative of the whole EU agricultural sector.
[6] European Commission (2023).

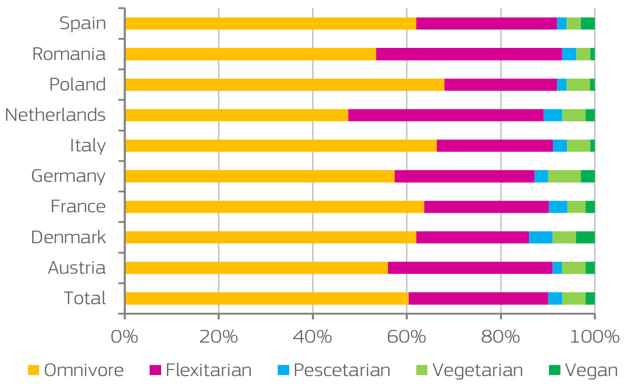
CONSUMPTION TRENDS AND HABITS

GRAPH 1.1 Volume growth of animal products versus plant-based products (2011=100)



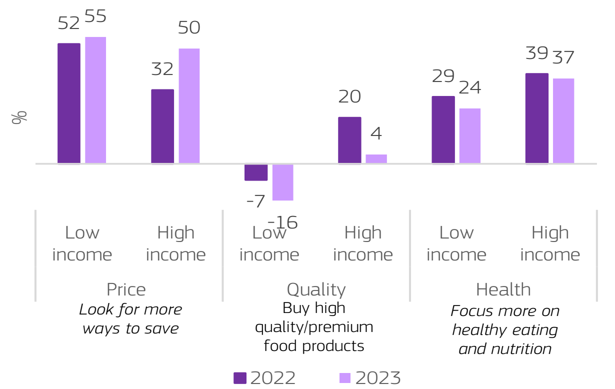
Note: 2023-2028 illustrates Euromonitor forecast.
Source: DG Agriculture and Rural Development, based on Euromonitor.

GRAPH 1.2 Dietary preferences of consumers in selected EU countries (2021)



Source: DG Agriculture and Rural Development based on https://smartproteinproject.eu/plant-based-food-sector-report/.

GRAPH 1.3 Attitudes towards grocery shopping in 2023 compared with 2022 (net intent of consumers, %)



Source: DG Agriculture and Rural Development based on Eurocommerce (2023).

Plant proteins on the rise

For over a decade, EU consumers have increased their consumption of plant products. The consumption of plant-based alternatives to meat and seafood products has grown fivefold since 2011 (starting from a very low basis) and is likely to continue to grow further. Consumption of plant-based drinks is also set to increase, in particular driven by new sources of plant-based proteins (e.g. oats and almonds), which are replacing the traditional source (soya beans). Although these products do not fully replicate the taste and consistency of animal products, consumers are still willing to diversify their protein choice, and/or add plant-based products to their diets. Despite this strong growth, animal protein is expected to remain the dominant source of protein consumed in the EU in the future (around 60%).

Alternative diets are dominated by flexitarians

Health and environmental concerns are the main drivers for dietary changes, translating into increasing demand for plant-based products. As a result, more and more EU consumers are following a 'flexitarian' diet (30% in 2021)[7] which is characterised by a preference for plant-based food products, while sometimes allowing for meat and fish. This represents a higher percentage than that of vegans and vegetarians (a combined 7% of consumers, based on selected EU countries). Thus, an increase in demand for plant-based food will likely be fuelled by flexitarians seeking occasional substitutes for meat[8]. The prevalence of meat-avoidant diets further varies among age groups and geographies. For example, in Germany, about 13% of young adults (aged 18-29) categorise themselves as vegan or vegetarian, compared to only 6% in Italy and 10% in France[9].

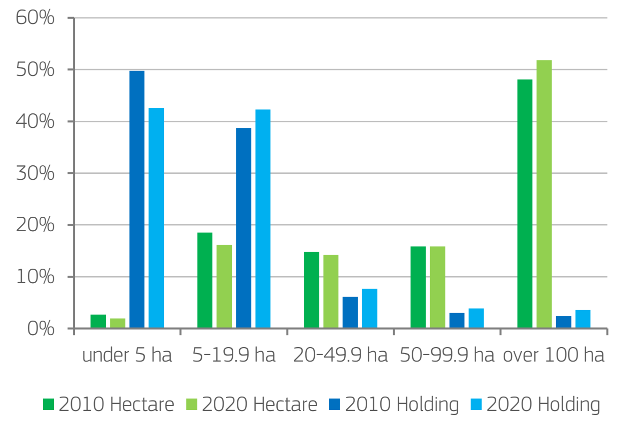
Food price inflation is interrupting some dietary trends

Although health and environmental concerns remain strong, the recent rise in inflation led prices to become the most influential factor. To cope with tighter budgets, consumers are opting for private brands, reducing purchases, and seeking alternative retailers. This price sensitivity comes at the expense of some food categories, as consumers are less willing to pay a premium for higher value products[10]. To some extent, this could delay some dietary changes and trends observed in the past. Despite short-term disruptions, the significance of healthy diets is likely to persist as consumers prioritise health post-COVID. This is reflected in rising demand for functional and fortified food products which incorporate components like vitamins or probiotics. These dietary shifts and changes in demand present both challenges and opportunities for the EU agri-food sector.

[7] ProVeg (2021)
[8] EIT Food (2021)
[9] Statista. (2022)
[10] Eurocommerce (2023)

FARMING SECTOR STRUCTURE

GRAPH 1.4 Share of total hectares and number of holdings by size category of farms (2010 and 2020)



Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 1.5 Numbers of agricultural holdings by specialisation (million)

Source: DG Agriculture and Rural Development, based on Eurostat

GRAPH 1.6 Ratio of average yields of EU countries entering the EU in 2004 to the rest EU

Source: DG Agriculture and Rural Development, based on Eurostat

A trend for fewer and larger EU farms

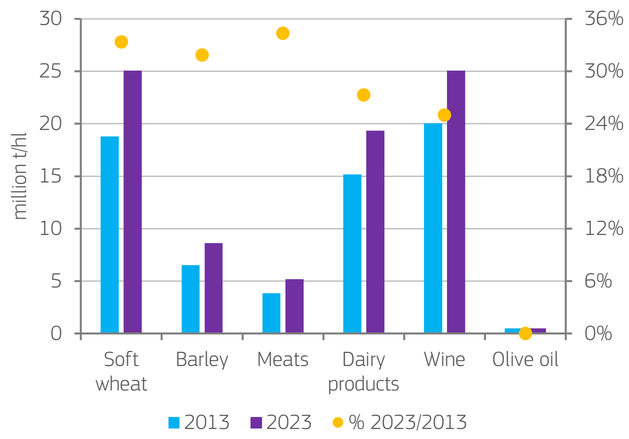
Although the size of EU agricultural land remained quite stable between 2005 and 2020 (growing by only +0.3%), the number of farms in the EU declined by 4.6 million (to 9.1 million farms in 2020). More than half of the EU's agricultural land (52%) was in 2020 managed by farms larger than 100 ha (around 4% of all farms), with small farms (below 5 ha) using only around 6% of total land. However, there are significant differences between EU countries. On the one hand, the greatest share of land managed by large farms (more than 100 ha) is in Czechia and Slovakia (large farms account for 86% and 89% of agricultural land respectively), corresponding to 13% and 17% of all farms. On the other hand, Romania has one of the largest shares of agricultural area (23%) managed by small farms (89%).

Among different farm specialisations, crop farming dominates (58% of all EU farms), followed by livestock (22%) and mixed farms (19%). When assessing how diversified the geographical location of production is for certain crops, the most concentrated are specialised crops, driven by specific climatic conditions. For example, almost 99% of the EU's olive oil production takes place in four EU countries, and more than 85% of the EU's wine production takes place in five countries. For other product categories, the concentration is lower. For example, four or five main EU producing countries account for 60% of the production of milk and meats (except sheep and goat meat) to 75% of grain production. On the management of farms, more than 93% of farms are classified as family farms, and these family farms are consistently smaller than non-family farms (on average around 11 ha in size, compared to 102 ha for non-family farms). At the same time, young farmers (under the age of 35) remain scarce (6.5% of all farmers in 2020), and farm managers are mostly men, even though there is increasing share of female farmers (up from 26% of all farmers in 2005 to 32% in 2020).

Productivity growth on farms is slowing down

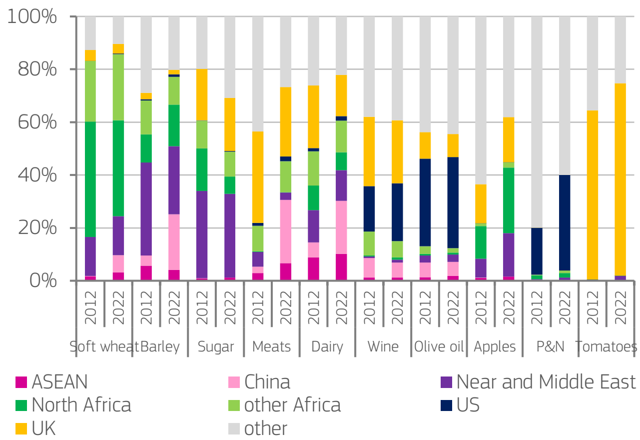
Alongside increasing farm sizes, productivity improved. Growing economies of scale have also helped the potential of farms to invest and to become more productive and resilient. In the past, a large share of productivity growth in agriculture (expressed through yields) was driven by catching-up processes between countries entering the EU after 2004 and other EU countries. Between 2013 and 2023, the gap in barley yields narrowed the most (-21.5pp, yields of countries entering the EU after 2004 corresponding to 92% of other EU countries), followed by soft wheat and rapeseed. These developments were less pronounced for sugar beet and maize. At the same time, the gap in milk yields also narrowed down (to 70%). As these structural changes are likely to slow down in the coming years, this could lead to slower productivity growth for EU agriculture overall exacerbated by growing uncertainties linked to climate change.

GRAPH 1.7 Change of EU net exports of selected agricultural commodities (million t/hl)



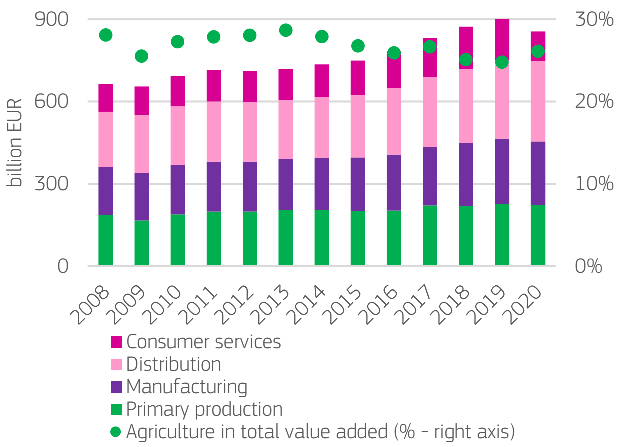
Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 1.8 Share of different geographical regions in EU exports for selected agricultural commodities



Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 1.9 Gross value added along the EU agri-food chain (billion EUR) and share of agriculture in total value added



Source: DG Agriculture and Rural Development, based on Eurostat.

The EU continues to increase its net export position

Productivity-driven production growth is helping to satisfy EU consumption needs while simultaneously fostering exports. As a result, the EU has increased its net export position in wheat, barley, wine, and dairy products while it has sustained a positive trade balance for meat products as well as olive oil despite challenges observed in production in recent years. Thanks to this, the EU has strengthened its global position as a trusted provider of food and thus of food security.

At the same time, EU exports are well-diversified across trade partners for many agricultural commodities although some regional concentration of exports can still be observed in some cases. Across geographical regions, Asian markets have been growing their share of EU exports. South-east Asia increased its market share of EU exports of dairy products such as skimmed milk powder (SMP) and whey powder markets while China has significantly boosted its imports from the EU in several products, notably barley, soft wheat, SMP, cheese and pigmeat. On the other hand, countries in the Near East and Middle East, and northern Africa dominate the EU's trade in soft wheat, and these countries are also the destination for around 1/3 of the EU's total sugar exports. For more perishable products, the EU agri-food sector benefits from the geographical proximity of the UK market, which takes most of the EU's exports of fresh peaches, nectarines, and tomatoes (around 73% in 2022). For apples, an equally high share is also taken by the Near East and Middle East and in particular north Africa.

In value terms, EU net agri-food exports more than doubled between 2012 and 2022. The value of exports only grew by 57%, mainly due to an increase in food preparations (27% of the growth).

Added value generated by farmers remains stable

Before the COVID-19 pandemic, the EU food chain generated gross value added of more than EUR 900 billion (2019) which declined to EUR 850 billion in 2020, mainly due to a drop in demand from food services. Excluding this extraordinary year, the value added along the chain grew by 32% between 2010 and 2019, thanks to food services (50% increase in value added), followed by food distribution (34%) and food manufacturing. This reflects increasing consumer demand for convenience products which generate more value for these stages of the food chain. At the same time, consumers' focus on quality and on healthier and more functional food creates an opportunity for EU farmers to add value to their production, for example through quality schemes, organic (or other specialised non-conventional) production systems, or by involvement in short-supply chains, and direct sales to consumer. As a result, the value added for primary producers has also increased in recent years, and it remains stable compared to the overall value added (around 25%). This trend is supported by ongoing efforts of the CAP aiming at a more modern and sustainable EU agriculture, in an even more competitive and challenging environment.

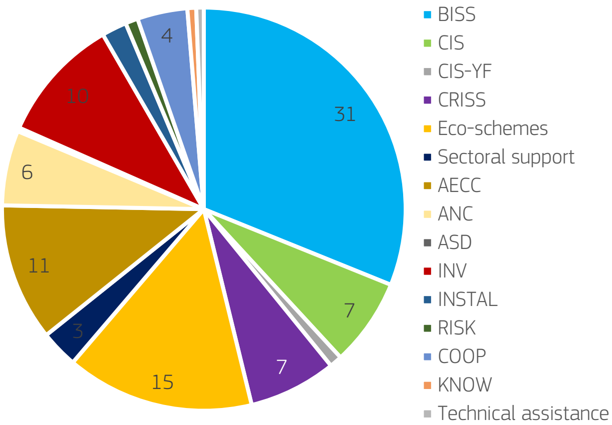
POLICY AND TRADE

The CAP helps EU farmers to cope with challenges

Through support to EU farmers, CAP contributes also to EU and global food security. It also helps farmers to fulfil their functions in society - not only as food providers but also guardians of the land and natural resources. Moreover, the CAP has evolved over the years in response to changing economic circumstances, consumer expectations, and societal concerns about the impacts of agricultural production. Through different tools, the CAP supports EU farmers to cope with these challenges, while, at the same time, helping them to become more sustainable, resilient, and competitive. The CAP provides tools to alleviate the potential negative impacts resulting from the vulnerability of agriculture vis-à-vis external shocks (e.g. weather/climate-related, geopolitical) by providing exceptional measures.

Crisis or market measures addressing severe market disturbances are not modelled: the baseline does not include neither unforeseen market disruptions nor related measures that could be adopted consequently.

GRAPH 1.10 Share of total public expenditure (EU and national co-financing where applicable) on CAP instruments (%)[11]



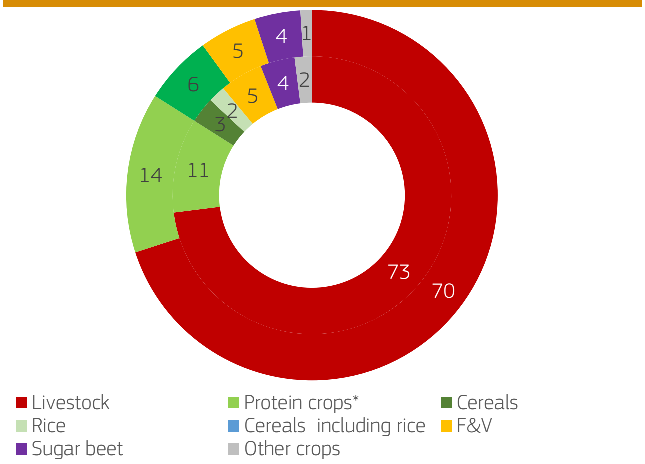
Source: DG Agriculture and Rural Development, based on CAP Strategic Plans.

Growing importance of environmental and social sustainability in EU farming

Sustainability objectives remain at the core of the CAP. The economic sustainability pillar focuses mainly on supporting viable farm incomes through direct payments to active farmers. These serve as a safety net and ensure the continuation of farming activity. Decoupled payments ('Basic Income Support for Sustainability') account for the largest share of the total CAP expenditures (around 31%).

Coupled payments ('Coupled Income Support', CIS) account for around 7%. Coupled payments aim at improving competitiveness, sustainability and/or quality in targeted sectors which experience certain difficulties and are important for socio-economic and/or environmental reasons. Coupled payments are primarily allocated to farmers raising ruminants (70% of CIS allocation), the rest being distributed between producers of protein crops/legumes, fruit and vegetables, cereals (e.g. rice, sugar beet).

GRAPH 1.11 Share of an annual financial allocation for coupled support by sector in 2023-2027 (outer cycle) and 2014-2020 (inner cycle)%



*Note: *Protein crops/legumes including mixtures of legumes in grasses in 2014-2022, and Protein crops including mixtures of legumes with grasses in 2023-2027.*
Source: DG Agriculture and Rural Development, based on CAP implementation data and CAP Strategic Plans.

These two are the only CAP measures used explicitly in the baseline. The impact of capping payments, specific schemes for young farmers, and the redistributive payment are only accounted for in the projections through expert judgement. Given the geographical aggregation of the model used for the EU projections, it is not always possible to account for how direct payments are distributed between and within EU countries or for targeted allocation of coupled payments. Average values are therefore used.

In addition, economic sustainability is further supported through measures for quality production and for improving the market orientation of EU farmers (e.g. via producer organisations). These

[11] BISS – Basic income support for sustainability, CIS – Coupled income support, CIS-YF – Complementary income support for young farmers, CRISS – Complementary Redistributive income support for sustainability , AECC – Environmental/climate/animal welfare related, ANC – Areas with natural constraints, ASD – Areas with specific disadvantages, INV – Investments, INSTAL – Setting up of farmers and start-ups, RISK – Risk management tools, COOP – Cooperation, KNOW – Knowledge and information.

measures can add value to EU agricultural production, creating new market opportunities on both internal and global markets.

However, economic growth cannot come at the detriment of the environment. Therefore, the CAP has also strengthened its environmental pillar to promote sustainability. As a result, direct payments are now granted under enhanced conditions (including Good Agricultural and Environmental Conditions – GAEC). These more stringent conditions could have an indirect impact on the baseline, such as for example by maintaining permanent grassland, ensuring crop rotation (and/or combined with crop diversification) and requiring farmers to have non-productive areas and features on farmland. These requirements are expected to go beyond current practices carried out in different EU countries.

In addition to the enhanced conditionality, the eco-schemes (15% of total CAP public expenditure) accompany EU farmers in their transition towards more sustainable production systems. Eco-schemes provide incentives to adopt climate- and environment-friendly farming practices and approaches (such as organic farming, agro-ecology and carbon farming). Additional support to protect the climate, biodiversity and the environment is allocated through rural development funds.

The CAP also strengthens social sustainability, in particular through support to animal welfare, and alternative production systems (including short-supply chains), but also indirectly by increasing social conditionality and workers' rights.

These sustainability pillars are reflected indirectly in the baseline through expert judgement.

Trade remains critical to food security in the EU and globally

A rule-based global trade system remains important to the EU farming sector, as well as EU and global food security more broadly. Therefore, the EU continues to promote international cooperation and greater trade flows through its own actions, in particular trade agreements with both developed and developing countries.

Trade agreements bring additional value through sustainable growth, both in the EU (which is a front runner in sustainability standards) and in partner countries. Trade makes it possible for the EU products, which cannot be sold on the EU market, to be placed on international markets and create value for EU agri-food markets.

In addition to longer-term actions, the EU has proven to be a crucial trade facilitator in times of crisis, as was shown by both Green Lanes created during the COVID-19 pandemic or after the after Russia's unprovoked invasion of Ukraine when the EU set up Solidarity Lanes. This did not only facilitate trade flows, but it also helped to remove some pressure (and related markets' volatility) which was negatively impacting the global food security. Additionally, during the most recent crises, the good functioning of the EU's Single Market also proved able to efficiently absorb and solve trade disruptions/distortions.

Improving farming practices and more digitalised EU agriculture

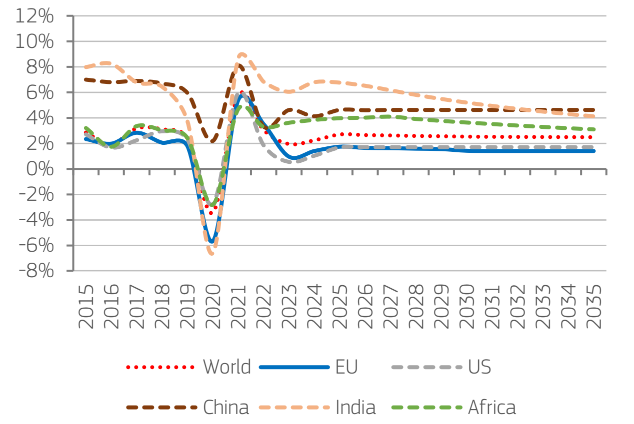
Agriculture in the EU faces many challenges that could reduce its production potential and competitiveness. However, research and innovation are key enablers to help the EU cope with these challenges. There have been considerable efforts in recent years to make farm processes more automated, in particular by adopting automation tools that protect also natural resources (e.g. precision farming and feeding, drop irrigation systems, more mechanised harvesting).

To react to different challenges, animal and plant breeding have also improved in recent years. Animal breeding nowadays offers solutions to improve feed efficiency and environmental impacts, while also focusing on quality, better use of resources, animal health and welfare, food safety and public health. Similarly, plant breeding aims at producing seeds that will be better able to cope with pests and diseases while simultaneously being more resistant to climate change.

Agri-digitisation is at the core of this transformation. Many tools are now available which allow farmers to monitor and predict crop-growing patterns and check animal-health conditions. As a result, these tools make it possible to optimise crop yields and animal performance. At the same time, these tools also help to improve transparency along the whole food chain. Digitisation can help EU agriculture cope with challenges and remain competitive, by providing innovative solutions and creating new business opportunities.

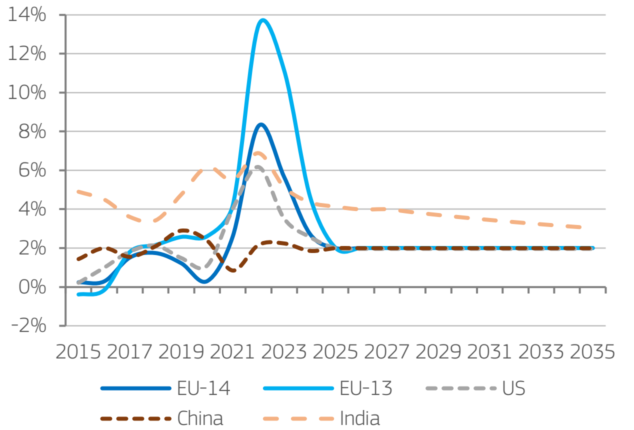
MACROECONOMIC ENVIRONMENT

GRAPH 1.12 Annual growth in real GDP (%)



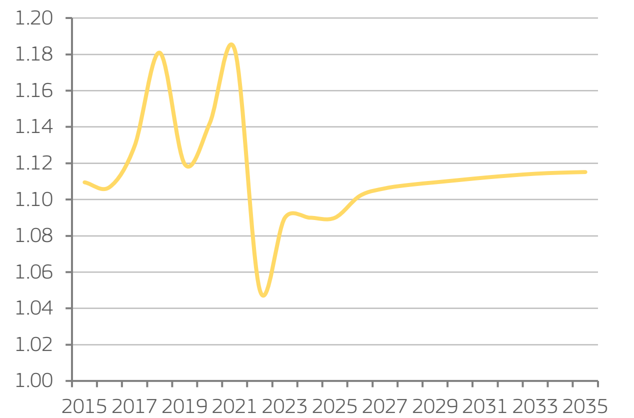
Source: DG Agriculture and Rural Development, based on AMECO, OECD-FAO and S&P Global.

GRAPH 1.13 Annual growth in consumer prices (%)



Source: DG Agriculture and Rural Development, based on AMECO, OECD-FAO and European Central Bank.

GRAPH 1.14 Assumed exchange-rate-value of the euro in USD



Source: based on OECD-FAO, S&P Global and European Central Bank.

Many macroeconomic uncertainties in the short term

Macroeconomic projections are significantly affected by several uncertainties. The Russian invasion of Ukraine is still ongoing, while the conflict between Israel and Hamas comes with uncertainties about a potential spillover to the wider Middle East and potential impacts on energy prices. Governments also face policy challenges in funding public expenditure due to interest-rate increases by central banks to contain the inflation surge. The purpose of this report is not to produce macroeconomic forecasts, but assumptions are nevertheless needed about the most plausible economic environment. The baseline scenario assumes that global economic growth will level off at an average annual growth of 2.5 % by 2035 (4.6 % in China, 3.4 % in India, and 1.7 % in the US), with reduced growth projected in countries like India and China. Real GDP in the EU is projected to grow by 0.9 % in 2023, and 1.4 % in 2024, thus implying a more sustained short-term growth from 2025.

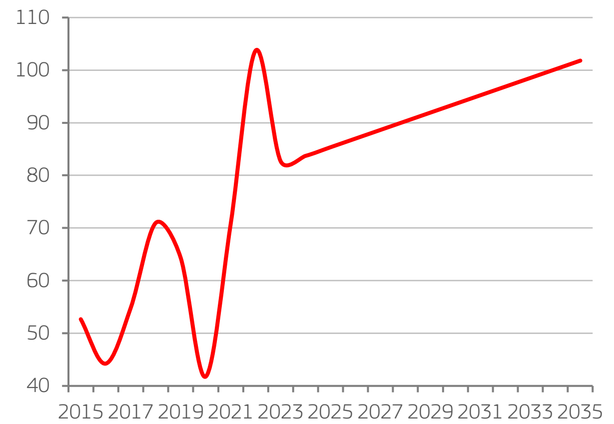
Inflation to return to normal levels in 2025

The surge of inflation in the EU observed at the end of 2021 was first caused by a post-pandemic mismatch between global demand and supply, which was further exacerbated by the Russian invasion of Ukraine. This inflation surge is expected to alleviate next year, as energy costs are expected to be contained thanks to declines in energy prices, the REPowerEU plan, and various national policies. Moreover, EU food-price inflation is also expected to be lower in 2024 than the levels recorded in 2023. However, core inflation (stripping out changes in the cost of energy and food) is likely to still drive general inflation above the 2 % in 2024. The baseline scenario assumes annual inflation for the countries which entered the EU before 2004 (EU-14) of 5.6 % in 2023 and 2.7 % in 2024 while for the remaining group of countries (EU-13), it assumes annual inflation of 11.1 % in 2023 and 4.7 % in 2024, subsequently falling towards a stable 2 % annual inflation path until 2035.

The euro is set to appreciate less in the medium term

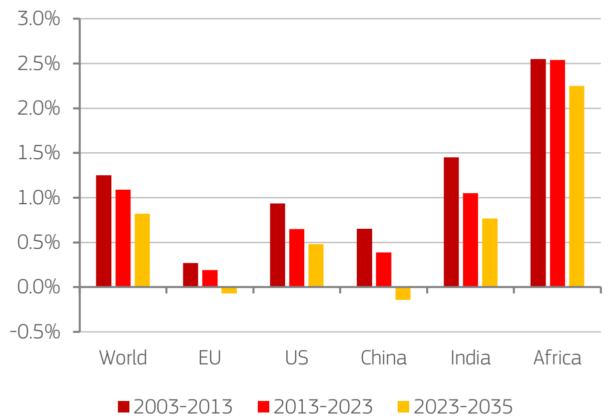
Exchange rates directly impact the EU's trade competitiveness. It is difficult to project a value for exchange rates in the medium term due to the large volatility observed in currency markets, the use of the euro vs the US dollar in global trade, and as the currency reserves by other countries and geopolitical and related trade dynamics. Moreover, most exchange-rate forecasts cover only the short-term. Forecasts for the euro exchange rate until 2025 are in line with the ECB technical assumptions from September-forecast for a value of USD 1.09. In the medium term, it is assumed that the euro will slightly appreciate towards USD 1.12 in 2035, thus being below both the values observed before 2021 and the projections used in last year's outlook.

GRAPH 1.15 Brent crude oil price assumptions (USD/barrel)



Source: DG Agriculture and Rural Development, based on OECD-FAO, European Central Bank and S&P Global.

GRAPH 1.16 Annual growth of world population



Source: DG Agriculture and Rural Development, based on AMECO, OECD-FAO.

Oil prices projected to increase in the medium term

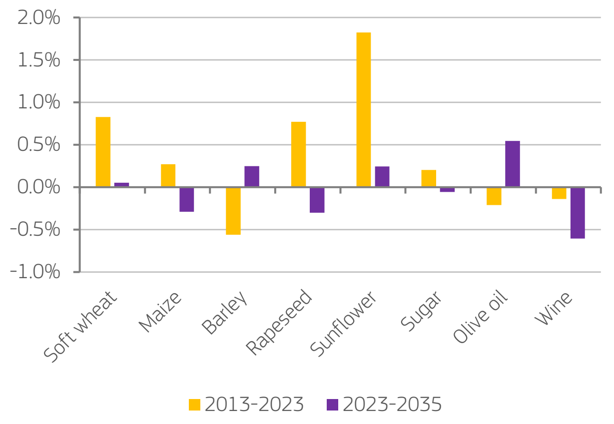
Compared with last year's outlook, Brent crude oil prices have been slightly revised downwards but they are nonetheless projected to be above USD 100 per barrel in the medium term, signalling significant global demand for oil and limited supply. Looking at last year's energy situation, the EU proved to be more resilient than many had expected to energy shortages driven by the invasion of Ukraine, and it is now better prepared to face the upcoming winter thanks to gas storage facilities being at 99% capacity, reduced demand and improved energy diversification. The conflict between Israel and Hamas brought a spike in prices to USD 95 a barrel in October 2023 that quickly returned to USD 80 a barrel at the cut-off date for this Outlook, and futures prices do not signal a significant increase in energy prices for next year. However, the decisions of OPEC countries on oil supply represent a significant element of uncertainty in both the short and medium term that it is difficult to predict. Brent crude oil prices in this medium-term outlook are projected to reach USD 102 a barrel in 2035, up from USD 83 a barrel in 2023.

EU population set to decline

World population growth, despite slowing to 0.8 % annually by 2035, will remain a key driver of global growth in demand. The population of Africa will grow the most in coming years (+2.3 % every year from 2023 to 2035) while population growth will be more contained - if not negative – in other world regions. The most noteworthy example of this decline in population is China whose population is projected to fall by 0.14 % annually over this period. In the short term, the population of the EU is still expected to grow mainly due to an increase of net migration. However, in the medium term, EU population growth is expected to decrease at an annual rate of 0.1 %, following the trend projected by the OECD-FAO Outlook.

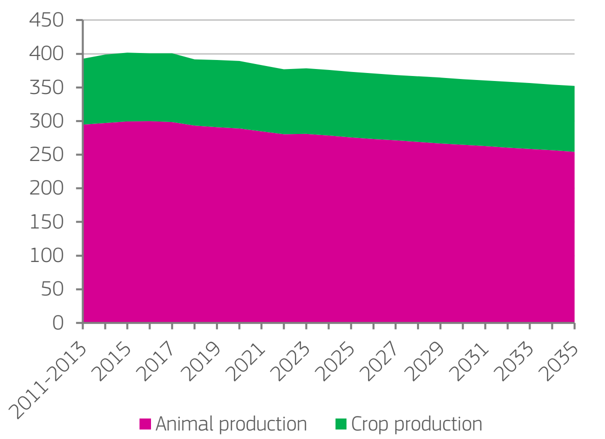
FUTURE SUPPLY

GRAPH 1.17 Annual growth in production for selected crops over selected periods



GRAPH 1.18 Annual growth in production for selected animal products over selected periods

GRAPH 1.19 GHGs from EU agriculture by animal and crop production (million t of CO_2 eq.)



Note: only commodities modelled by AGLINK-COSIMO are considered.

EU agriculture is on a transition path

EU agricultural production between now and 2035 is expected to grow more slowly than in the past. This is due to challenges linked to an increasing frequency and severity of weather and climate events, slower productivity growth in EU countries, and stricter environmental and climate regulatory framework. At the same time, new production patterns are likely to respond and to be aligned with consumer and societal concerns which could lead to some adjustments in production systems as well. To some extent, these challenges could be balanced by introducing more sustainable farming practices and other innovative solutions. Overall, this is expected to bring more resilience to the EU food systems and create further opportunities.

Lower but more sustainable growth in EU production

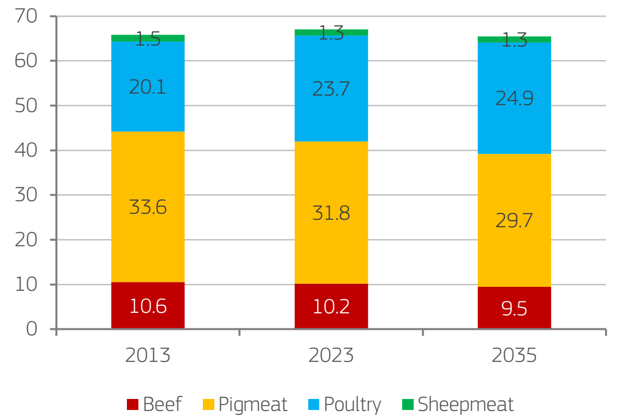
Despite more constraints on yield improvements, EU crop production could increase slightly in the future in particular being driven by oilseed production. Yields could remain rather stable as the positive impacts of enhanced sustainable farming practices and technology counteract the negative impacts of climate change and the reduced availability and affordability of inputs. As yields could remain stable, the production growth will be more depended on area developments. Regarding this, some competition between different crops is likely to happen, driven by their profitability, changing weather conditions regionally and evolving demand (e.g. lower feed and biofuel use). As a result, oilseeds and protein crops are likely to gain at the expense of cereals and sugar beet. On EU animal production, there could be some constraints on its changing consumer preferences and societal concerns remain significant factors, along with profitability, and regulatory framework for further expansion. As a result, EU meat production will continue declining (except for poultry), as well as EU milk production, driven both by reduced numbers of cows and lower productivity growth. However, EU animal production is likely to become more sustainable and resilient through an adaptation of more intensive production systems, and an expansion of more extensive ones.

Accelerated reduction of GHGs from agriculture

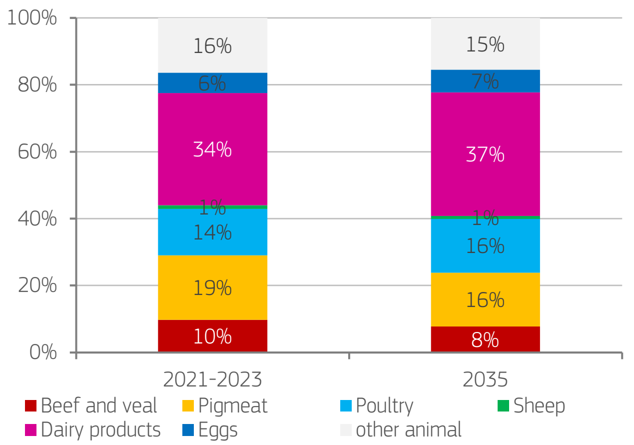
Considering trends in both crop and animal production, direct GHG emissions from agriculture (only based on direct emission factors such as herd size) are expected to further decline in the coming years. For animal production, the reduction of GHG emissions observed between 2013 and 2023 is likely to accelerate further until 2035. On the other hand, driven by stable yields, emissions from crop production are to remain stable. As only direct emissions are considered in this calculation, even greater reductions could be achieved if the full application of CAP measures will be accounted for, and so use of emission-reduction technologies, and farming practices.

CHANGING DIETS

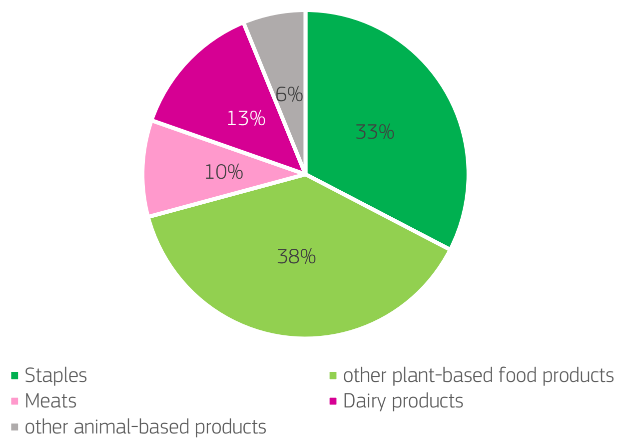
GRAPH 1.20 EU per capita consumption by meat type (kg)



GRAPH 1.21 Animal proteins by type (%)



GRAPH 1.22 Distribution of calories available in food in the EU by source (%)



Sustained consumption of dairy products while meat consumption continues to decline

Considering the protein composition of an average EU diet, animal products will remain the main protein source (roughly 60%). However, considerations about impact of eating habits and also consumer considerations about quality and other food attributes are likely to lead to some shifts within this protein source. The relatively healthier image of poultry meat, and its cheaper price are expected to support further growth of EU per capita consumption of this type of meat. On the other hand, sustainability and animal welfare concerns will together lead to a lower per capita consumption of beef and pigmeat. In the case of the latter, this is also due to a declining preference for more fatty meats. At the same time, the consumption of sheepmeat could remain stable, being more culturally and tradition-bounded and less price sensitive.

Overall, EU per capita meat consumption could decline by 1.6 kg between now and 2035. Regarding dairy products, an overall stability in per capita consumption is expected. This, even though consumers are changing their eating habits and lifestyles which could contribute to a reduced intake of some more traditional dairy products (such as drinking milk). On the other hand, innovative, functional and fortified products are gaining importance (e.g. yoghurts) and also the use of dairy ingredients. Among all dairy products, cheese could continue showing the most positive prospects through multiple applications and channels (retail, foodservice, processing).

Increasing consumption of pulses and less vegetable oils

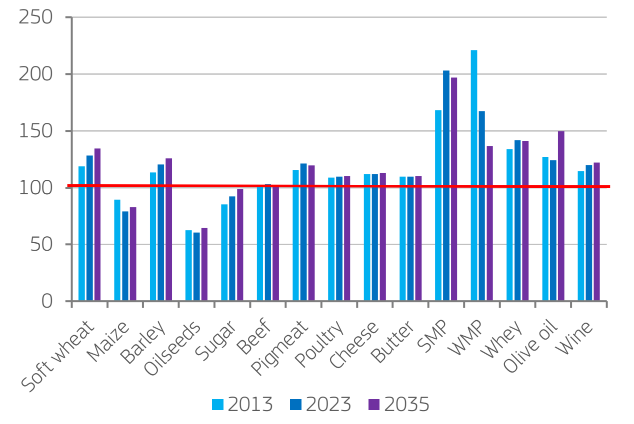
Plant proteins are expected to cover around 40% of the EU protein intake. The major share (more than 67%) will be of cereal origin (e.g. wheat, maize, rice). These products represent staple food products and account for a large share of calories available in the food in the EU. Between now and 2035, these traditional sources of plant protein are expected to lose some shares to other crop products, notably to pulses, fruit and vegetables between now and 2035.

At the same time, there could be some reduction of consumption of vegetable oils, as consumers are likely to opt for alternatives or reduce their consumption of fat overall. For example, olive oil could become more popular especially outside the main EU producing countries thanks to an increasing popularity of Mediterranean diet.

In addition, this Outlook also presents trends in wine consumption. It is expected to decline further while assuming some counterbalancing impact of growing popularity of sparkling wines on the further reduction of red and rose wines.

TRADE AND FOOD SECURITY

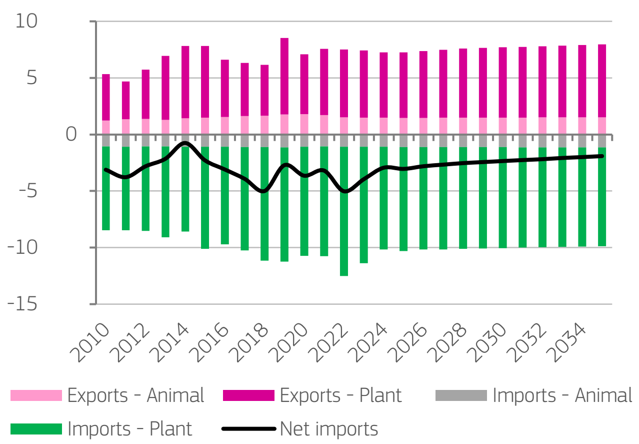
GRAPH 1.23 EU self-sufficiency rates for selected agricultural commodities



Note: Self-sufficiency rates are calculated as production/consumption. The value above 100 indicates the capacity to export.

GRAPH 1.24 Annual growth rates of EU exports for selected agricultural commodities

GRAPH 1.25 EU agricultural trade balance (1000 t of crude protein)



Note: only commodities modelled by AGLINK-COSIMO are considered.

EU continues to generate production surpluses despite challenges

Despite the likelihood of reduced growth in EU agricultural production in the coming years, the EU will still be able to remain net exporter in several products. This will also be partly due to changing consumption patterns in the EU (e.g. reduced meat consumption). As a result, the capacity to export (expressed through self-sufficiency rates) could be sustained in animal products. And the EU could even further improve its net exports of certain crops, in particular soft wheat, barley, olive oil and wine. By doing so, the EU could sustain its own food supply while simultaneously confirming its importance for global food security.

At the same time, the EU's import needs for oilseeds could be lower in the future, as domestic production is expected to grow slightly, while EU demand for oilseeds, especially for feed use is set to decrease. Over the projection period, the EU could also come closer to self-sufficiency in sugar.

But growth in EU exports could slow

Growth rates for EU exports of agricultural products between now and 2035 are expected to be slower than the average rate between 2013 and 2023. This will mainly be due to increasing self-sufficiency rates in the main import-dependent countries, growing competition for EU products from products produced elsewhere (especially for basic commodities), and growth rates for demand in some key import destinations (e.g. China, other middle-income countries) that will be generally lower than previously observed. On the other hand, these downward pressures could be offset by increasing demand for EU-origin products, in particular because of the EU's quality and safety standards.

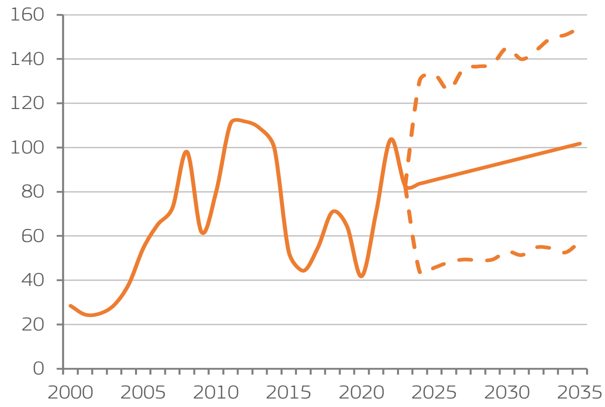
In particular, growth rates for exports of soft wheat, barley, beef, and most dairy products could be reduced the most and could even become negative in the case of pigmeat and maize, with China likely to be the strongest driver behind this trend not only for the EU but globally.

The EU is set to increase exports of proteins

Increasing net exports of cereals, and sustained export capacity in animal products will translate into increasing EU's exports of proteins. On the other hand, the high level of protein imports, addressing different needs (food, feed, fuel) which was observed in past years, is assumed to be reduced. This, because of lower demand for feed and biofuel production over the coming years.

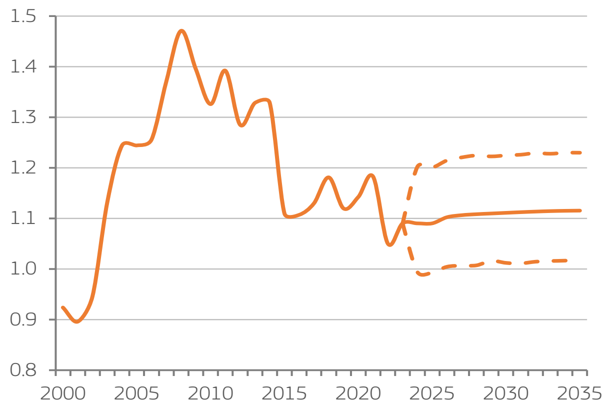
UNCERTAINTIES

GRAPH 1.26 Brent crude oil price projection (USD/bbl) and uncertainty range



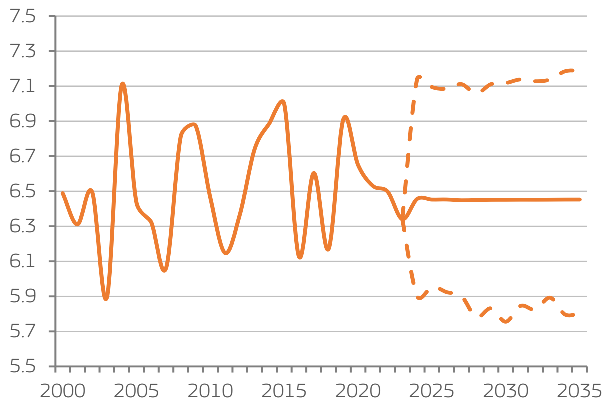
Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.27 Exchange rate projection (USD/EUR) and uncertainty range



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.28 EU soft wheat yield projection (t/ha) and uncertainty range



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

Sources of uncertainty

Every Outlook is underpinned by a set of uncertainties. These uncertainties are diverse in nature and have varying impacts on markets, from less serious to more serious, from local to global, etc. This has been particularly pronounced since 2020, when first COVID-19 and then the Russian invasion to Ukraine unexpectedly and unevenly impacted economic sectors and countries worldwide. These sectors and territories have also experienced varying recovery paths.

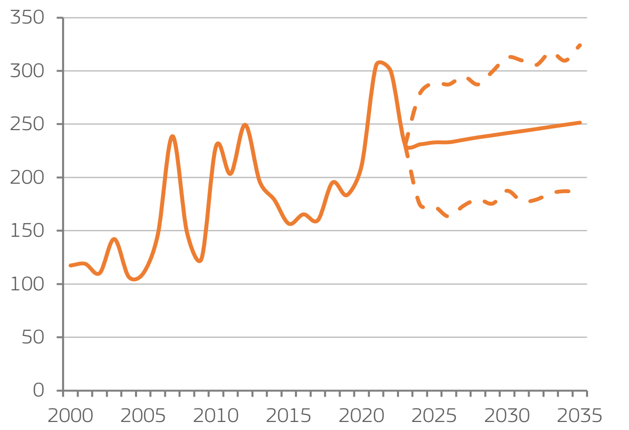
The baseline projections presented in this report reflect the consensus view of likely future market developments. However, any projection represents just one of many possible trajectories, and it is based on several assumptions. The results of this uncertainty analysis, therefore, quantify the likely range of market outcomes around the consensus view. These market outcomes could be the result of many factors, such as weather deviations and other factors affecting the agricultural markets.

Factors that affect agricultural markets can be grouped into those that mainly affect supply and those that mainly affect demand, although there are clear links between the two. In this report, the main risk of market uncertainty is assumed to stem from macroeconomic conditions and yields deviating from their baseline trajectories (deemed most plausible at the time of the analysis). Crop yields and macroeconomic variables are considered proxies for numerous drivers of market developments. These are also variables that can be quantified, so their impacts can be measured. However, many sources of uncertainty are hard to quantify. These sources of uncertainty include geopolitical and climate events, the disruptive impact of which could be very significant. They also include changing consumer preferences and habits.

Oil prices and exchange rates

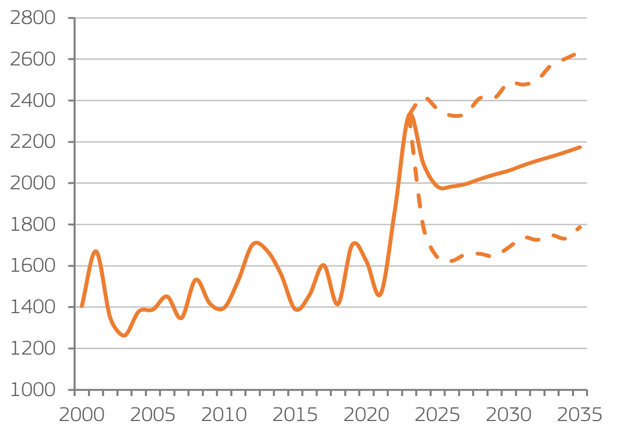
The baseline assumes that the crude oil price will be USD 102 per barrel in 2035. However, oil price projections are notoriously uncertain, which is evident in the wide 'uncertainty band'. Energy prices affect agricultural markets through several channels. They affect production and processing costs, which could lead to higher food prices, harming the purchasing power of consumers (through increasing costs of living) or biofuel demand. High oil prices, for example, drive up production costs (shifting the supply curve upward) and reduce the purchasing power of consumers (shifting the demand curve downward). High oil prices also reduce demand for fuel but increase the competitiveness of biofuels. The net effect on the demand for biofuel feedstocks also depends on market specifics and existing biofuel policies.

GRAPH 1.29 EU soft wheat price projection (EUR/t) and uncertainty range



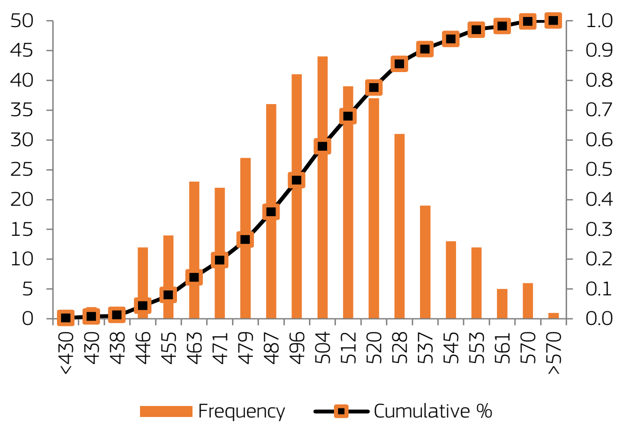
Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.30 EU pigmeat price projection (EUR/t) and uncertainty range



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.31 Distribution of the EU raw milk price in 2035 across the stochastic distributions



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

Another factor causing uncertainty is the development of the exchange rate which will have further implications on the trade competitiveness and the cost of imported inputs. In the baseline scenario, it is assumed that the exchange rate will appreciate slightly from USD 1.09 USD to the euro in 2023 to USD 1.12 USD to the euro in 2035. A stronger euro reduces the competitiveness of EU production and increases the trade deficit. That is, a higher price of EU products in US dollar leads to lower EU exports while a lower price of imported products in euro increases imports.

The historical fluctuations over time in the international price of oil lead to an uncertainty band of approximately ± USD 50 a barrel around the projected value. An energy price that is more than 50% higher or lower than the one used in the current Outlook would have a significant impact on market projections. In comparison, the uncertainty band around the USD/EUR exchange rate is narrower, at approximately ± 10 % around the projected value. However, and as noted above, the exchange rate has a direct effect on the competitiveness of the EU's agricultural sector and therefore on trade flows, so even a modest variation in the exchange rate will have a large impact on market outcomes.

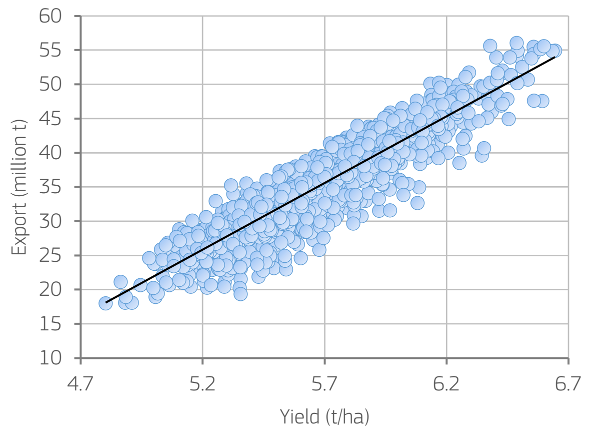
Crop yields

Yields have a direct effect on crop production. Years with favourable climatic conditions lead to high yields and a bumper crop while years with low yields due to drought, heatwaves, or excessive rain can result in crop failure. As was the case with the macroeconomic drivers, the stochastic simulations are used to quantify the uncertainty of future crop yields around their projected values. EU soft wheat yields, for example, are projected to remain stable between now and 2035 at a value of around 6.5 t/ha. Based on the stochastic analysis, this value falls within the uncertainty band of between 5.8 and 7.1 t/ha.

Uncertainty of prices resulting from macroeconomic uncertainty and uncertainty over yields

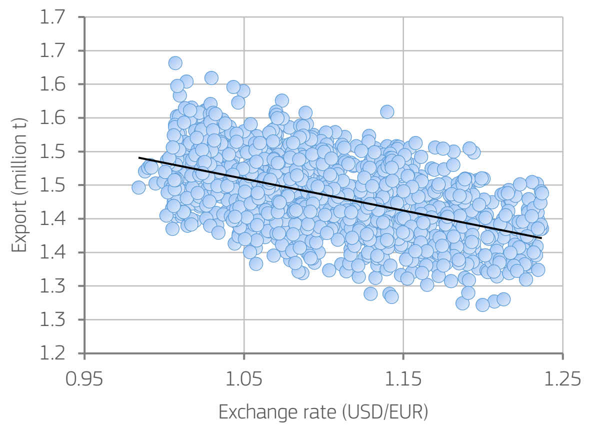
The uncertainty related to the factors affecting supply and demand (e.g. energy prices, exchange rates and yields) translates into uncertainty about the market outcomes themselves, as expressed by agricultural commodity prices. Therefore, even if future market trends presented in this Outlook lead to certain EU soft wheat prices that follow the solid line, this will probably not be the actual outcome as prices might vary. The uncertainty related to the development of the oil price, the exchange rate, and other macro variables, as well as the uncertainty related to future crop yields, suggests that prices are likely to end up somewhere between the two dashed lines, provided that the underlying assumptions on market trends turn out to correspond to reality. That is, the wheat price could end up being around EUR ±50/t higher or lower than the projected price due to these uncertainties. This is also the case for commodities such as meat and dairy products where production is only affected indirectly by crop yields. In the case of pigmeat, for example, the uncertainty range around the projected price is approximately EUR ±400/t.

GRAPH 1.32 EU wheat exports and yields across the stochastic distributions, all projection years



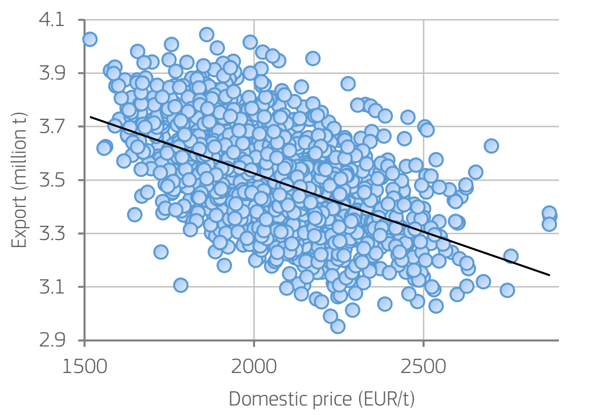
Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.33 EU cheese exports and the USD/EUR exchange rate across the stochastic distributions, all projection years



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.34 EU pigmeat exports and domestic prices across the stochastic distributions, all projection years



Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

Derived trade effects

Trade patterns are also changing, in response to both the variations in yields and the corresponding changes in production. Specifically, low yields can lead to excess domestic demand whereas high yields can lead to excess domestic supply. The exchange rate, on the other hand, affects domestic demand for imports and the supply of exports.

As an example of how yields can determine trade, there is a clear and positive relationship between EU soft wheat yields and exports across the stochastic simulations. Higher yields lead to higher production, lower prices, and excess domestic supply that can be exported. Specifically, the simulation results suggest that a 1 t/ha increase in EU soft wheat yields is associated with a 20 million t increase in EU soft wheat exports on average and vice versa. The lowest wheat yield across the simulations and years is 4.8 t/ha, resulting in EU exports of around 18 million t. Conversely, the highest EU wheat yield across all simulations is 6.6 t/ha, resulting in exports of 56 million t.

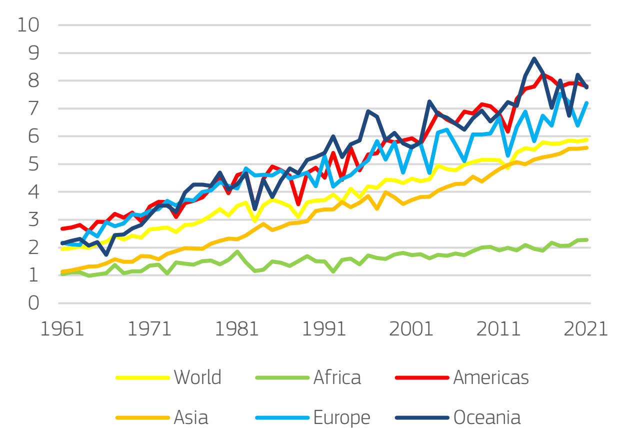
However, the relationship between yields and trade is not always this strong. In the case of rapeseed, for example, where the EU is a net importer, there is a negative relationship between imports and yields, albeit not as strong as the positive relationship between exports and yields in the soft wheat export case.

In the stochastic simulations, meat and dairy exports are affected mainly through variations in the exchange rate. For example, a 10 % appreciation in the euro against the US dollar (a 10 % increase in the dollar price of a euro) is associated with around 4 % less butter exports on average across the stochastic simulations. The price-export relationship, on the other hand, can be difficult to interpret. In the case of pigmeat, for example, exports are negatively associated with the domestic EU price as one would expect. Specifically, a 10 % increase in the domestic price is associated with a 3 % decrease in exports on average across the stochastic simulations. In other markets, however, this relationship between the two variables is not as strong or has the opposite sign. This is because domestic prices, supply and demand are determined simultaneously in the model.

Note: This analysis is based on the Aglink-Cosimo model where production costs and consumer demand are affected by macroeconomic country-specific variables and the international crude oil price (proxy for energy prices). A change in any of these factors will affect commodity markets through model linkages. Crop and milk yields are endogenously determined with domestic and international prices acting as market-clearing variables. The model allows for changes in equilibrium prices and quantities as long as market balances hold. The detailed methodology is available in Pieralli et al. (2022). The area between the dashed lines in the fan charts represents about 95% of alternative outcome distributions in each year. An input variable with a high level of historical variation will result in simulation outcomes that display notable variation, too. An indicator of relative variability that allows for comparison across variables measured in different units is the coefficient of variation (CV, %). The higher the CV value of an input variable, the higher the importance of that variable in driving market uncertainty (see Annex).

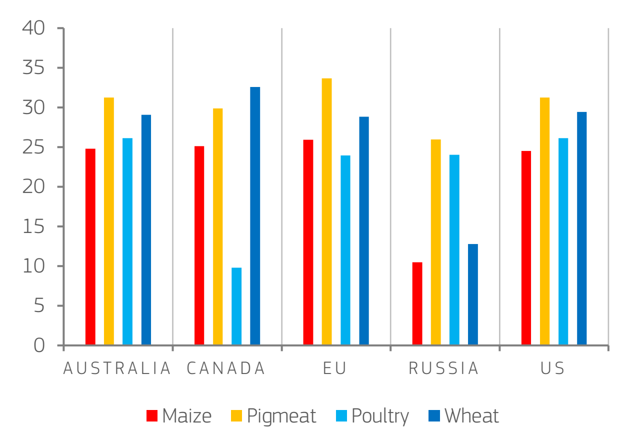
SCENARIO ON CLIMATE CHANGE

GRAPH 1.35 Development of maize yields in selected regions (t/ha)



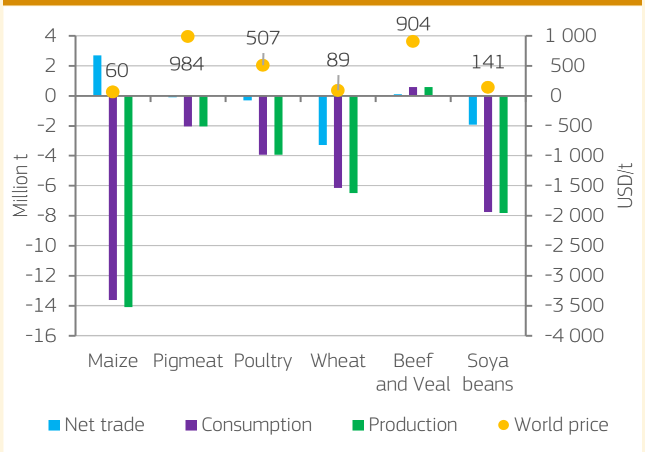
Source: DG JRC based on FAOSTAT.

GRAPH 1.36 Climate change impact on domestic prices (% compared with baseline, 2035)



Source: Scenario simulation based on Aglink-Cosimo model.

GRAPH 1.37 Climate change impact on global production, consumption, and trade (million t, compared to baseline in 2035) and global prices (USD/t)



Source: Scenario simulation based on Aglink-Cosimo model.

Scenario setting

This scenario analyses shifts in global agricultural production induced by climate change. Longer-term changes in average temperatures and altered rainfall patterns have the potential to shift global weather patterns, potentially affecting global production. The aim of this scenario is to look at the effect of climate change on medium-term yields and its knock-on effect on global crop and animal production, trade, and commodity prices. Even though the yield effects of climate change are not so relevant, their knock-on effects on production and worldwide trade are not to be neglected. Climate change is set to make certain areas better suited to agricultural production but create difficulties for others. Shifts in production patterns due to climate change will reflect the relative competitive advantage of different regions in commodity production. These impacts are likely to diverge due to countries' relative advantages in producing certain commodities.

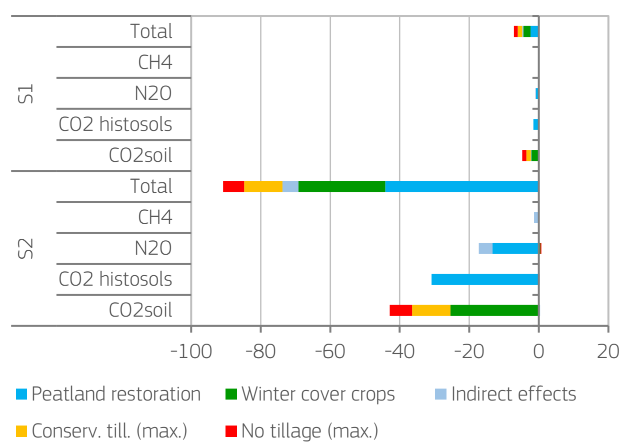
Global impacts

While the total harvested area is assumed to remain stable, there might be some shifts between crops by 2035. For example, there is expected to be an increase in the harvested area for maize (+1.1%), rice (+0.7%), soya beans (+0.9%), and wheat (+0.7%). These expansions will likely fail to offset yield declines caused by near-term climate effects. This will result in an overall production decrease of 1% for maize, 1.1% for rice, 1.8% for soya beans, and 0.7% for wheat by 2035. Considering these results and forecasts for increased food demand, climate change mitigation and adaptation strategies will be of increasing importance.

For animal products, notwithstanding some outliers where production of pigmeat and poultry will increase (e.g. Canada or Argentina), world production of pigmeat and poultry is expected to decrease by between 1.6% and 2.4% by 2035, driven by decreasing availability of feed. On the contrary, beef and veal production is estimated to increase by 0.7%, sheepmeat production by 0.3%, and milk production by 0.1%, implying a more extended use of pastures. Declining domestic production in the EU is likely to lead to higher domestic prices, which would negatively impact consumers domestically. Exports and imports are set to follow similar patterns as consumption trends. Forecasts for decline in crop production and monogastric animal production, but for increases in products deriving from ruminants, imply an increase in greenhouse-gas emissions from near-term climate change if no mitigation takes place (annually by +1.9% in total by 2035, or by 120 million t of CO_2 eq.). This would be driven by both an increase in land area utilised and higher ruminant numbers. Considering this, worldwide efforts to mitigate greenhouse-gas emissions and adapt to already locked-in climate change are critical even in the near term (e.g. through investments in climate-smart farming).

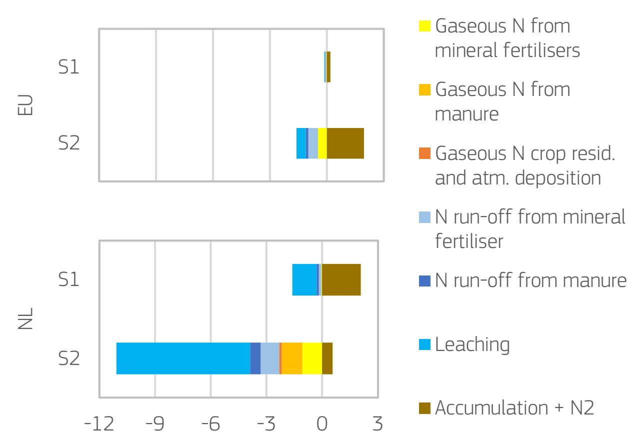
SCENARIO ON FARMING PRACTICES

GRAPH 1.38 Change in GHG emissions by gas type (million t CO_2 eq)



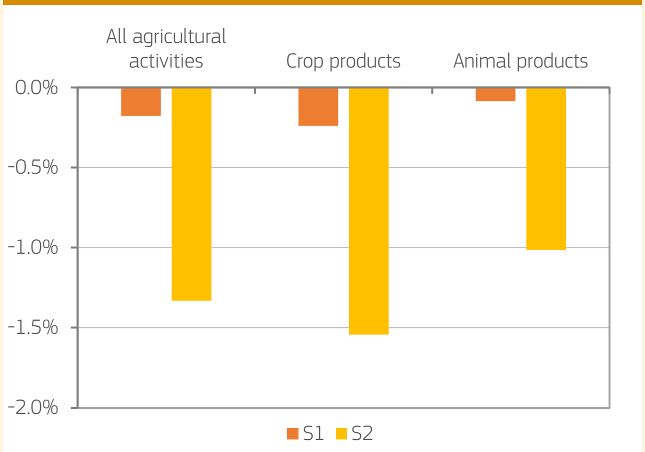
Source: Scenario simulation cased on CAPRI model.

GRAPH 1.39 N surplus change (kg N/ha UAA)



Source: Scenario simulation based on CAPRI model.

GRAPH 1.40 Farm income change in the EU



Source: Scenario simulation based on CAPRI model.

Scenarios and modelling assumptions

This scenario seeks to analyse the environmental and economic impact of different farming practices. The farming practices considered are conservation tillage, no tillage, winter cover crops (with 50% nitrogen-fixing crops), and peatland restoration (rewetting of agricultural organic soils). The reference scenario (S0) is a CAPRI projection for 2030 aligned with the 2020 Medium-term Outlook. In S0, the shares of winter cover crops and tillage practices on arable land match the 2016 Survey on Agricultural Production Methods and no restored peatland is assumed. In scenario 1 (S1), a moderate increase in the uptake of the considered practices is simulated. In scenario 2 (S2), the total potential of the farm practices is assessed, assuming their adoption on the maximum area possible for cover crops and peatland restoration and increases of up to a maximum of 80% of arable land for both of the two tillage practices.

Effects on climate and environmental indicators

Peatland restoration is expected to significantly reduce N_2O and CO_2 emissions from organic soils, while soil management practices increase carbon stocks in agricultural soils. The potential additional GHG mitigation (S2 compared to S0) is 74-91 million t of CO_2 eq. Most of the reductions can be attributed to the LULUCF sector (26-34% of 2020 net removals in S2), while only a smaller part can be attributed to the Agriculture sector (4% of the 2020 emissions in S2). The total emission reduction is equivalent to 24-30% of the target in the LULUCF Regulation. The mitigation potential of soil management practices is expected to last for about 20 years, so their long-term cost-efficiency of GHG mitigation remains uncertain. Although there is a small increase in the average N surplus in the EU (+0.6% in S2), peatland restoration decreases the N surplus in some hotspot regions. Moreover, nitrate leaching and runoff are estimated to decrease due to lower mineral fertilisation and decreased loss rates, reaching in hotspots -3% in S1 and up to -12% in S2. There are only minor effects on NH_3 emissions in S1, but in S2 there is an overall reduction of -3% for the EU and up to –10% in hotspot regions. Reductions in average EU soil erosion (-2% in S1, -18% in S2) take place mostly in Mediterranean regions.

Effects on area and income

S1 has almost no effects on UAA, while in S2, peatland restoration leads to a decrease in permanent grasslands (-5%), set-aside and fallow land, and some conversion of other land to UAA. These compensation mechanisms might not always be realistic due to natural conditions, and so the effects on overall UAA might be underestimated. Changes in farm income are negligible in S1; while in S2, decreases in farm income between 1% and 1.5% are projected, mostly due to higher production costs.

ARABLE CROPS

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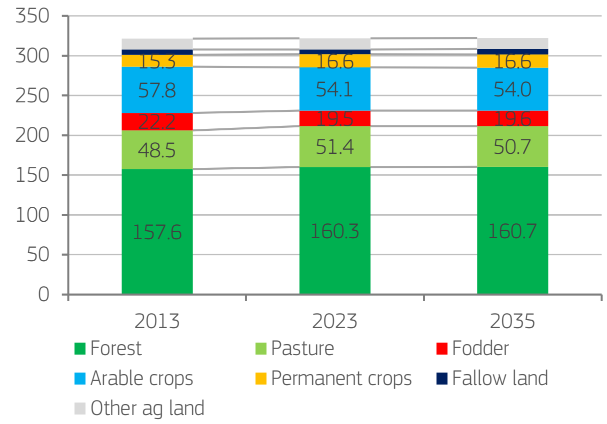
This chapter provides an outlook for arable crops, presenting production, consumption and trade trends for: (i) cereals (common wheat, durum wheat, barley, maize, rye, oats and other cereals); (ii) oilseeds and protein crops (rapeseed, sunflower seeds, soya beans and pulses); and (iii) several processed products (sugar, vegetable oils, protein meals, biodiesel and ethanol). The chapter first considers land use developments across different types of agricultural land and forest.

The projections consider the counteracting trends in yields driven, on the one hand, by the growing impact of climate change and economic constraints on the use of agricultural inputs and, on the other hand, by yield-enhancing factors (such as precision farming or soil improvement). The use of arable crops and their products for food is being driven by changing consumer preferences towards healthy diets and more plant proteins. The reduction in demand for animal proteins is also leading to lower demand for arable crops for feed.

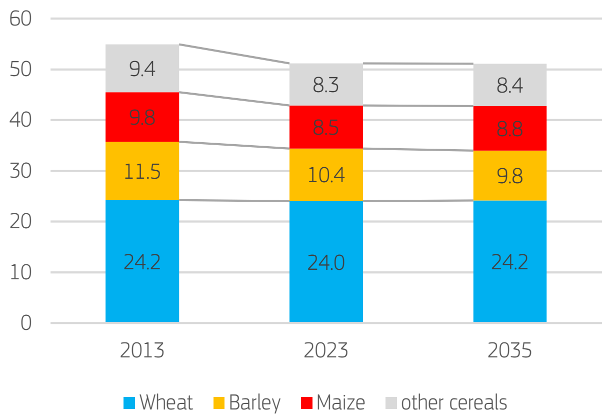
The progressive substitution of crop-based biofuels with advanced biofuels is expected to lead to reduced demand for oilseed oils. However, greater EU production of oilseed and protein crops is driven not only by changing consumer demand, but also by decoupled payments, policy incentives to change farming practices (crop rotation) and strategies promoting EU self-sufficiency in protein crops. Trade in arable crops follows production and use patterns, with the EU set to maintain its leading role as the world's largest net global wheat exporter, while reduce imports of oilseeds.

LAND USE

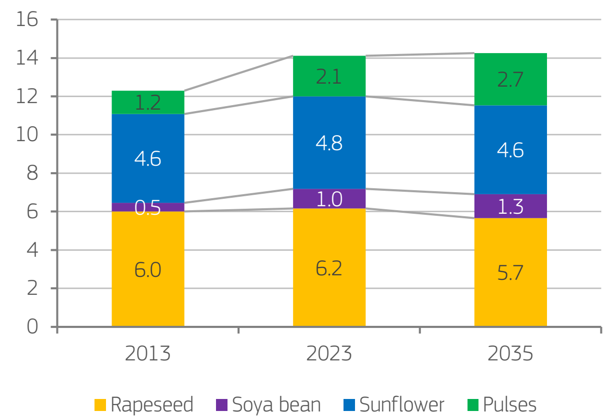
GRAPH 2.1 EU agricultural and forest area (million ha)



GRAPH 2.2 EU cereal area (million ha)



GRAPH 2.3 EU oilseeds and pulses area (million ha)



Arable land and pastures set to decline marginally

The overall amount of agricultural and forest land in the EU is forecast to remain stable at 322.4 million ha in 2035. The stability in the land area covered with income support in the current CAP (2023-2027) compared with the previous programming period does not trigger any shifts in land use. Despite this overall stability, relative changes could occur in the share of land under different types of land use. The area given to arable crops and permanent grassland is expected to decline (by -1 and -0.7 million ha respectively between 2023 and 2035), while the area given to permanent crops and fodder (e.g. silage maize and temporary grassland) will be roughly stable (growing by only +0.1 million ha each). The relative lack of change in land dedicated to permanent crops is expected to be driven by new plantations with more efficient production systems replacing older plantations. The volatile competitiveness of EU arable crops and growing water scarcity both act to disincentivise any extension of the area. Permanent grassland and fodder areas could decline only marginally between now and 2035 as an expected extensification of animal production may somewhat counteract the reduction in dairy and beef herds across the EU.

Soya beans and pulses areas are set to increase

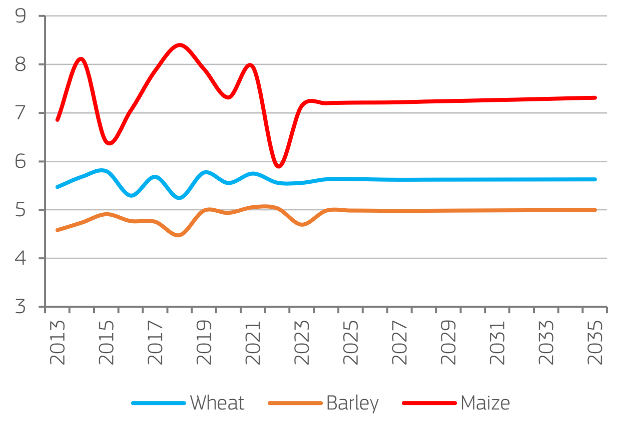
Within arable crops, a relative shift in land use is forecast from cereals to soya beans and pulses. This is due to some EU policy incentives to support an increase of plant proteins and through the coupled income support to protein crops. As a result, the area given to cereals is forecast to slightly decline below 51 million ha in 2035 (compared with 51.1 million ha in 2023), with a declining barley area (down 0.6 million ha from 2023 to 2035) counterbalanced by an increasing area of both wheat (up +0.2 million ha) and maize (up +0.3 million ha). There could be a shift in the cultivated areas of barley and maize from southern to northern EU countries to adjust to changes in climatic conditions. The area given to pulses is set to increase to 2.7 million ha in 2035 (up from 2.1 million ha in 2023) while the area given to soya beans is forecast to increase to 1.3 million ha in 2035 (compared with 1 million ha in 2023). The area cultivated with rapeseed is forecast to decline to 5.7 million ha in 2035 (from 6.2 million ha in 2023), mainly due to a decline in the use of biofuels, while the area given to sunflower is expected to return to historical levels of 4.6 million ha in 2035.

Both set-aside areas and forests are set to increase

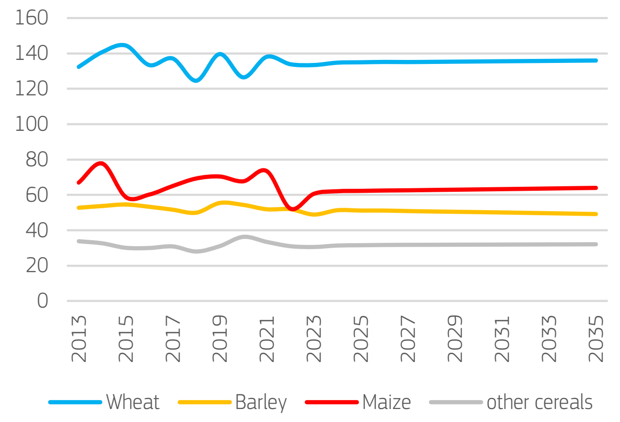
Given the stronger regulatory requirements, fallow land is expected to increase to 7 million ha by 2035. At the same time, the proportion of forest area could increase to 160.7 million ha in 2035. Forests have a crucial carbon-storing role and a growing need for renewable materials and increasing prices for wood and paper may also boost their economic value.

CEREALS

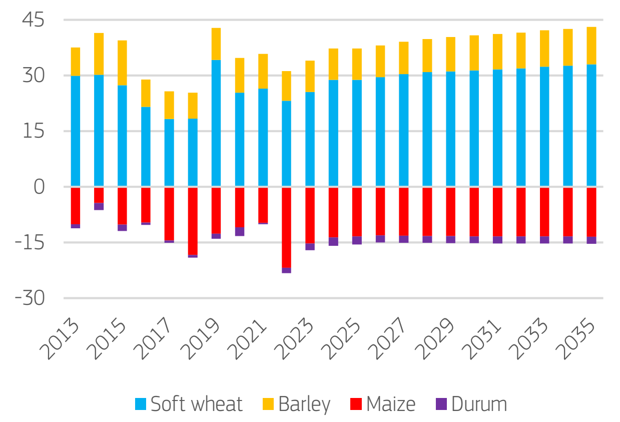
GRAPH 2.4 Cereal yields in the EU (t/ha)



GRAPH 2.5 EU cereal production (million t)



GRAPH 2.6 EU net exports of cereals (million t, exports-imports)



Stable yields despite climate change and fewer inputs

EU cereal yields are forecast to remain stable between now and 2035. Any negative effects on yields are expected to come from climate change and constraints on the availability and affordability of some agricultural inputs (e.g. plant protection products). In parallel, the share of lower-yielding production systems is expected to increase. These factors are likely to be counterbalanced by positive developments applicable within a short time that could boost yields and improve sustainability (e.g. precision farming, crop rotation, improved soil health). This could also be further supported by technological improvements. Compared with the 2021-2023 average, wheat yields could slightly decline by 2035 (-0.1 %), while yields are due to increase for maize (+4.5%) and barley (+1.4%), as yields were unusually low in 2022 and 2023. The yield gap in wheat and maize between EU countries is forecast to decrease, with wheat yields reaching almost parity between the EU countries entering the EU in 2004 and after, and the rest of the EU by 2035.

Cereal production driven by wheat and maize

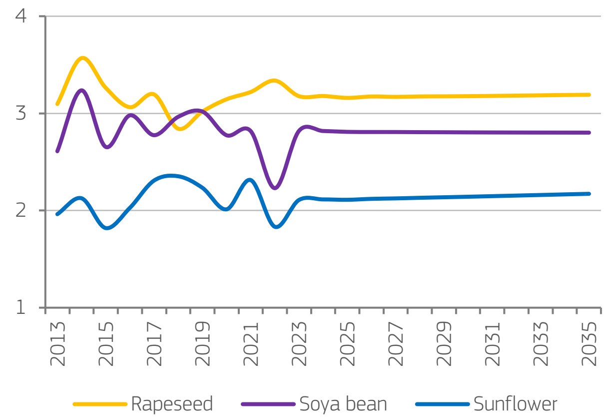
In 2035, overall EU cereal production is expected to be 281.2 million t (1.4 million t above 2021-2023). Production of both soft and durum wheat could increase slightly to 128.5 million t and 7.5 million t in 2035, respectively (as against 127.7 million t and 7.4 million t in 2021-2023), mostly because of a small increase in the area under wheat cultivation. Maize production is forecast to increase by 3% to 64 million t in 2035 (compared with 62.1 million t in 2021-2023), reflecting both a slight increase in the area dedicated to maize and an increase in yields. However, barley production could decline by -3.4% to 49.1 million t in 2035 (compared with 50.9 million t in 2021-2023), as the reduction in area is unlikely to be offset by yield improvements.

Decreasing use of feed, higher food demand and trade

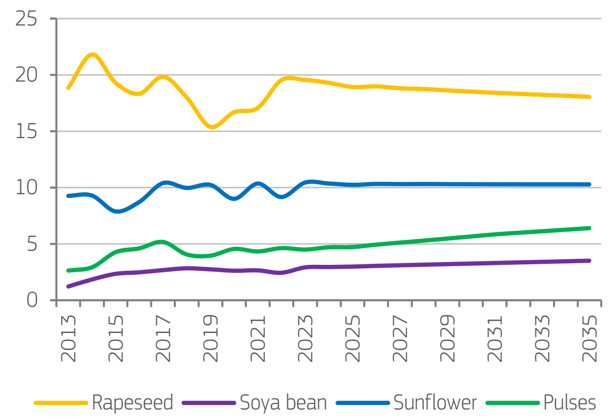
The EU's use of cereals in animal feed is expected to drop to 152.1 million t in 2035 (-3 % compared with 2021-2023). At the same time, human consumption of cereals is expected to reach 61.5 million t in 2035 (+1.4% compared with 2021-2023), in part due to shifts towards more plant-based diets. On the trade side, traded volumes of wheat, barley and maize could increase to 60.5 million t in 2035 (+14.6% compared with 2021-2023). Net imports of maize are forecast to decline to 13.5 million t in 2035 (-13.6% compared with 2021-2023), while imports of durum wheat are expected to decline to 1.7 million t in 2035 (-16.8%). On the more positive side, growth in net exports is forecast for soft wheat and barley, to 33.5 million t and 10.2 million t in 2035, respectively (both up +21% compared with 2021-2023).

OILSEEDS and PROTEIN CROPS

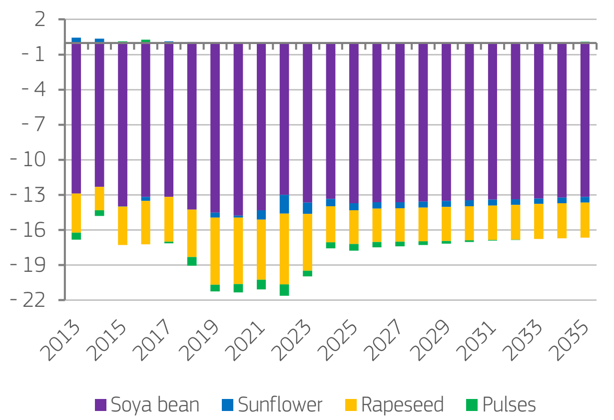
GRAPH 2.7 EU oilseed and protein crop yields (t/ha)



GRAPH 2.8 EU oilseed and protein crop production (million t)



GRAPH 2.9 EU net trade of oilseeds (million t, exports-imports)



Stable yields despite climate change and fewer inputs

EU oilseed yields are forecast to remain stable. As for cereals, it is forecast that the negative effects (in particular from climate change, the expansion of organic production, and constraints on the availability and affordability of some inputs) will be partially offset by yields increasing thanks to sustainable practices such as precision farming, crop rotation and improved soil health. Some new technological improvements will also be made available by 2035. The yield gap in rapeseed and soya beans between EU countries is forecast to decrease, while sunflower yields in the countries entering into the EU in 2004 and after, are expected to surpass those of the rest of the EU by 2035.

Pulses and soya beans are set to increase the most

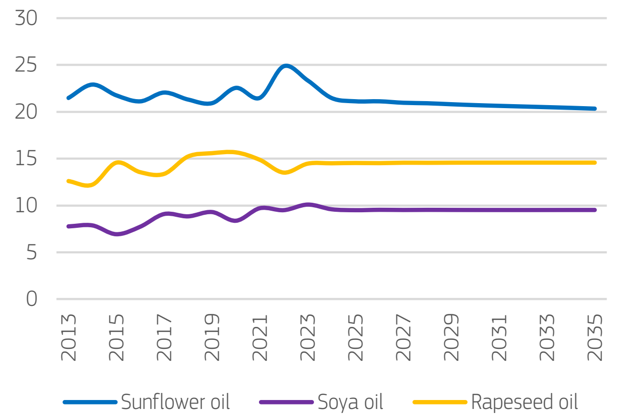
Production of oilseeds and protein crops is expected to increase to 31.8 million t in 2035 (+0.4 million t compared with 2021-2023 average). The reasons for this expansion include supportive EU policies for protein crops, changing agricultural practices (crop rotation), the EU's agricultural research and innovation programmes and increasing demand for plant proteins which will be especially positive in boosting demand for pulses. Although rapeseed production is forecast to decline by 3.2% by 2035 (from 18.7 million t in 2021-2023), sunflower production is forecast to increase by 3% (from 10 million t in 2021-2023). The expansion of oilseed production is expected to be driven by 30% increase in soya bean production (from 2.7 million t in 2021-2023), driven by expectations of an increase in labelled products (GM-free) and a push for deforestation-free soya beans, and by 42.2% increase in the production of pulses (from 4.5 million t in 2021-2023). Producer prices of oilseed and protein crops are forecast to decline after reaching a peak in 2021-2023. They are then expected to start growing again albeit at a much slower pace (0.9% per year).

Imports of oilseeds and protein crops are set to decline

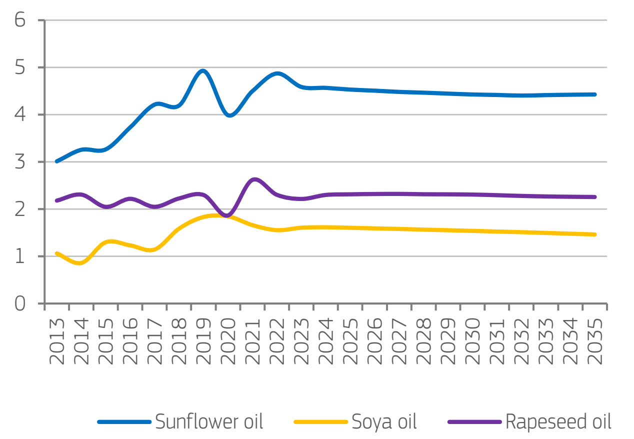
The EU is expected to remain a net importer of oilseeds and protein crops through to 2035, although growth in imports is expected to taper off between now and then, with net imports of oilseeds expected to decline from an average of 22 million t in 2021-2023 to 18.3 million t in 2035. This is due to increased production and lower domestic demand. Over the same period, imports into the EU of pulses are expected to decline from an average of 1.3 million t in 2021-2023 to small exports of 0.1 million t in 2035, driven by increased domestic production. Human consumption of pulses in the EU is also expected to increase (by 61 % between 2021-2023 and 2035), but feed will remain the main use of pulses with 3.5 million t used for feed in 2035 compared to 2.8 million t used for food.

OILMEALS and VEGETABLE OILS

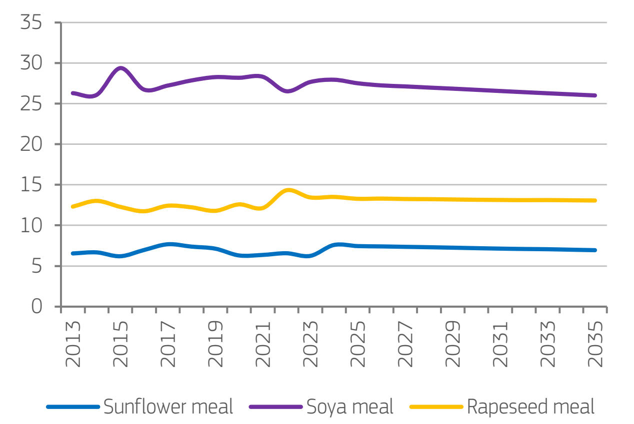
GRAPH 2.10 EU oilseed crushing (million t)



GRAPH 2.11 EU food use of oilseed oils (million t)



GRAPH 2.12 EU feed use of meals (million t)



Crushing rates are set to remain stable but composition changes

When crushing oilseeds, two products are obtained: oilmeals (plant proteins mostly for animal consumption) and vegetable oils (which can be used for food, feed or industrial uses). EU oilseed crushing volumes are forecast to decrease to 44.4 million t in 2035 (-2.8 million t compared with the historically high 2021-2023 average). However, within the oilseeds category, the crushing composition will change as the crushing of sunflower seeds and soya beans is expected to decline by -12.4 % and -2.5 %, respectively between now and 2035, while the crushing of rapeseed is expected to increase by 2%. Lower imports could lead to more crushing of domestically produced oilseeds. The forecast decline of sunflower seed crushing is due to expectations of lower imports driven by less demand for biofuels, feed and vegetable oil.

Use of oilseed oils for food and biofuel is set to decline

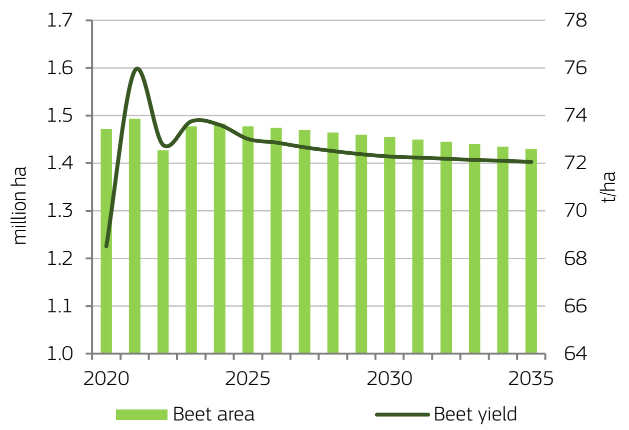
The use of oilseed oils in the EU is expected to decline from an average of 16.5 million t in 2021-2023, to 15.4 million t in 2035. The use of oilseed oils for food (which accounts for about 53% of all uses) is forecast to decline by less (-0.25% per year from 2023) than the use for biofuels (-1.2% per year from 2023). This trend will be driven by a growing consumer preference for other types of oil (e.g. olive oil) and by diminishing demand for biodiesel. Within the oilseeds category, food use of sunflower oil is forecast to decrease the most (by -0.3 million t), followed by rapeseed oil (-0.2 million t) and soya oil (-0.1 million t). Further reduction in the use of palm oil is expected, both for food (-19.2%) and for biofuel (-72%).

Feed use of oilmeals to decline, with the exception of sunflower meal

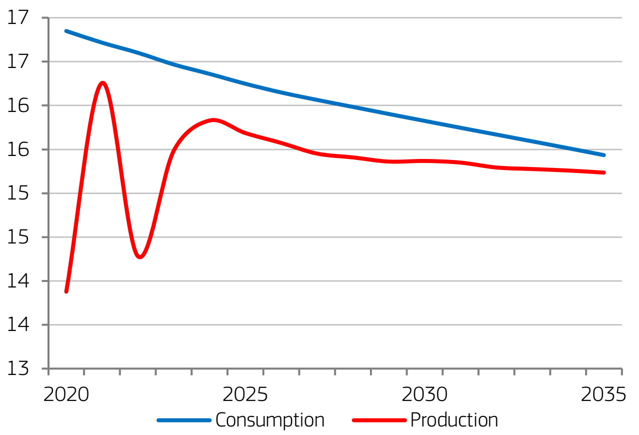
Because of lower demand for animal feed, the use of oilseed meals in the EU is expected to decrease to 46.1 million t in 2035 (-2.4% compared with 2021-2023). In addition to forecasts for fewer animals, this decline is also expected to be caused by improved feed conversion (especially in pigmeat production), advances in animal breeding, and reduced demand for high-protein feed in cases where organic livestock production replaces the conventional livestock production. The biggest reduction is expected for soya meal (-5.4 %), followed by rapeseed meal (-1.7% between now and 2035) while demand for sunflower meal will increase (+8.7%).

SUGAR

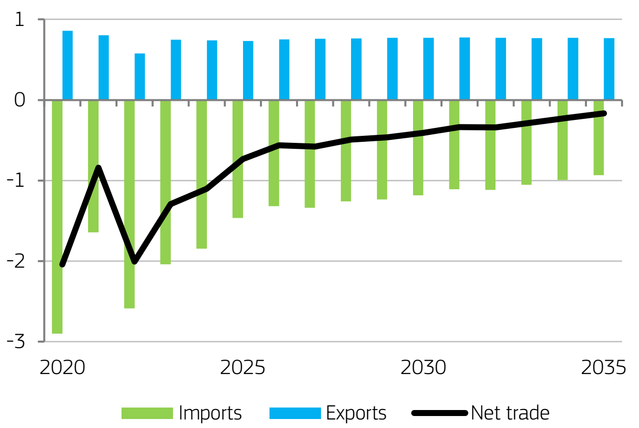
GRAPH 2.13 EU sugar beet area (million ha) and beet yield (t/ha)



GRAPH 2.14 EU sugar production and consumption (million t)



GRAPH 2.15 EU sugar exports and imports (million t)



Pressure on beet area and yields is set to limit sugar production

The total agricultural area in the EU given to sugar beet is expected to stabilise at around 1.48 million ha at the beginning of the Outlook period, supported by historically high sugar prices. These prices are expected to subsequently recede from these levels, and competition for land use by other crops is expected to increase, so the area given sugar beet is expected to slowly decrease to 1.43 million ha by 2035. Sugar beet yields are expected to slowly decline due to more frequent negative weather events and the reduced availability of plant-protection products. Later in the 2023-2035 period, as alternatives to the banned neonicotinoid substances are expected to be made available on the market, the decline in sugar beet yields is expected to slow down. By 2035, the EU's average sugar beet yield is projected to stabilise at 72 t/ha. As a result of changes in area and yields, EU sugar production is expected to slowly decrease, from an average of 15.7 million t in 2024-2026 to 15.3 million t in 2035.

The decline in EU sugar production is expected to be partially offset by an increase in isoglucose production, which is projected to increase from under 0.6 million t currently to 0.8 million t in 2035. Nevertheless, the growth in demand for isoglucose could be limited by reduced food demand and greater competition from other sweeteners.

Consumption declines will be driven by changing consumer preferences and declining population

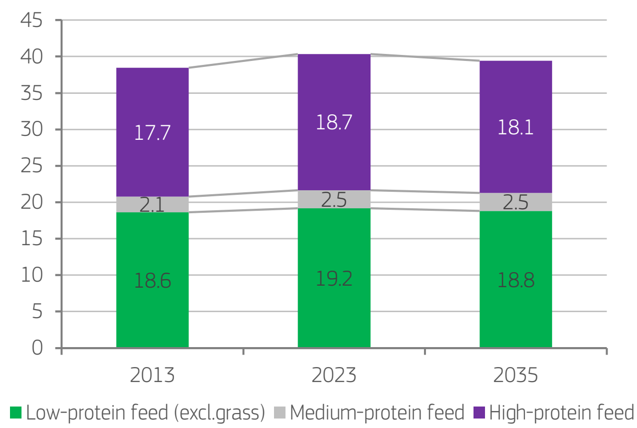
EU sugar consumption has been decreasing steadily for many years, largely because of consumers shifting to diets with lower sugar intake, especially through reducing consumption of high sugar content products. Given the expected decline in the EU population and the sustained trend of declining per capita sugar consumption, the downward trend for EU sugar consumption is expected to continue between now and 2035. Therefore, EU sugar consumption is expected to decrease annually by 0.7 % (0.6% per capita) and reach 15.3 million t in 2035.

The EU remains a net importer of sugar

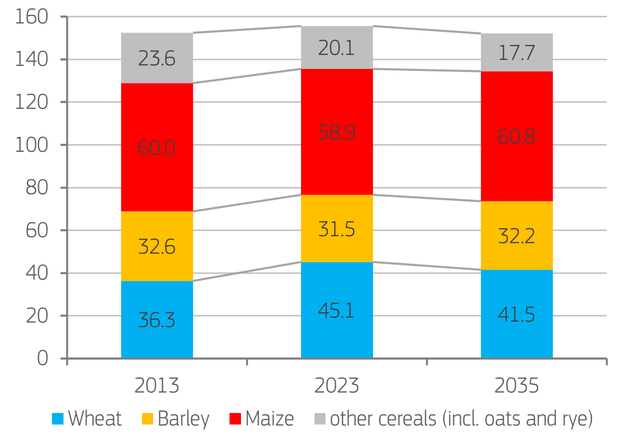
Soon after the decline in EU sugar production that followed the end of the production quota system, the EU became a net importer of sugar. By 2035, this position is expected to continue, but the EU's reliance on imports could decline. EU sugar exports have hit a record low in recent years but are expected to continue serving demand in the traditional export markets. Imports, on the other hand, are expected to decrease to under 1.0 million t by the end of the projection period, as sugar consumption in the EU is projected to decline faster than production.

FEED

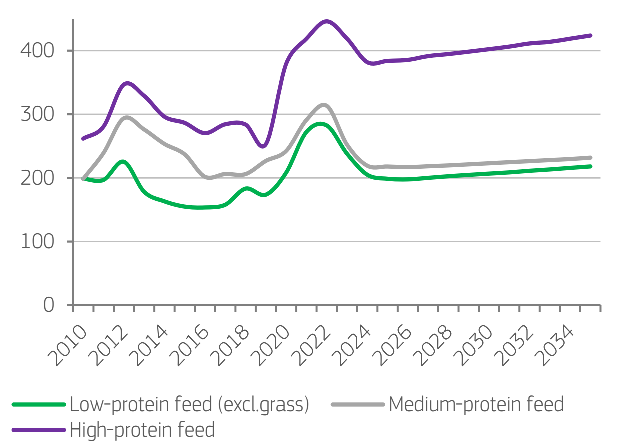
GRAPH 2.16 EU total feed demand (million t of protein equivalent)



GRAPH 2.17 EU total cereal use in feed (million t)



GRAPH 2.18 EU nominal feed prices (EUR/t)



Lower demand for feed but more efficient use

Overall demand for animal feed in the EU is forecast to fall by -3.5 % by 2035 (measured in million t of protein equivalent). This forecast reduction is mainly due to an expected decline in the EU's production of pigmeat, beef and a slower growth of milk yields. A drop in the production of crop-based feed is also expected due to both a shift to more grass-based (extensive) production systems, and more efficient feed-conversion ratios. These ratios are likely to be improved via genetics, more efficient and better-targeted feeding systems. The decline in pigmeat, beef and milk production should be partly offset by projected growth in the poultry and egg sectors. EU countries with lower productivity in these sectors are continuing to close the gap with countries with more efficient - and usually more intensive - production systems, although these trends are slowing down. At the same time, there is also an increasing push both for further extensification of agriculture, and towards other non-conventional production systems (such as organic and GM-free).

Use of high-protein feed is set to decline the most

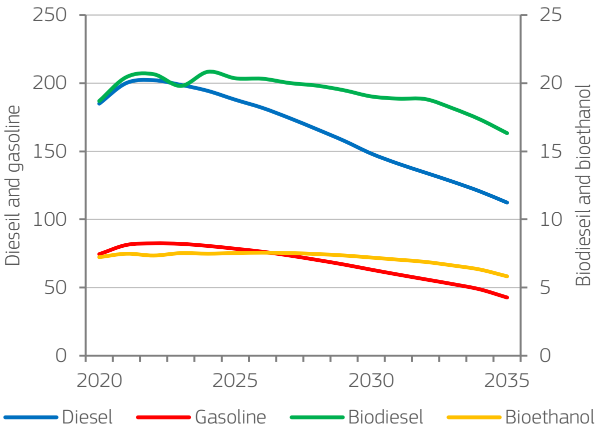
Of the different types of feed, demand for high-protein feed is falling the fastest (demand is set to fall 6% by 2035 compared with 2021-2023), followed by medium-protein feed (-2% reduction in demand compared with 2021-2023). High-protein feed (over 30% protein content), includes oilmeals, fish meals and skimmed milk powder. The reduction in use of high-protein feed is motivated by lower demand due to consumer concerns about both the environment (such as deforestation) and the climate more generally (such as concerns around imports of soya meals for use in feed). Demand for low-protein feed (with less than 15 % protein content; excluding grass) is forecast to decline -1.3% by 2035 compared with 2021-2023 average. Its forecast decline is caused by the decreasing use of cereals in feed (demand for which is expected to fall by 4.8 million t by 2035), especially of wheat (-1.5 million t) and of other cereals such as oats and rye (-3.3 million t).

Feed prices to come down except for high-protein feed

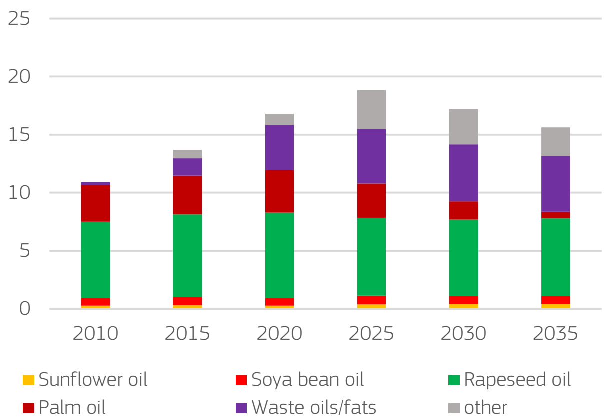
As most cereal prices peaked in 2021-2022, prices are expected to decline between 2024 and 2025 and then remain relatively stable. The price of low- and medium-protein feed is expected to follow this trend and to level out to just above pre-COVID-19 prices from 2025. High-protein feed prices peaked once in 2019-2021 and again in 2021-2022, following the rapid pattern of price increases in rapeseed and sunflower seed in 2020-2021 and the sustained increase in soya bean prices in 2020-2023. The steep price increases are expected to combine with higher demand for oilseed and protein crops until 2035, which could keep prices for high-protein feed above the pre-COVID-19 levels.

BIOFUELS

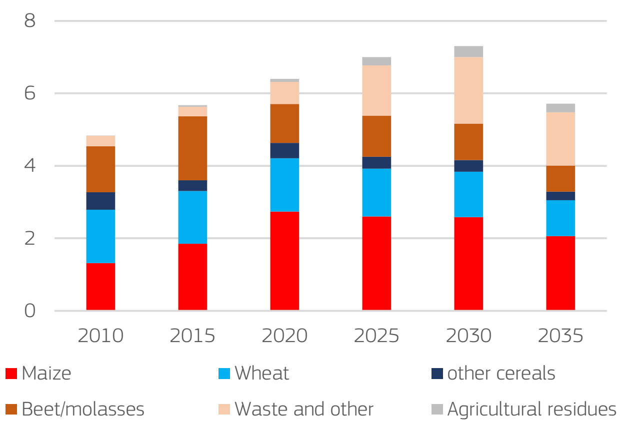
GRAPH 2.19 Use of EU conventional fuels and biofuels (billion l)



GRAPH 2.20 Use of EU biodiesel feedstock (billion l)



GRAPH 2.21 Use of EU ethanol feedstock (billion l)



Demand for biofuels expected to decrease as the decarbonisation of road transport accelerates

Assumptions for gasoline and diesel consumption are taken from the National Energy and Climate Plans' scenario of the POTEnCIA model. This represents a 'current policies' scenario, and takes the latest 'Fit for 55' legislation into account, including the new edition of the Renewable Energy Directive (RED III) and the 2035 deadline to phase out sales of cars and vans with internal combustion engines. Projections for gasoline and diesel consumption in road transport after 2035 is the result of the continuation of both these polices and assumed trends in the improvements of autonomous efficiency.

Compared with the 2021-2023 average, the use of diesel in road and rail transport in the EU is expected to fall by 44 % in 2035 to 112 billion l, and the use of gasoline by 48 % to 43 billion l. Demand for biofuels is directly linked to both demand for road transport fuels, and the obligatory fuel-blending rates. The projected increases in these rates are expected to maintain demand for biodiesel at more than 20 billion l per year until 2027, after which the rate is expected to start declining and reach 16.3 billion l by 2035. Demand for bioethanol is also expected to be stable at around 7.5 billion l per year until 2028, before falling to 5.8 billion l per year by 2035.

Advanced biofuels are set to increase their share, while crop-based biofuels are capped

The use of crop-based feedstock for the production of biofuels is limited by a cap set in 2020. At the same time, the use of advanced biofuels is being incentivised by increasing mandates laid down in RED III and double counting. On biodiesel feedstock, the share of palm oil is expected to fall from 21 % in 2020-2022 to just 4 % in 2035, as many EU countries are phasing out this feedstock due to sustainability concerns. The use of other vegetable oils (primarily rapeseed oil) is expected to remain relatively stable at around 50 % of (reduced) biodiesel feedstock, while the share of advanced biodiesels is expected to grow from 32 % in 2020-2022 to 46 % in 2035. The share of waste oils and fats is also set to rise over this period, from 24 % to 31%, while the share of other advanced biodiesels is set to increase from 8 % to 16 %.

For ethanol production, maize is projected to remain the principal feedstock, but its share is expected to fall from 42 % in 2020-2022 to 36 % in 2035, while the share of wheat is expected to decline from 21% to 17%. The total share of crops (cereals, sugar beet and molasses) in ethanol feedstocks is expected to fall from 86 % in 2020-2022 to 70 % by 2035. At the same time, the share of advanced biofuels, including bioethanol from waste and residues is expected to grow from 14 % to 30 %.

MILK AND DAIRY PRODUCTS

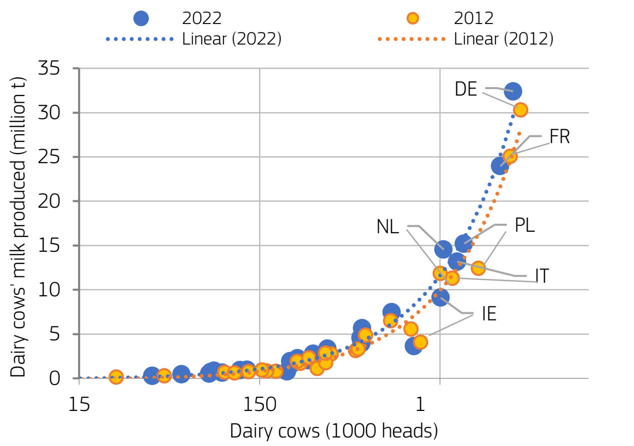
/3

This chapter presents the drivers of the EU dairy market and introduces projections for EU milk production and dairy products in more detail. The presented outlook takes into account developments towards a more sustainable and segmented dairy market which could add value to the sector through both domestic consumption and exports.

On the other hand, the outlook presented in this chapter also reflects the increasing pressure from national and EU environmental policies which could lead to some production declines. To cope with these challenges and reflect an expected increase in the added value of milk and dairy products, the raw milk price in the EU is likely to increase in the future.

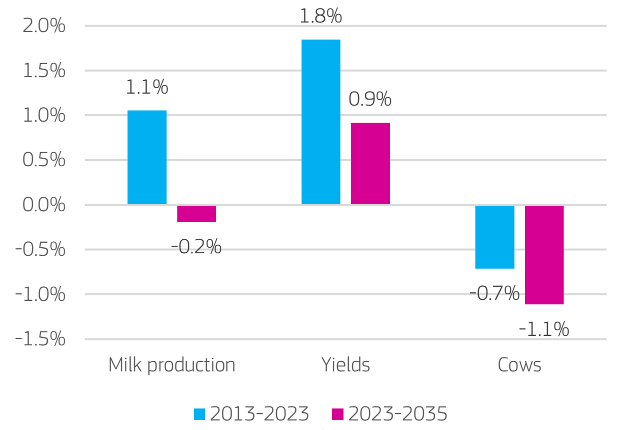
MILK

GRAPH 3.1 Productivity increase by EU countries between 2012 and 2022

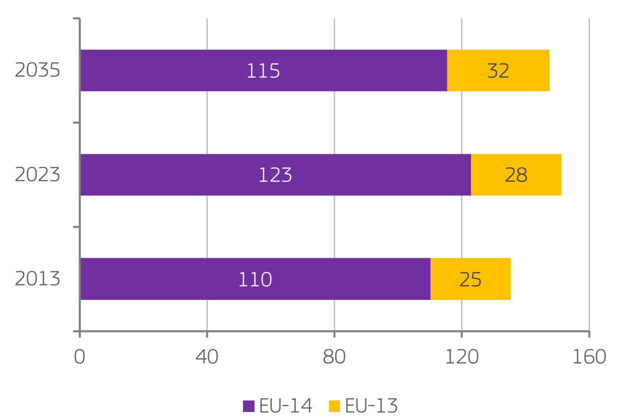


Note: for comparison purposes between the periods, RO and LU were excluded. Trend lines indicate the increase in EU milk yield.
Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 3.2 Developments in EU milk production, yield and dairy cows' numbers



GRAPH 3.3 Milk production in EU-14 and EU-13 countries, in selected years (million t)



Note: EU-13 countries which entered into the EU in 2004 and later.

The EU dairy sector is proving its resilience

The EU's milk and dairy sector showed remarkable resilience in the last few years when many significant disturbances tested the sector. The COVID-19 pandemic caused changes in the demand for dairy products, globally. Furthermore, geopolitical tensions have led to increasing input costs (energy, feed, fertilisers, transport), high food-price inflation that exceeded the level of general inflation in most EU countries, and high interest rates, which negatively affect the investments often required for productivity improvements. In some EU countries, the dairy sector is also challenged by long-term structural problems, difficulties with generational renewal, and a lack of workers. At the same time, there is increasing policy and legislative pressure for a greater contribution from the livestock sectors to reach ambitious national and EU-wide environmental objectives, and to further increase animal welfare standards.

Despite the above difficulties, EU milk deliveries steadily increased in the last decade, and the EU preserved its position as a world-leading dairy exporter. The increase in yields is also expected to continue in the coming years albeit at a slower pace than in the past. Many of the drivers that have led to a highly specialised and efficient EU dairy production system are either reaching a tipping point (for example, the closure of the productivity gap between the EU countries has slowed down) or could be counter-balanced by new drivers (for example, extensive, low-input, organic and other alternative livestock production systems that would limit growth in average milk yields).

EU milk production is now at a turning point and is headed towards increasing sustainability

Sustainability drivers will continue to shape EU milk production in the next years. High quality standards, sustainability standards and diversified production systems (e.g. organic, quality schemes) will also generate more added value in the sector. Expectations for stricter EU and national environmental policies will likely force the EU dairy herd to shrink (-13 % by 2035 compared with the 2021-2023 average). Social sustainability considerations, such as more attention being paid to animal welfare (and thus better animal health and well-being), could also contribute to increasing yields to some extent. However, yield growth is expected to slow down (0.9 % per year), reaching only half the growth rate seen in the past decade. The underlying drivers of growth in milk yields in the past (i.e. productivity gap and the ending of other structural differences between EU countries) are gradually becoming less impactful. As a result, EU milk production could decline by 0.2% per year on average between now and 2035

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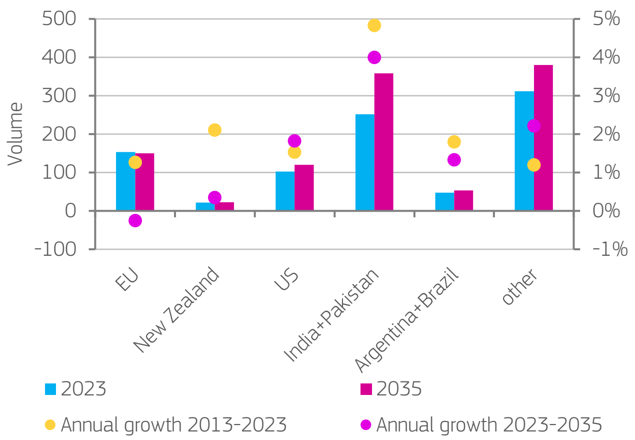
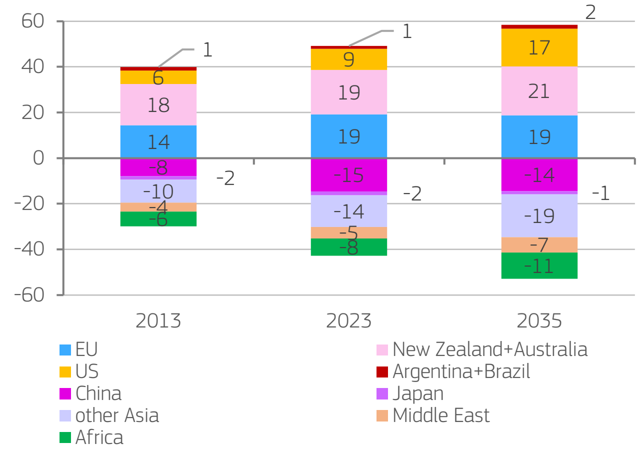
GRAPH 3.4 Milk production volume (million t) and growth rates (%) in given period for selected countries

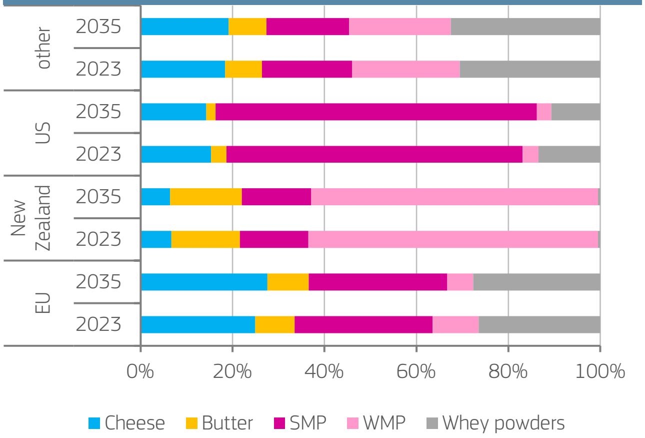


GRAPH 3.5 Milk surplus and deficit in selected countries and regions (million t of milk equivalent)



Note: surplus/deficit is calculated as domestic consumption- domestic production

GRAPH 3.6 Trade shares of main dairy exporters in selected dairy products



Global growth in milk production is expected to shift

The growth in global milk production will increase at a similar rate as in the last decade (1.6 % per year). Although the EU contributed substantially to this past growth, future increases in global milk production will likely be driven by other countries and regions as some larger consumer countries are set to increase their efforts to become more self-sufficient. For example, south-east Asian and north African countries are expected to increase their milk production by around 3 % per year by 2035. While around 8 % of the milk remains traded, the additional production capacities in Africa and Asia will be mostly absorbed by domestic markets. Population and economic growth remain the key drivers of growth. In China, however, population growth is expected to halt, slowing down the demand growth of the past decade. Any dynamic increase in Asian dairy consumption in the future will likely come from the south-east Asia region.

The EU remains the world's largest exporter

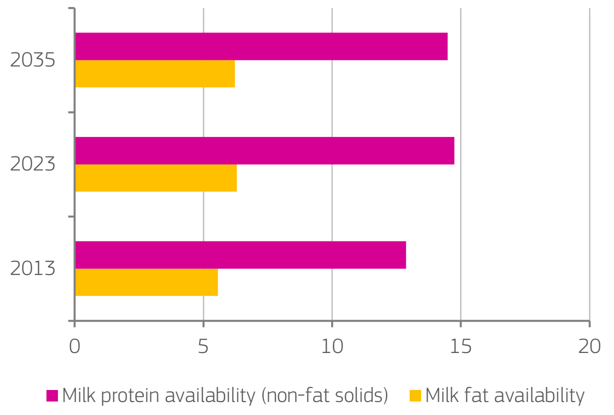
Despite increasing self-sufficiency rates, the main importing countries will still need to import dairy products to satisfy their domestic demand. Nevertheless, growth in total global imports of dairy products is expected to slow down to roughly 2 % annual milk deficit growth between 2023 and 2035, compared with 4 % in the past decade. The EU and New Zealand will remain the world's top two exporters of dairy products, with each accounting for around 24 %. The EU is expected to keep its export volumes stable despite the decreasing milk production. The increase in New Zealand's milk production will also likely slow down, as the potential growth in milk yields is limited in grassland-based systems, and increasing pressure from environmental policies disfavours a larger cow herd. US production, facing less strict sustainability constraints, will grow the most among the large dairy exporters and reinforce its third position as global dairy exporter (20 % share of global exports in 2035, compared with 14 %). Argentina could also strengthen its exporter position.

Differentiation of global imports set to support EU trade

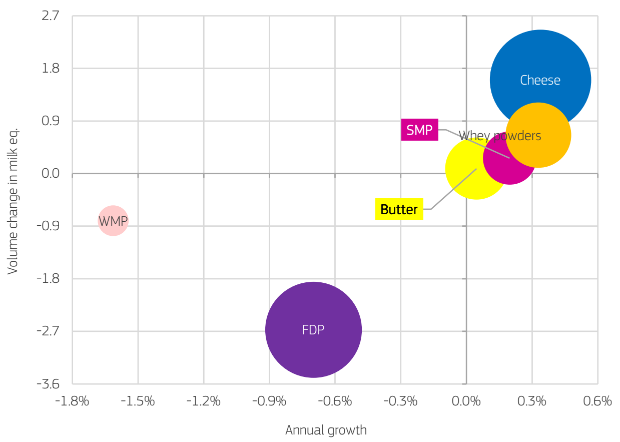
The expected slowdown of global growth in imports of dairy products will mostly impact milk powders. As they are mainly used as an input for processing, increasing milk production in the main importer regions will slow down the strong import growth achieved in past, for both skimmed and whole milk powders. By contrast, cheese, and whey exports could grow at a similar rate as in the last decade, while global butter exports could grow even more quickly. These market developments are likely to affect the main exporter countries in different ways. For example, New Zealand will likely be the most impacted by decreasing demand in China, potentially leading to some changes in their export portfolio. Apart from the above trends in traded volumes, the product portfolio of EU exports will also need to adapt to changing global demand, driven by demographic trends (e.g. an ageing population) and income growth, both favouring dairy products of a higher added value.

DAIRY PRODUCTS

GRAPH 3.7 Availability of milk fat and milk protein in the EU (million t)

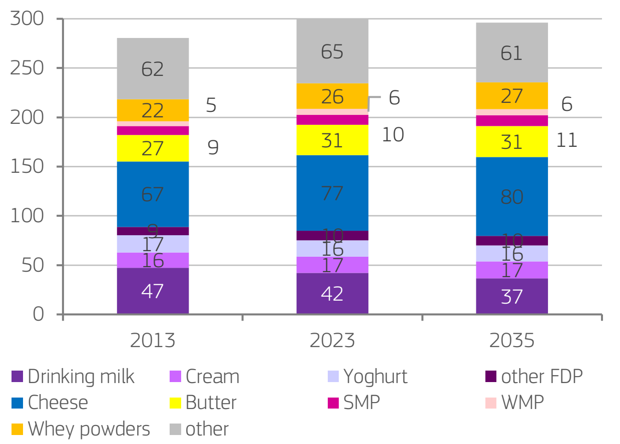


GRAPH 3.8 EU production of selected dairy products change (million t of milk equivalent) and annual growth (%) in 2023-2035



Note: sizes of circles correspond to the volume of milk (in milk equivalent) used for their production in 2021-2023

GRAPH 3.9 EU per capita consumption total and selected dairy products (kg of milk equivalent)



Only limited growth in milk solids

Feeding strategies and some herd replacement (e.g. more dairy cow breeds offering more butterfat and protein content) could still help milk content improve. However, the progress of the past decade is likely not to be repeated, as it was mainly driven by EU countries with dairy herds composed of cows producing milk with a higher milk solids content (e.g. Austria, Denmark and Ireland). On the other hand, climate change induced fluctuations in feed availability, feed quality and caused heat stress to cows. These factors could contribute to reduced milk solids also in the future. Overall, despite a slight increase, the greater availability of milk solids cannot compensate for the reduction in EU raw milk supply, leading to a forecast of 1% decrease in milk fat and an almost 2% decrease in non-fat solids by 2035.

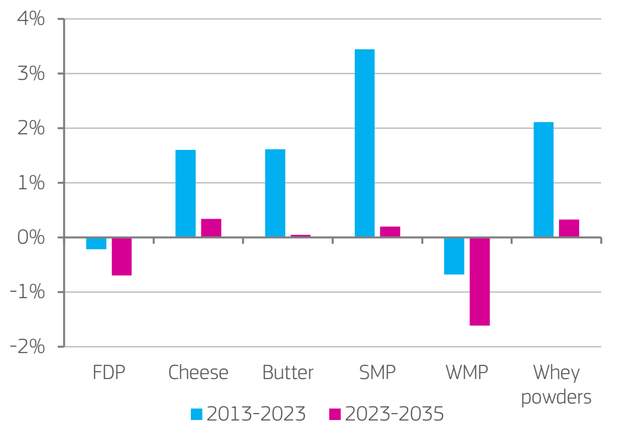
Cheese and whey are set to remain the preferred production stream

The portfolio of EU dairy products will have to adjust to this. The main drivers of change in the EU's dairy industry include changes in consumer preferences, competition with other global suppliers and increasing processing costs, which reduce margins for traditional dairy products and force processors to produce more - and higher value added - commodities. The cheese and whey production stream are expected to grow by around 2.3 million t of milk equivalent and could absorb 36 % of the EU milk pool by 2035. Skimmed milk powder (SMP) could achieve a limited growth (+2.3 % by 2035 compared with 2021-2023), and butter production could remain stable, while other dairy products are likely to decline for different reasons. For example, production of whole milk powder (WMP) is expected to decline, mostly due to decreasing EU competitiveness; while the consumption of drinking milk is likely to continue its long-term declining trend. And whey products are affected by reduced global demand, due to increasing domestic production in China.

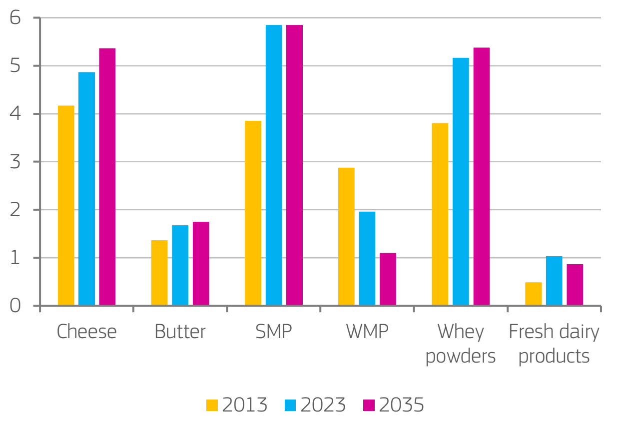
Fortified and functional dairy products on the rise

The domestic market remains the most important outlet (set to account for 88 % of EU milk production in 2035). And EU per capita consumption of dairy products will likely remain stable (falling by only -0.1 % per year by 2035), relative to high level achieved in 2021-2023. Changing consumer preferences will continue affecting dairy consumption. Younger consumers are expected to opt for dairy products with lower fat and sugar content or products addressing food intolerances (e.g. lactose intolerance). Lifestyle choices and the health requirements of an ageing population will likely further increase demand for fortified (with vitamins and minerals) and functional products (addressing specific nutritional needs) and plant-based alternatives.

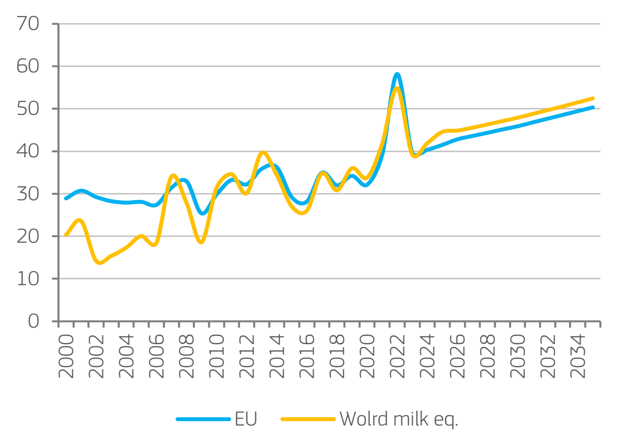
GRAPH 3.10 Annual change in use of selected dairy products in the EU



GRAPH 3.11 EU exports of selected dairy products (million t of milk equivalent)



GRAPH 3.12 Raw milk prices in the EU and world (EUR/100 kg)



Cheese market set to continue growing

Cheese is, and will likely remain, the EU's flagship export product, with exports further increasing (by 0.8 % per year between now and 2035). EU consumption could also increase (by 0.3 % per year), relative to already-high levels in 2021-2023, although recent food-price inflation has slowed down the post-COVID-19 recovery to some extent. Within the fresh dairy products (FDP) category, drinking milk consumption is also expected to further decline in coming years. And the consumption of yoghurts and cream could remain stable, or even slightly increase, in part due to novel product lines that address consumer interest in fortified (e.g. yoghurts with added proteins) or convenience products (e.g. drinkable yoghurts). However, total FDP consumption in the EU is to decline (by -0.7 % per year between now and 2035), while exports of FDP will likely decrease after the high levels of 2021-2023, in part due to decreasing demand in China. EU consumption and exports of butter are expected to remain relatively stable, due to strong demand from the processing. However, butter could face greater competition from other (vegetable) fats in home cooking and foodservice (e.g. olive oil).

More value added for EU whey powder production

The prospects for EU whey powder production are set to be boosted by strong global demand, driven by increasing food use and new product lines covering nutritional or health functions. EU whey production could increase by 0.3 % per year between now and 2035, while EU whey exports could increase by 0.4% per year over the same period. Competition on global markets is expected to increase for SMP, but EU production and exports are expected to remain stable. At the same time, domestic use could grow by around 0.4 % per year by 2035. These market developments are forecast to gradually alter the formerly export-oriented SMP market in the EU, increasing the share of domestic use. Both reduced global demand and low EU competitiveness are set to contribute to a production decline in WMP (-18 % by 2035, compared with the relatively low level in 2021-2023), with EU WMP exports likely to experience a pronounced fall of 5 % annually. However, domestic use of WMP could remain stable, supported by food processing. Overall, while total EU dairy exports are forecast to remain stable in volume terms, they are still expected to increase in value. This is partly due to expectations for a greater share of added-value products in the export portfolio, and partly due to rising export prices.

EU raw milk price reaching a new, higher, equilibrium

Dairy prices are likely set to follow an increasing path after they have decreased rapidly in the first half of 2023 following the historical high of 2021/2022, and the EU raw milk price is expected to remain well above pre-2022 levels by 2035. However, this will largely be due to the inflationary effect, and the price development in real terms will likely remain rather flat. EU cheese prices are expected to increase the most of the dairy products, while EU butter and SMP prices could also significantly increase.

MEAT PRODUCTS

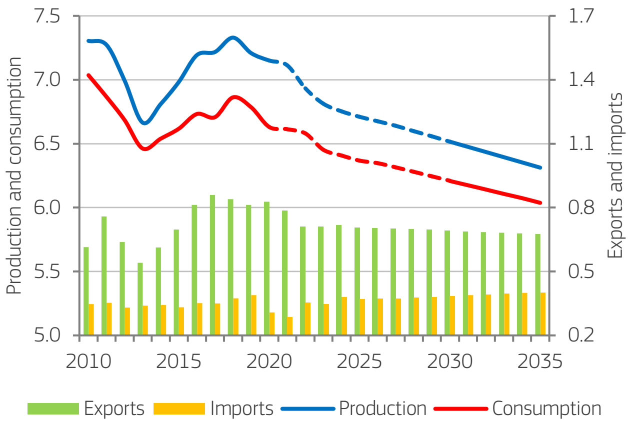
/4

This chapter presents the drivers of the EU's meat markets, and introduces projections for beef and veal, pigmeat, poultry, sheep and goat meat. The presented outlook considers sustainability and societal concerns which look set to take a more prominent role in shaping the production and consumption of meat in the EU.

However, the spread of animal diseases, geopolitical conflicts and certain free-trade agreements under negotiation could be considered as introducing a significant source of uncertainty which might alter the prospects for the EU's trade relations. EU prices for meat products will generally be increasing and continue to reflect increasing production costs, lower supply and changes in world prices.

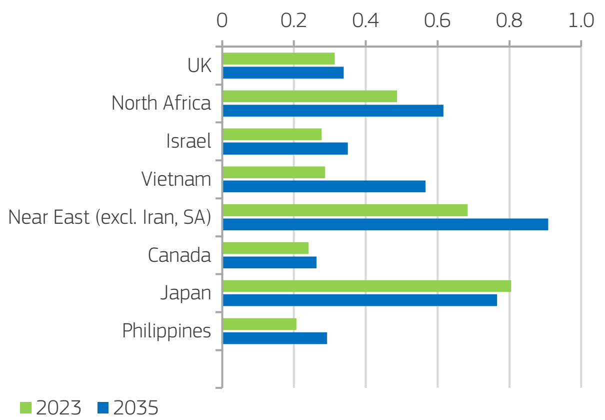
BEEF AND VEAL

GRAPH 4.1 EU beef and veal market balance (million t)

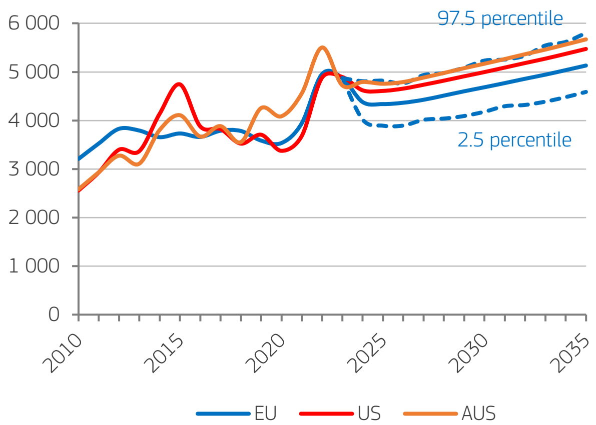


Note: Production corresponds to gross indigenous production; trade includes live animals.

GRAPH 4.2 Beef imports to main EU partners (million t)



GRAPH 4.3 Beef prices (EUR/t) and uncertainty range



Note: non-EU beef prices are based on the World Bank commodity prices' publication and on the OECD-FAO Outlook period.

Beef production and consumption will continue to fall

EU beef production is expected to continue declining and will fall by 0.6 million t by 2035 (-9.2 % compared with the 2021-2023 average). At the same time, the EU cow herd is set to decrease by 3.4 million heads over this period (-11%). The dairy herd should decline progressively while the suckler cow herd is set to decrease to 9.5 million heads by 2035 (-900 000 heads or -8.6 % compared with 2021-2023), due to low profitability and a stricter regulatory framework, in particular on environmental aspects. However, this decline may hide opposing developments in EU countries. Coupled income support and certain eco-schemes under the new CAP, together with a relatively favourable price outlook will only slow down this declining trend, not reverse it. The average slaughter weight is expected to continue its slightly upward trend thanks to better feed and herd management, and a larger share of beef-type animals in the productive herd. However, a shift to organic and more extensive production systems may partially counteract this trend. EU beef consumption decreased in 2023 because of high prices, low EU supply in addition to a growing negative perception due to sustainability concerns. This downward trend is likely to be sustained. As a result, by 2035, per capita beef consumption may drop from 10 kg per year to 9.5 kg per year (-6.9 %).

Greater exports of meat are set to offset the decline in exports of live animals

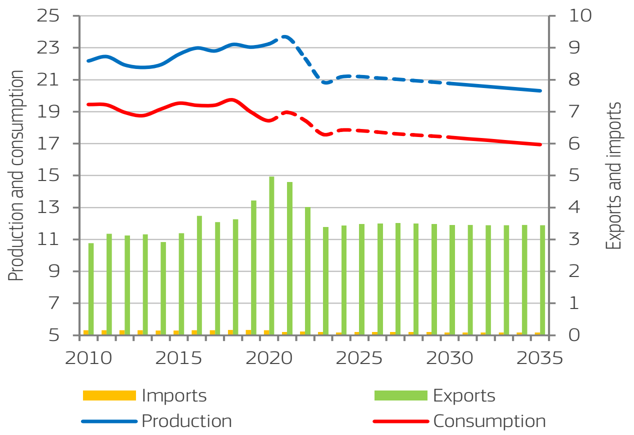
Global import demand for beef will increase by 2.1 million t between 2021-2023 and 2035, mainly due to a greater demand from China, Vietnam and sub-Saharan Africa. EU exports of live animals are expected to decline gradually over this period (-3.1 % per year) due to increased competition and concerns about animal welfare in long-distance transport. However, EU meat exports are due to continue growing slowly by 2035 (+0.2 % per year), mainly thanks to continued or rising demand from trade partners. The EU will keep exporting - mainly to high-value markets in neighbouring countries (UK, Switzerland, Norway) and to countries with whom the EU has concluded free trade agreements (e.g. Japan and Canada). After rebounding in 2022, EU beef imports declined in 2023 due to limited supply from the UK. In the coming years, imports of beef to the EU will slowly increase and reach 400 000 t by 2035 due to limited EU supply. This will include some out-of-quota imports.

Beef prices expected to reach around EUR 5 100/t

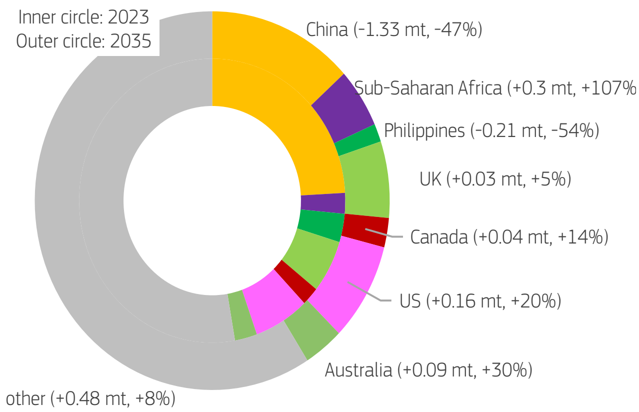
After the period of high beef prices in the EU in 2022-2023, prices are expected to come down in the next years due to a better balance between supply and demand in the EU. Nevertheless, increased production costs in the EU and a declining output of beef may result in prices settling at a higher level than in the past, reaching around EUR 5 100/t by 2035.

PIGMEAT

GRAPH 4.4 EU pigmeat market balance (million t)

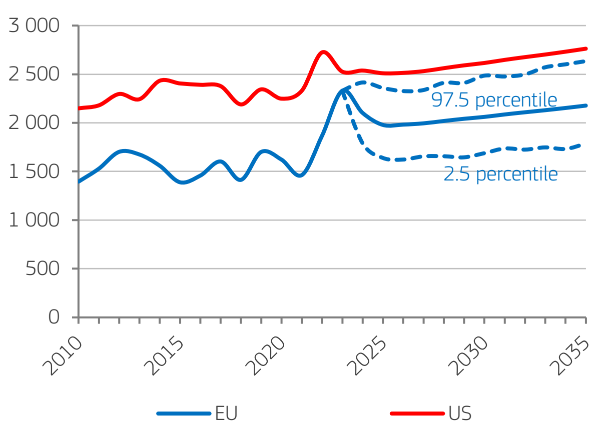


GRAPH 4.5 Shares of selected pigmeat importers in global imports



Note: Sub-Saharan Africa includes South Africa.

GRAPH 4.6 Pigmeat prices (EUR/t) and uncertainty range



Pigmeat production on the decline

Intensive pigmeat production systems are likely to face further societal criticism in the coming years. African Swine Fever (ASF) is assumed to be present in the EU, but no major or uncontrolled outbreaks are expected. Combined with stricter implementation of environmental laws in certain EU countries and declining export opportunities, these trends act to reduce production. An expected decline in the sow herd will likely be offset in part by increased carcass weights. Therefore, EU pigmeat production is projected to fall by 0.9 % per year between now and 2035 (or almost 2 million t compared with 2021-2023).

In the EU, environmental and societal concerns will continue to negatively affect consumer preferences for pigmeat. In addition, also because of the relatively higher fat composition compared to other meats which could be perceived negatively by consumers. Therefore, EU per capita consumption is projected to decrease by 0.7 % per year, falling to 29.7 kg in 2035 (a drop of -7 % compared with the already-low levels recorded in 2021-2023.

Pigmeat exports are set to decrease as Asian production recovers

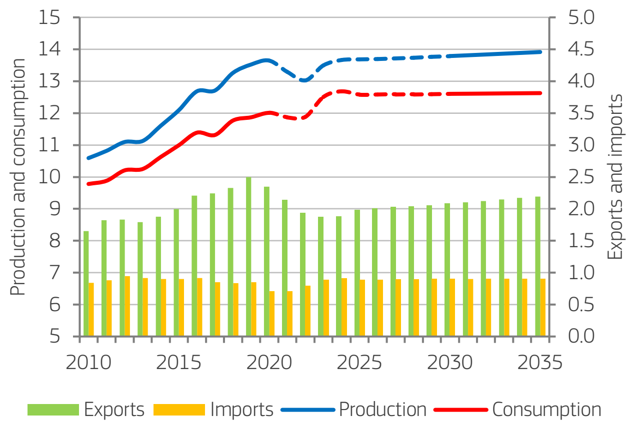
Production capacity in China, the Philippines and Vietnam is expected to recover sooner than expected, leading to lower import demand, despite the expected continuation of ASF outbreaks. In contrast, there may be increased demand for imports in the US, Australia, sub-Saharan Africa, some other regions in Asia, and neighbouring European countries Over the coming decade, the UK could become the largest single export destination for EU pigmeat. The combined effect of these developments means that although EU exports increased in the previous decade, they are projected to decrease in the coming years and then stabilise at a slightly lower level by 2035 (- 620 000 t between 2021-2023 and 2035). The EU will also need to strengthen and diversify its pigmeat export portfolio in the coming years. Pigmeat imports to the EU are expected to remain low and stable, mainly because the UK is focusing on its domestic market, while significant increases in imports from other countries are not likely.

Pigmeat prices are expected to remain at higher level

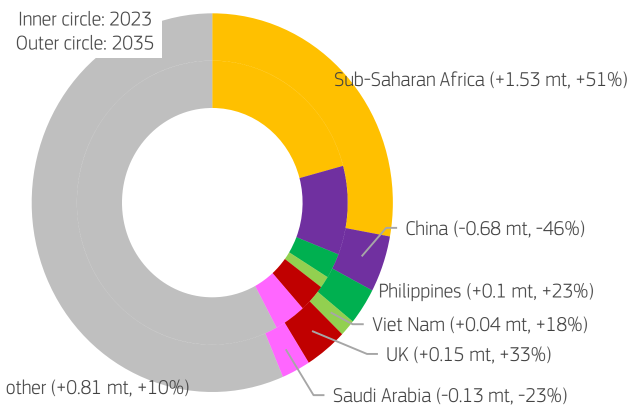
After the price spike in 2022-2023, EU pigmeat prices should decrease following an expected decline in production costs in the short term. However, it is uncertain to which level they will fall back. It is expected that prices could stay higher in the medium term than the levels seen in the past due to increased costs and tighter EU supply, reaching EUR 2 180/t by 2035.

POULTRY MEAT

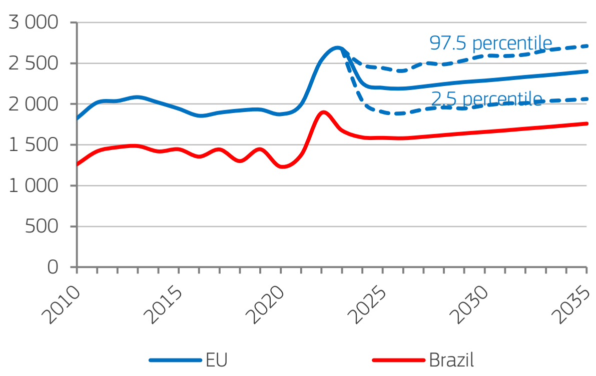
GRAPH 4.7 EU poultry meat market balance (million t)



GRAPH 4.8 Shares of selected poultry importers on global imports



GRAPH 4.9 Poultry prices (EUR/t) and uncertainty range



Poultry production is set to increase while consumption growth is likely to slow down

After a decrease in 2022, EU poultry production recovered quickly in 2023 (+3.3 % year-on-year). Increasing domestic demand and some export opportunities are set to increase poultry production by 600 000 t between now and 2035. This growth will be of a slower annual rate (0.4% in 2023-2035) than in the past decade (1.9 %). Environmental legislative framework will mean that this expansion will only be possible in some EU regions. Unlike avian flu outbreaks in previous years, the incidence of Highly Pathogenic Avian Influenza (HPAI) is expected to extend over the whole year instead of being a seasonal event. This will challenge the poultry sector, and more particularly free-range production systems in the EU in the coming years. Growth in EU poultry consumption is expected to slow down from 1.8 % per year in 2013-2023 to 0.3 % per year in the period between now and 2035. Nevertheless, this still translates to an increase in annual per capita consumption from 23.7 kg to 24.9 kg by 2035. That increase in consumption is related to the relatively cheaper price, healthier image of poultry meat compared with other meats (especially pigmeat), the greater ease of preparing poultry meat compared with other meats, and the absence of religious constraints on poultry meat consumption.

The poultry trade is expected to recover slowly

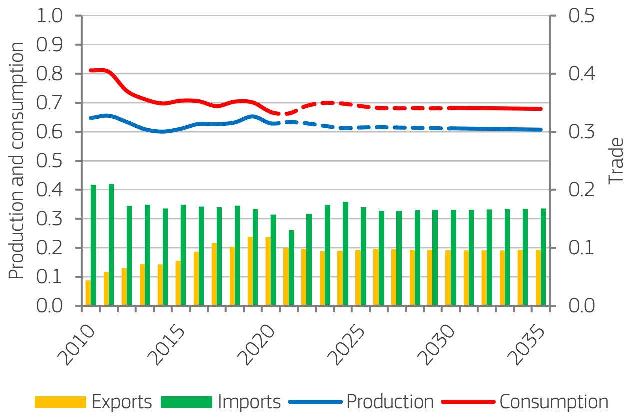
After a decline in recent years, EU poultry exports are expected to regain momentum in the coming years, in line with increased production. The main products exported are those where the EU is more competitive globally and where there is weaker demand domestically (wings, legs, and offal). By 2035, exports will have recovered slowly by 1 % per year between now and that time, reaching a level of almost 2.2 million t, thanks to increasing demand from sub-Saharan Africa, the Philippines and the UK. EU poultry imports, mostly supplying foodservice and food processors, recovered after COVID-19. In addition, the duty-free quota-free agreement with Ukraine (valid until June 2024) has led to a significant increase in imports. By 2035, imports are likely only to have increased slightly compared to current high levels, to a level of 910 000 t.

Poultry prices set to stay well above pre-COVID-19 levels

After the recent period of high prices, EU poultry prices are expected to decrease slightly and stabilise in the short term to a level still well above the pre-COVID-19 price. After this, they are expected to gradually increase to EUR 2 400/t by 2035, mainly thanks to sustained demand in the EU and price developments at world level. The price gap – whereby higher production prices in the EU confront lower world prices – is set to continue and will make competition in export markets a challenge.

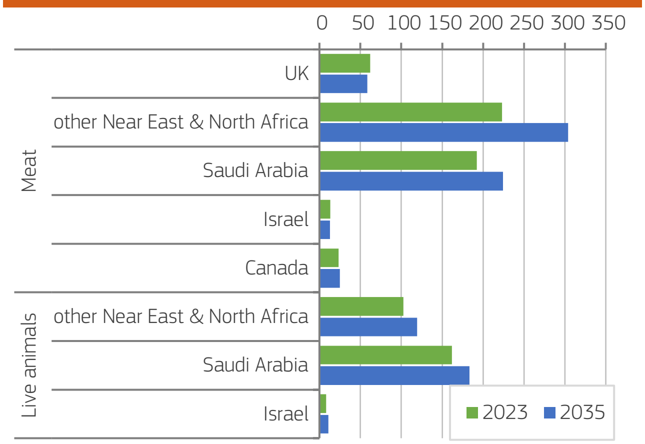
SHEEP AND GOAT MEAT

GRAPH 4.10 EU sheep and goat meat market balance (million t)

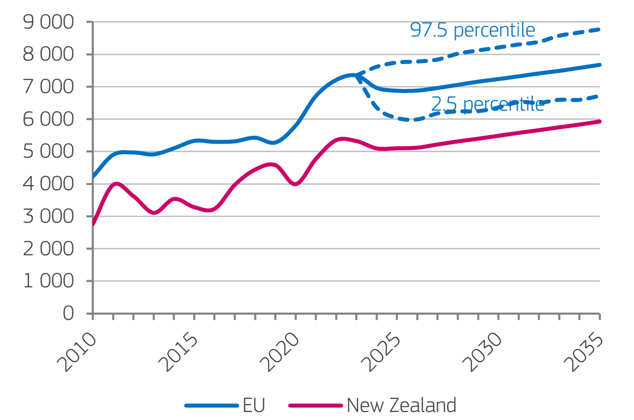


Note: Production corresponds to gross indigenous production; trade includes live animals.

GRAPH 4.11 Sheep imports to key EU partners (1000 t)



GRAPH 4.12 Sheep meat prices (EUR/t) and uncertainty range



Production set to decline slightly, while per capita consumption will likely remain unchanged

EU production of sheep and goat meat is expected to decrease slightly, falling by -0.3 % per year until 2035 (up to 607 000 t). This is expected to be mainly driven by the continued decline in production in the EU countries who entered into the EU before 2004 (-0.5 % per year). Between 2010 and 2022, the EU recorded a decline in the sheep and goat herd of around 10 million heads (-12 %). This structural decline is expected to continue in the coming years – albeit at a slower pace than in the past - despite coupled income support and favourable prices. Production will remain concentrated in a few EU countries, with slaughtering in Spain, Greece, France, Ireland and Romania representing almost three quarters of total EU production in 2022. EU per capita consumption is expected to remain relatively stable in 2035 at around 1.3 kg per year, mainly due to the sustained consumption patterns related to religious traditions and migration. In general, sheep meat consumption is less price sensitive and very affected by peaks in seasonal demand.

Imports are expected to recover while meat exports to the Near and Middle East will likely continue

EU exports of live animals are expected to decline by 2035 to 45 000 t (-9 % compared with the 2021-2023 average). This will mainly be due to animal welfare concerns in long-distance transport and financial risks associated with certain destinations. After years of lower exports and high domestic prices, EU exports of sheep and goat meat are expected to recover and reach 52 000 t by 2035 (+19 % compared with 2021-2023) based on a consolidation and further expansion in the Near and Middle East. EU exports of sheep and goat meat to the UK should remain stable as trade agreements between the UK and Australia/New Zealand were not factored in yet. EU imports of sheep and goat meat recovered relatively quickly after COVID-19, also thanks in part to the very competitive EU prices, and these imports are set to further increase to 168 000 t by 2035 (+13.6% compared with 2021-2023). Although Australia should fill its EU tariff rate quota, New Zealand's production capacity is unlikely to fully serve both the Asian and EU markets despite productivity gains.

Prices likely to remain above pre-COVID-19 levels

After 3 years of exceptionally high prices, EU prices for sheep and goat meat are expected to decline before trending upwards again, reaching almost EUR 7 700/t by 2035. The price level in the future is likely to remain higher than before COVID-19 due to tight supply and inelastic EU demand. A big gap between EU prices (higher) and prices in New Zealand and Australia (lower) will remain, reflecting their lower production and labour costs.

SPECIALISED CROPS

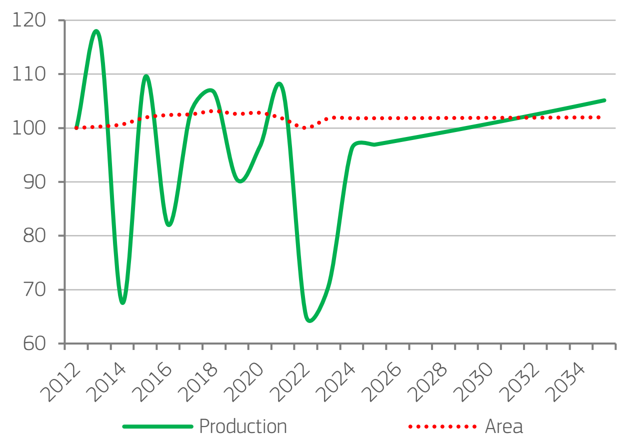
/5

This chapter looks into the following specialised sectors: olive oil, wine, and selected fruit and vegetables (apples, tomatoes, peaches and nectarines). These sectors are not included in the Aglink-Cosimo model, and projections are based on expert judgement and literature reviews, considering historical trends. Price developments are not explicitly incorporated into the projections.

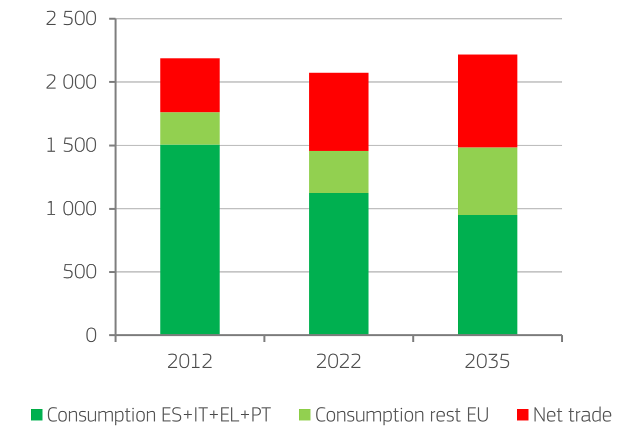
For apples, tomatoes, peaches and nectarines, the two production streams are analysed (for both fresh consumption and processing). The analyses are conducted for selected EU countries using the AGMEMOD model.

OLIVE OIL

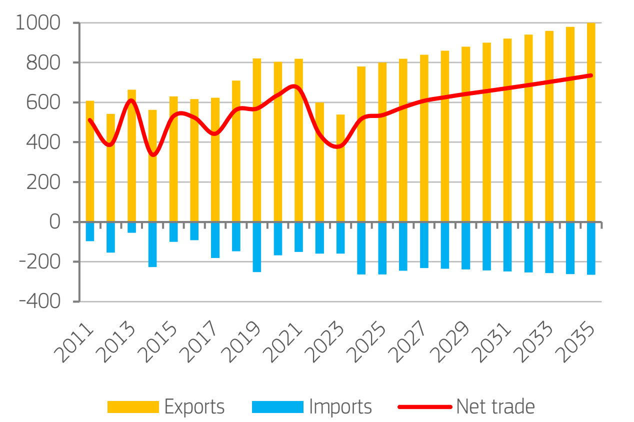
GRAPH 5.1 EU olive oil production and area development (Olympic average 2008-2012=100)



GRAPH 5.2 EU olive oil consumption and net trade (1000 t)



GRAPH 5.3 EU olive oil trade (1000 t)



Production growth is being challenged by climate change

The last 2 marketing years have shown how vulnerable EU olive oil production can be to adverse weather events. In traditional olive-production systems, these events add to their natural exposure to bi-annual alternate bearing cycles while for the modern (intensive and superintensive) systems, dry and hot weather could negatively impact both the growing phase and the availability of water for irrigation. These extreme weather periods can mean that the full production potential of modern olive systems is difficult to achieve. Climate change will remain a challenge and could lead to further variation in both olive yields and the quality of oil. On the other hand, research and innovation; and the introduction of more resistant varieties; could in part reduce these negative impacts, and lead to an increase in yields (of around 0.5% per year between now and 2035). The total land area dedicated to olives for oil production is expected to remain unchanged. This stability is likely to be achieved through both new plantations (including in more northern locations), and the shift by traditional growers to more moder systems, while the land abandonment could continue mainly due to lack of farm succession and competition among production systems and crops. Considering yields and area developments, EU olive oil production could reach close to 2.2 million t by 2035 (similar to the record year of 2021/2022).

EU consumption continue to diverge

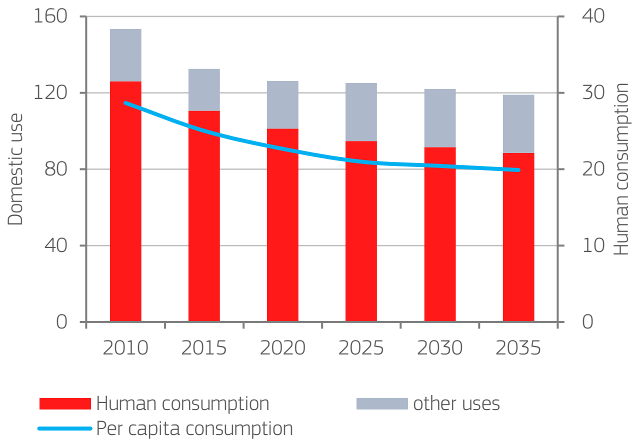
There are diverging trends in olive oil consumption between the main EU producing countries (declining) and the rest EU (increasing). These trends are expected to continue. Olive oil consumption in non-producing countries is driven by the increasing popularity of the Mediterranean diet, and health-awareness campaigns promoting the benefits of olive oil over other fats. Meanwhile, consumers in the main producing countries have showed a greater sensitivity to price increases in recent years, and a waning interest in olive oi consumption, especially among young consumers. Nevertheless, these trends in producing countries are likely to be offset by greater consumption in the rest of the EU, which could keep EU consumption relatively stable (+0.1% per year by 2035).

The EU's net trade position is set to strengthen

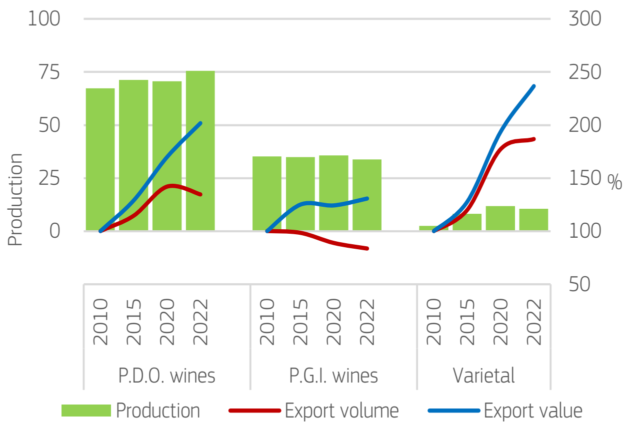
As the rate of growth in EU olive oil consumption remains relatively stable, EU exports will account for an increasingly larger share of EU olive oil production - up to 45% by 2035 (around 1 million t, compared to 37% in 2018-2022), mainly thanks to an expansion in Asian markets, while some traditional export markets could also grow. EU imports of olive oil could continue to partially compensate for production losses on an annual basis. Nevertheless, the EU's net export position could reach 730 000 t by 2035 (+140 000 t compared with 2018-2022).

WINE

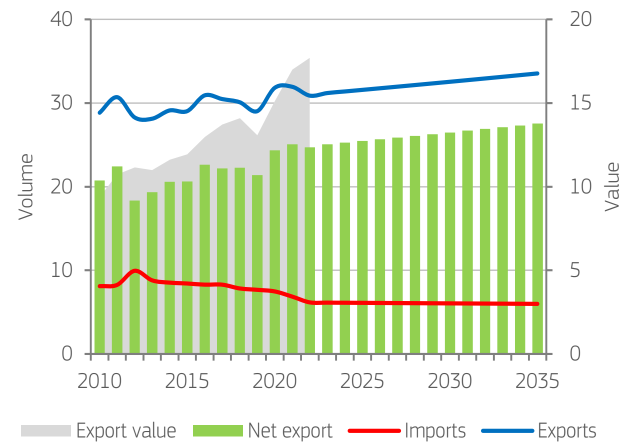
GRAPH 5.4 EU wine domestic use (million hl) and human per capita consumption (l)



GRAPH 5.5 EU wine production by categories (million hl) and exports in volume and in value (index 2010=100)



GRAPH 5.6 EU wine trade in volume (million hl) and value (billion EUR)



Source: DG Agriculture and Rural Development, based on Eurostat.

The decline in EU wine consumption continues

EU wine consumption has been declining for some years now, mainly driven by greater health awareness, different preferences for alcohol consumption among younger people, and competition from other beverages. This decline in wine consumption has hit demand for red wines in particular. However, despite this overall trend, there remains some divergence in wine-drinking patterns across the EU countries, linked to culture, tradition, habits, social events, and wine availability. Consumption of wine is projected to decline by around 1% per year between now and 2035, to around 20 l per capita consumption (2.4 l less than the annual average in 2018-2022). This forecast assumes that steeper declines in demand for some types of will be offset by growing demand for alcohol-free wines, wines with a lower alcohol content, whites, rosés and sparkling wines, and general adaptation of the sectors to new demand patterns. This decline in wine consumption will lead to an overall reduction in domestic use by 2035 as ‘other uses’ could stay relatively stable at 30 000 hl (e.g. distillation or transformation into processed products). However, this trend could be seen as rather optimistic and there could be a higher risk of larger decrease in the future.

EU wine production is set to fall in line with falling consumption trends

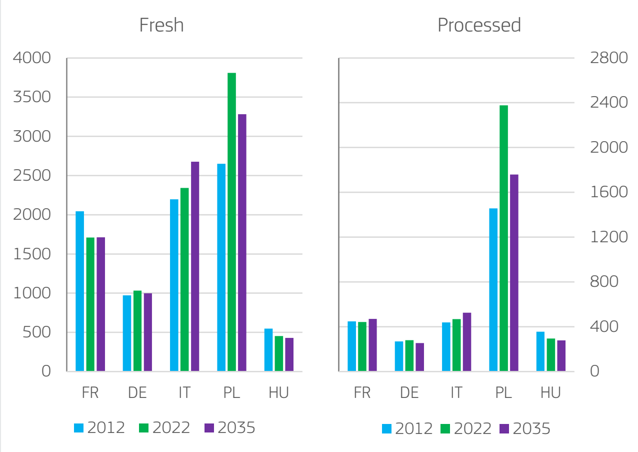
Domestic use of wine remains the single largest outlet for the EU wine sector (around 82% of EU wine was used in the EU in 2018-2022). Therefore, the declining consumption trend is likely to lead to a decline in EU wine production (by 0.6% per year to 145 million hl by 2035). Although the EU wine sector has been struggling with difficult - or even extreme - weather phenomena for several years, it continues to adapt to these challenges. However, planned reductions in pesticide use and plans for further irrigation restrictions in some EU countries could reduce both yields and the land area devoted to wine production.

Uncertain development of EU wine exports

In recent years, EU wine exports have grown to record levels. At the same time, demand in some traditional EU export markets has been reaching saturation levels. Therefore, the growth rate of EU wine exports could be rather limited in the coming years (growing only 0.3% per year between now and 2035). The slowdown in exported volumes could be attributed to increasing competition in entry and middle-level (low and middle-priced) wines, and a change in consumption patterns in the main EU export markets. However, the EU could continue to benefit from exports of PDO/PGI premium quality wines and sparkling wines, which could support growth in the value of EU wine exports. The reduced domestic use of the wine in the EU will also translate into lower imports (-2% per year between now and 2035).

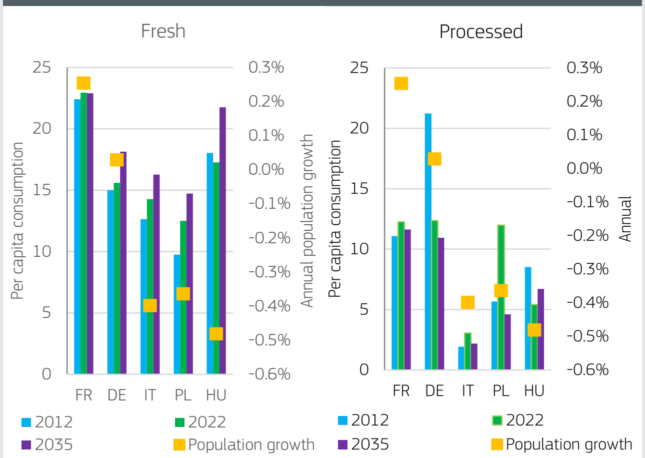
SPOTLIGHT ON APPLES

GRAPH 5.7 Production of apples (1 000 t) in the main EU producing countries



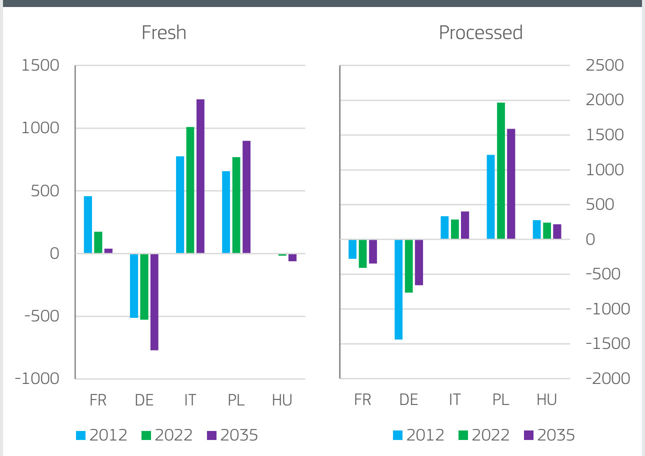
Note: 2012 and 2022 represent Olympic averages (in all graphs).
Source: AGMEMOD simulation.

GRAPH 5.8 Per capita consumption of apples (kg) and population growth (%) in the main EU producing countries



Source: AGMEMOD simulation.

GRAPH 5.9 Net trade (exports-imports) development of apples (1 000 t) in main the EU producing countries



Source: AGMEMOD simulation.

Production declines expected in several EU countries but production in Italy continue to grow

Many challenges lie ahead for EU apple growers that could lead to a loss of competitiveness. These challenges include limitations on the use of plant-protection products, pest outbreaks, and the occurrence of extreme weather events. Linked to these challenges, the harvested area of apples is expected to decline over the coming years in most of the main EU producing countries, except Italy. Despite these challenges, all the EU's main producers show forecasts for modest yield increases, which are such that they will likely compensate for the decline in the area under apple cultivation. Measured in terms of production, Italy and Poland are relatively competitive within the EU and on the international market.

Per capita consumption of fresh apples set for a modest increase due to favourable consumer preferences

Per capita consumption of fresh apples is projected to increase in almost all the main EU producing countries between now and 2035, reflecting a potential change in consumer preferences towards eating more fresh fruits. Nevertheless, consumer preferences for easier-to-consume fruits, and external factors such as increasing storage and packaging costs, could result in higher prices for consumers and this could in turn reduce consumption. The population of the presented countries is expected to decline by -0.1% per year over the period 2022-2035, which by itself will negatively impact total consumption of fresh apples, even though this negative impact will be outweighed by the positive factors that promote growth in consumption.

A stronger focus on the EU market

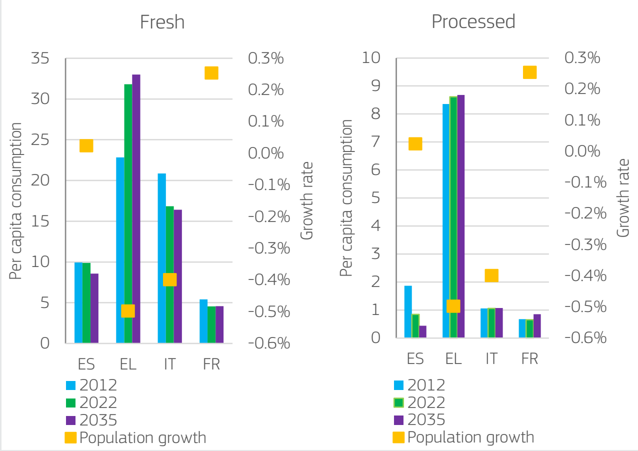
Poland and Italy are projected to remain the EU's key apple exporters, and these two countries could even increase their net exports of applies (including via trade flows to other EU countries and to markets outside the EU). However, growth in Polish net exports could be held back by lagging prices and a projected increase in domestic demand in Poland. The net export position of France, which is a significant exporter of applies to the UK, is expected to decline sharply compared with its current level. Germany is set to become an increasing net importer as demand growth and is expected to outpace any increase in domestic production. For the key countries altogether, production is expected to increase by more than total fresh apple consumption, leading to a projected increase in their total net exports to the rest of the EU, where demand is expected to grow moderately over the coming decade. However, at the global level, there is uncertainty, due in part to strong competition from countries such as Türkiye, which could compete with the EU's domestic production thanks to more competitive prices.

SPOTLIGHT ON PEACHES and NECTARINES

GRAPH 5.10 Production of peaches and nectarines (1 000 t) in the main EU producing countries

Note: 2012 and 2022 represent Olympic averages (in all graphs).
Source: AGMEMOD simulation.

GRAPH 5.11 Per capita consumption of peaches and nectarines (kg) and population growth (%) in the main EU producing countries



Source: AGMEMOD simulation.

GRAPH 5.12 Net trade (exports-imports) development of processed peaches and nectarines (1 000 t) in the main EU producing countries

Source: AGMEMOD simulation.

Declines in the production of peaches and nectarines

The EU peaches and nectarines sector will encounter several challenges in the coming years, mainly related to climate change and the occurrence of extreme weather events, such as those that happened in Italy in 2023 due to floods in the Emilia-Romagna region. The EU's production of peaches and nectarines for both fresh consumption and processing is projected to decline over the period 2022-2035. One of the reasons for this is a decline in the area given to production, which is expected to continue in the coming years (decreasing by -0.8% per year between now and 2035 considering all varieties and all main producing countries combined). Nevertheless, the sector is trying to adapt by using new varieties which could lead to higher yields in the future. Whether the positive impact of new varieties could compensate for the negative impact on yields related to climate change still remains uncertain. The impact on yields of adopting more sustainable practices also remains uncertain. Another factor limiting the sector's expansion is the lack of seasonal workers, a problem that has already been seen in Greece.

Consumption of peaches and nectarines is decreasing slightly

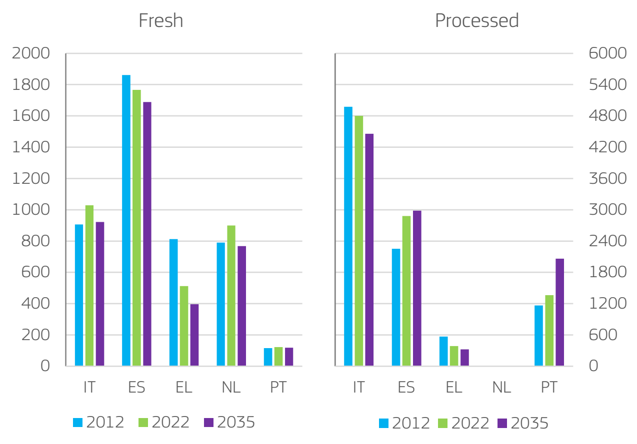
Historically, high volumes of peaches and nectarines (over 250 000 t per year) have been consumed in Greece, including the consumption by the many tourists. In per capita terms, the consumption of fresh peaches and nectarines is expected to decline across the EU. For example, consumption in Spain is expected to fall by -1.2% per year. An exception to this trend is Greece where fresh per capita consumption of peaches and nectarines is projected to reach 32.7 kg by 2035. The forecast for an EU-wide decrease in consumption is due to expectations of higher prices than in the past, which will likely make consumers switch to more affordable fruits, and consumer preferences shifting towards more 'easy-to-eat' fruits (e.g. berries). These consumption trends, which are not expected to be offset by growing exports, could push production down.

Pessimistic forecasts at international level

The trade position of the key producing countries in the EU over the coming years will likely reflect a continuation of recent trends. While Spain and Greece are expected to maintain their strong position as net exporters, France is expected to increase its imports of peaches and nectarines. Given the many uncertainties over the production potential in Italy, the recent change in the country's trade position (now becoming a net importer for processed peaches and nectarines) could continue. Italy could also become a net importer of fresh peaches and nectarines. In addition, non-EU production (Morocco and Türkiye) will likely compete with local production in the EU market, as is already happening in other fruit sectors.

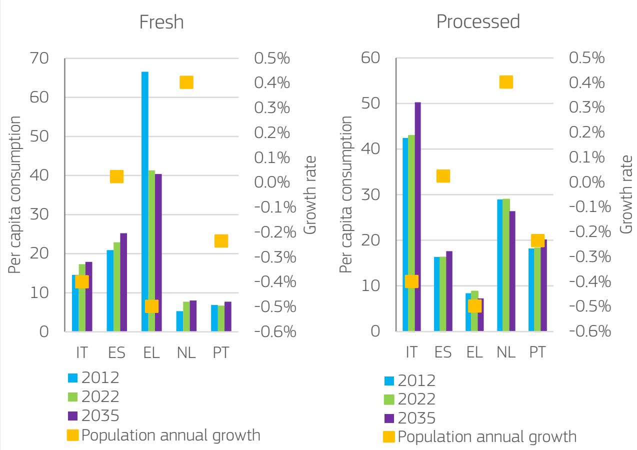
SPOTLIGHT ON TOMATOES

GRAPH 5.13 Production of tomatoes (1 000 t) in the main EU producing countries



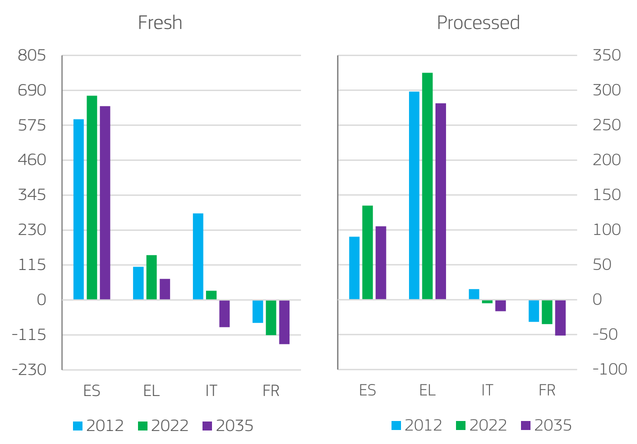
Note: 2012 and 2022 represent Olympic averages (in all graphs).
Source: AGMEMOD simulation.

GRAPH 5.14 Per capita consumption of tomatoes (kg) and population growth (%) in the main EU producing countries



Source: AGMEMOD simulation.

GRAPH 5.15 Net trade (exports-imports) development of processed tomatoes (1 000 t) in the main EU producing countries



Source: AGMEMOD simulation.

A mixed picture on the supply side

In the selected main EU producing countries, tomato production for fresh consumption is projected to decline over the coming years. However, it could remain relatively stable in Portugal as the country benefits from improvements in the supply chain. The overall projected declines reflect a variety of challenges related to climate change, water shortages, high energy costs and stronger limitations on the use of pesticides. In addition, pest outbreaks could reduce yields while increasing 'normal' production costs when diseases become endemic. In the short term the underlying factors explaining the forecast declines are high energy costs, in particular for the Netherlands, although these costs have been falling more recently, and reduction in purchasing power. In the longer term, other factors such as climate change will possibly result in a decline in the cultivated area. Tomato production in the Netherlands is expected to decline at least by -1.1% per year between now and 2035 mainly caused by area reduction. Focusing on those varieties that are used as an input for the processing industry, production increases are expected in Portugal and Spain in the coming years. These developments are explained by projected increases in yields and cultivated areas, driven by substantial investments (e.g. in the Extremadura region).

A change in consumer preferences towards 'snacking' varieties

Patterns of fresh tomato consumption are changing due to a stronger preference for 'small-sized' varieties. This also has an impact on production figures since these types of tomatoes have lower yields. Over the period 2022-2035, per capita consumption of fresh tomatoes is expected to increase in Spain, Italy, the Netherlands, and Portugal, with annual increases in the range of 0.2%-1.1%. Focusing on processed products, the per capita consumed volumes are projected to decline in Greece and the Netherlands between now and 2035 (-1.4% and -0.7% per year respectively). In some countries, tomato paste consumption benefits from demand of prepared meals (e.g. pizza).

Greater inward market orientation in Spain and the Netherlands

Over the period 2022-2035, the EU is expected to maintain its current net importing position in tomatoes for fresh consumption. However, as in other sectors, there could be increasing competition from other global producers which could impact some tomato growers (who may, for example switch to other crops), although these non-EU suppliers are expected to face the same challenges in terms of pests and climate change as producers in the EU. On processed tomatoes, there is no change expected in the overall picture, with the EU forecast to continue being a strong net exporter especially of high value products like peeled tomato sauces, and with Spain and Portugal being able to increase their exported volumes in the coming years.

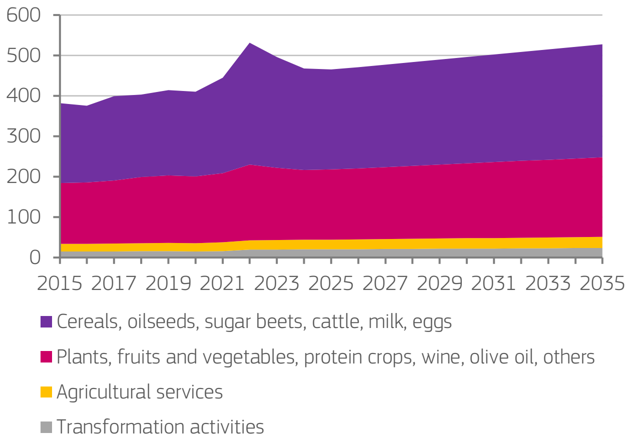
AGRICULTURAL INCOME

/6

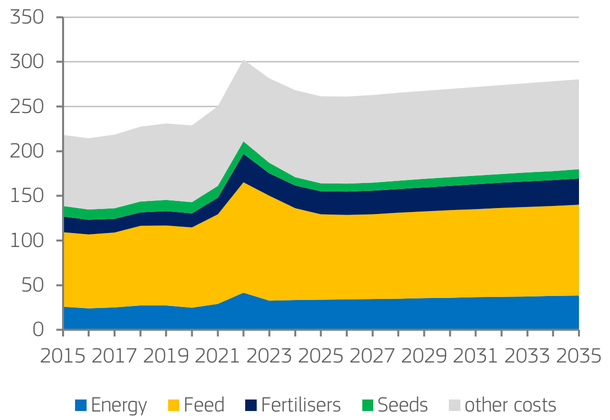
This chapter analyses how changes in agricultural markets over the next decade will affect the value of agricultural production, and potentially also farmers' income. The analysis shows one of possible developments, based on several assumptions – including assumptions about agricultural sectors not explicitly covered by this outlook report – and the data from Eurostat's Economic Accounts for Agriculture. The information on public funding has been updated, based on the information available from the CAP Strategic Plans when the analysis was made.

FARM INCOME

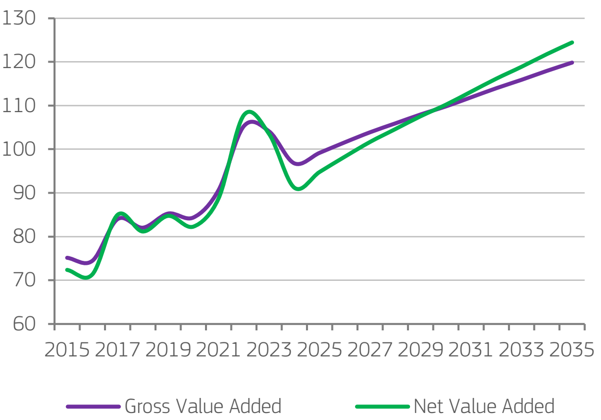
GRAPH 6.1 Value of EU agricultural output (billion EUR)



GRAPH 6.2 Intermediate costs per category (billion EUR)



GRAPH 6.3 Gross and Net Value Added (average 2021-2023=100)



The value of agricultural production is on an upward trend

Based on production trends and related price developments, the value of EU agricultural production in nominal terms is projected to reach EUR 527 billion in 2035, growing at a rate of 1.2 % per year after 2025. Commodities such as cereals, oilseeds, sugar beet, milk, eggs, and meats, will continue to account for most of the EU's agricultural output by 2035 (53%). Other agricultural products such as forage plants, fruit and vegetables, protein crops, potatoes, wine, and olive oil are set to account for 37% of agricultural production by 2035 (+1 pp. in share compared with the 2021-2023 average). Transformation activities performed within farms (i.e. processing), as well as agricultural services such as agritourism and rural recreation are expected to account for 4% and 5% respectively, thus continuing their relatively marginal share that these activities have historically occupied.

Cost of production are set to further expand

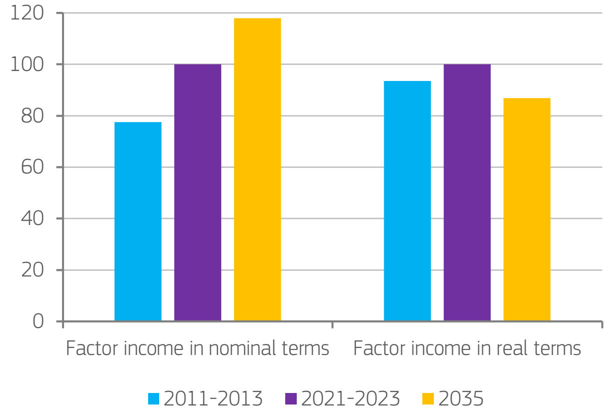
Energy and other input prices are assumed to remain higher than pre-2021 levels in the medium term. Total agricultural costs are expected to increase by 0.7% per year after 2025 (compared with increases of 0.5% per year observed between 2015 and 2020), less than the value of agricultural production. Despite expected reduction of numbers of animals, the feed will remain the largest cost (36% of total intermediate consumption, down from 42% in 2023). Other costs such as agricultural services (e.g. advisory service, veterinary expenses, maintenance of buildings) are expected to increase. The share of other costs on total agricultural costs is projected to account for 36% by 2035. Due to assumed higher energy and fertiliser prices, their shares on total costs could grow to 14% and 10% respectively.

Income margins are expected to grow steadily

By subtracting input costs from production value, gross value added generated by EU agriculture is set to increase by 1 % per year between 2023 and 2035, with growth picking up after 2025. Fixed capital consumption[12], a proxy of agricultural investments, is expected to grow by 0.8% per year between now and 2035. This growth will be lower than observed in the past when its increase was boosted by the restructuring process which took place in EU countries joining the EU after 2004. The resulting net value added, obtained by subtracting fixed capital consumption to the gross value added, is projected to grow by 1.1% per year between now and 2035.

[12] The fixed capital consumption accounts for the loss of economic value of capital, because of it wearing off or becoming obsolete.

GRAPH 6.4 Farm income at current (nominal terms) and constant 2010 prices (real terms) (average 2021-2023=100)



Nominal farm income is set to increase after 2025

Considering the assumed development of net value added, plus subsidies and minus taxes, the nominal farm income could be derived. It is expected to increase by 0.8 % per year between 2023 and 2035 and at a more sustained rate of 2.5% per year after 2025. However, this is taking into account the price environment of the baseline while in reality there could some moves downwards or upwards. In contrast to nominal values based on current prices, real values are based on constant 2010 prices and are therefore corrected for inflation. Given that the inflation surge observed since the end of 2021 is currently expected to return to normal levels only from 2025 onwards, this produces a significant divergence between nominal and real farm income under the baseline price environment.

The economic viability of farms will further be positively influenced by productivity gains, driven by mechanization and automation. This will allow EU farming sector to cope with ongoing labour outflow and at the same time, create more opportunities for skilled labour. This way, the financial attractiveness of the sector could also be improved.

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WHAT IF SCENARIOS

/7

This chapter presents two scenario analyses which are analysing alternative and theoretical pathways.

The first scenario analyses how past changes in temperature and rainfall affect global animal and crop yields, and how climate change in the near future disrupts agricultural production and trade. Econometric estimates of the near-term effects of climate change on yields imply modest changes (+/-5%) in average yields. However, the effects of these changes in yields on prices, consumption, and trade are likely to be felt worldwide with different intensities, depending on countries' and sectors' relative competitive advantages. Increases in exports usually correlate to excess domestic supply, while increases in imports usually correlate to increases in excess demand. World consumption of the main commodities is likely to fall due to increased domestic prices in most cases. As consumption falls, exports and imports drop in almost all main products.

The second scenario looks at the environmental and economic impacts of tillage practices, winter cover crops, and peatland restoration through rewetting. A reference scenario (i.e. soil management practices in 2016 and no restored peatland), is compared with a moderate scenario and an ambitious scenario, the latter being characterised by near-maximal adoption of these farm practices. Results show that peatland restoration can effectively help to cut GHG emissions, N surpluses and NH_3 emissions. Soil management practices can help to reduce the leakage of nutrients into water, soil erosion, and emissions of NH_3 and GHGs. However, the long-term cost-efficiency for GHG mitigation of these soil management practices remains uncertain. Their moderately adverse impact on farm income is mostly due to increased costs.

CLIMATE SCENARIO

Background and objectives

This scenario was motivated by observed changes in global agricultural production due to climate change. The two main driving forces of climate change are longer-term changes in average temperature and rainfall compared with the pre-industrial levels. These two forces might become more significant in the near future due to shifts in global weather patterns. Given the various impacts of climate change, this chapter analyses how climate change might impact world agricultural yields in the medium term, and how these impacts could translate into changes in global crop and animal production, trade, and changes in commodity prices.

Methods and scenario description

The analysis makes use of agricultural FAOSTAT yield data spanning from 1961 to 2017, encompassing over 165 countries and 175 commodities. Yields vary greatly over countries and commodities and have developed very differently over the period of analysis. For instance, maize yields vary significantly among continents, except for Africa where the growth remained relatively stable but lower compared to global average (around one-third of the global average by the end of the period). While yield variability in the Americas, Europe, and Oceania is increasing, Asian maize yields have shown more stable growth.

By matching yearly mean temperature and total precipitation to FAOSTAT yield data, an econometric model can estimate their effects on agricultural yields[13]. For the weather variables, the model uses changes in yearly mean temperatures and changes in total precipitation for the 5 greenest months in the year[14]. These changes include both linear and quadratic terms. To avoid confounding effects stemming from regional differences, the effects of the weather variables on yields are estimated at the regional level. All countries considered in the analysis are allocated to five regions of equal latitude extension from south to north. Country and crop specific effects are estimated in addition to the effects of average regional temperature and rainfall[15]. The near-term changes in mean temperature and total rainfall used to estimate yield changes are obtained from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), based on the high-emission representative concentration pathway 8.5 (see in annex)[16]. The average changes in both temperatures and rainfall, coupled with the estimated coefficients, make it possible to calculate percentage yield changes at country level. In this scenario, no extension of possible cultivated area is assumed which could have been the case if the climate change progressed (e.g. making suitable for farming also more Northern locations). The impacts on animal carcass yields are applied to animal production quantities directly. These changes are applied to 31 commodity groups and 48 country aggregates in the Aglink-Cosimo model, affecting global market balances (production, consumption and trade) and prices.

Impacts on production, consumption and prices

The estimated near-term climate impacts applied to baseline yields are not large. For example, estimated yield deviations from the baseline range between -10% for sorghum in Kazakhstan and Ukraine, and +8% for sugar beet in Africa. However, while yield effects are not sizeable, their effects on production and trade worldwide are considerable and regionally differentiated. Some of the southern-most and northern-most regions are less negatively affected by temperatures, as are some of the equatorial countries, which are expected to receive more rainfall in the future. The modelled impacts of climate change on animal and crop production differ across commodities worldwide (for examples, see annex). Climate change is altering global weather patterns, creating more favourable production conditions in some regions while creating less favourable production conditions in others. Besides weather, the impacts are also differentiated based on the technological trends (e.g. countries located in the same latitude might have similar weather impacts but the overall outcome will also reflect the productivity gains). The impacts of climate change on agricultural production are varied given the relative competitive advantage of some countries in producing certain commodities (e.g. due to lower production costs). For example, by 2035, wheat production is forecast to decrease slightly in the EU (-0.3%, -0.4 million t), but more substantially in Russia (-4%, -4.3 million t) and in the US (-2%, -0.8 million t). However, it is forecast to increase significantly in Canada over this period (+11%, 4.2 million t). Maize production is also projected to decrease by -1% (0.8 million t) in the EU, by -3% (-8.2 million t) in China and by -2% (-3.1 million t) in Brazil. Soya

[13] The identification of the econometric model is achieved thanks to inter-annual yearly variations of yields and weather variables. This model is estimated in first-lag differences for each of the variables (year-over-year). Weather data are from the Princeton Gridded Meteorological Forcing Dataset Manipulation of weather data follows Ortiz-Bobea, A., Ault, T.R., Carrillo, C.M. et al. Anthropogenic climate change has slowed global agricultural productivity growth. Nat. Clim. Chang. 11, 306–312 (2021). https://doi.org/10.1038/s41558-021-01000-1.

[14] Greenest months of the year are defined in terms of Normalised Difference Vegetation Index.

[15] As the econometric model is estimated in first-difference terms, the country and crop specific effects represent trends in levels.

[16] Near-term changes in mean temperature and total rainfall are obtained from the Interactive Atlas Working Group I of the Intergovernmental Panel on climate Change (IPCC) by using an ensemble of more than 30 models from the 6th phase of the Coupled Model Intercomparison Project (CMIP6). The average changes in temperature and rainfall measure changes between climates in the 2021-2040 period and in the 1986-2005 period, as an average representative period of our base agricultural data. The RCP used is consistent with an increase in radiative forcing of 8.5 W/m^2 at the end of this century, relative to pre-industrial conditions.

bean production is forecast to decline in the US (-3%, -3.8 million t), in the EU (-4%, -0.15 million t), in China (-3%, -0.7 million t) and in Brazil (-3%, -4.3 million t), but increases in Argentina (+2.4%,+1.3 million t) and in Russia (+4%, +0.3 million t).

Commodity price impacts are expected to be different due to differences in underlying price elasticities of supply and demand. Domestic wheat prices are forecast to increase up to +33% (Canada) between now and 2035. By contrast, milk prices are expected to be less affected and show smaller increases, ranging between 2% (China) and 12% (India). Pigmeat prices are forecast to react the most to near-term projected climate change. In this case, pigmeat price increases are forecast to go up to +43% (Brazil). Changes in prices and production patterns are reflected in domestic consumption, given substitution possibilities. Consumers will usually consume less of a more expensive commodity if a cheaper substitute is available. For example, pigmeat consumption in the US is expected to decrease by -1% by 2035 due to a large increase in domestic prices (+31%), while US consumption of poultry, and beef and veal is expected to increase by +0.4% and by +1.1% respectively, due to lower relative domestic price increases (+26% for poultry and +15% for beef and veal, respectively). Finally, in 2035, Canadian consumption of wheat is forecast to increase by +3% (+0.3 million t), and Australian and Russian wheat consumption by +1.6% (+0.15 million t and +0.8 million t respectively), while Indian and Chinese wheat consumption is expected to drop by -1.7% (-2.3 million t) and -0.7% (-1 million t), respectively. EU wheat consumption is forecast to decrease by -1% (-1 million t).

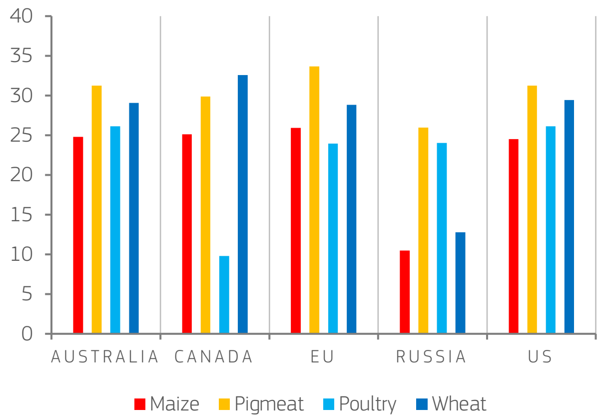
Impacts on exports and imports

As with the impacts of climate change on production, the trade impacts are also expected to vary across commodities. In the model, increases in exports usually correlate with increases in production and decreases in domestic consumption, whereas for imports the opposite holds. By 2035, poultry exports are expected to decrease in Brazil by 0.3 million t (-5%) and increase in the EU by 0.2 million t (+9%). Maize exports decrease for example in Brazil by 0.6 million t (-1%) and in Russia by 0.8 million t (-13%), while they are expected to increase in Argentina by 0.8 million t (+2%) and in the US by 4.6 million t (+8%). Maize imports are forecast to increase in China by 3.1 million t (+16%) and in the EU by 0.6 million t (+4%) by 2035.

Wheat exports are forecast to soar in Canada by 3.9 million t (+14%) and modestly in the EU by 0.6 million t (+2%) by 2035. However, wheat exports are expected to drop in Russia by 5.4 million t (-11%), in the US by 0.8 million t (-3%), and in Argentina by 0.5 million t (-3%). And by 2035, wheat imports are forecast to increase in Brazil by +0.2 million t (+4%) but decrease in China by -1.3 million t (-17%) and slightly also in Mexico by 0.1 million t (-3%).

Soya bean exports are expected to increase in Argentina by 2.1 million t (+25%) and in Canada by 0.2 million t (+3%). However, soya-bean exports are expected to decrease in Brazil by 3.1 million t (-3%), and in the US by 0.9 million t (-2%). Soya bean imports are expected to decrease in China by 1 million t (-1%), and in Argentina by 0.3 million t (-9%) by 2035.

GRAPH 7.1 Climate change impact on domestic prices (% compared with baseline, 2035)



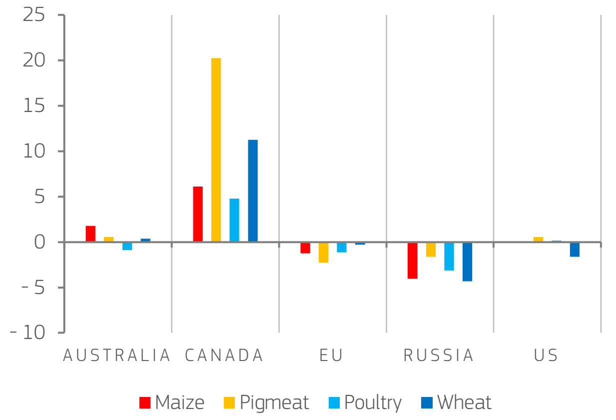
Source: Scenario simulation based on Aglink-Cosimo model.

Global impacts

Despite forecasts for a global increase by 2035 in the harvested area for maize (+1.1%), rice (+0.7%), soya bean (+0.9%), and wheat (+0.7%), these expansions are likely to fail to offset yield declines caused by near-term climate effects, resulting in an overall production decrease of 1% for maize, 1.1% for rice, 1.8% for soya bean, and 0.7% for wheat over the same period. Considering these results and expected growth in demand for food, climate change mitigation and adaptation strategies gain in importance. For animal products, notwithstanding some outliers where production of pigmeat and poultry will increase (e.g. Canada or Argentina), world production of pigmeat and poultry is forecast to decrease by 1.6% and by 2.4%, respectively by 2035. World beef and veal production is expected to increase by 0.7%, sheepmeat production by 0.3%, and milk production by 0.1%.

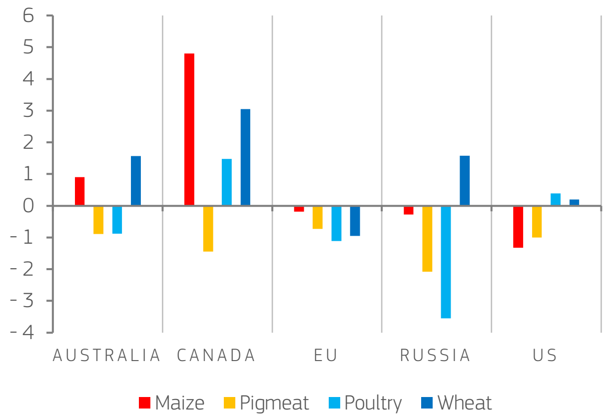
Declining domestic production would lead to higher domestic prices, which would negatively impact consumers. Exports and imports follow similar patterns as consumption trends in all main products. By 2035, global trade in wheat is forecast to fall by 3.3 million t (-1.5%), soya bean by 1.9 million t (-1.1%), rice by 1.2 million t (-2%), and pigmeat by 0.1 million t (1%). Exceptions to these decreases are beef and veal trade (forecast to increase by +0.1 million t, and +0.7%), maize (+2.7 million t, +1.3%), and sheepmeat (+0.1 million t, +7.6%).

GRAPH 7.2 Climate change impact on production (% compared with baseline, 2035)



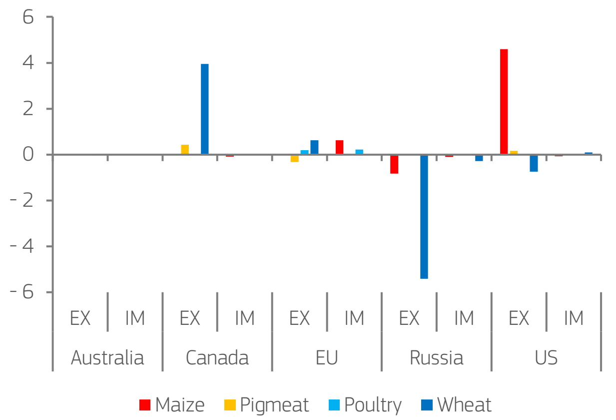
Source: Scenario simulation based on Aglink-Cosimo model.

GRAPH 7.3 Climate change impact on consumption (% compared with baseline, 2035)



Source: Scenario simulation based on Aglink-Cosimo model.

GRAPH 7.4 Climate change impact on imports and exports (% compared with baseline, 2035)



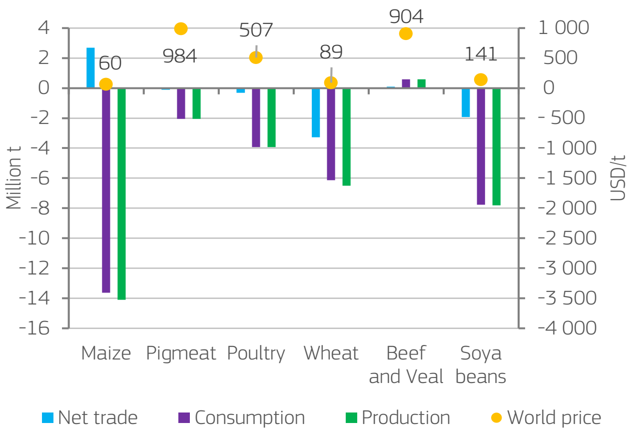
Source: Scenario simulation based on Aglink-Cosimo model.

Conclusions

This scenario analyses how past changes in mean temperature and total rainfall might affect global animal and crop yields and how climate change projections for the near future based on high emissions would impact agricultural production and trade. Econometric estimates of the effects of climate change on yields imply modest changes in average yields in the near term. Even though the yield effects are not large, their effects on production and trade worldwide are not to be neglected. Shifts in production patterns due to climate change reflect countries' relative competitive advantage in commodity production. Changes in prices and production patterns are reflected in domestic consumption. Increases in exports correlate to increases in production and/or drops in internal consumption, while increases in imports usually correlate to drops in production or increases in consumption.

Decreases in crop production and monogastric animal production, on the one hand, and increases in products deriving from ruminants, on the other hand, imply an increase in greenhouse gas emissions from near-term climate change if no mitigation is taking place (a +1.9% increase in emissions in total, equivalent to 120 million t of CO_2 eq.[17], with +1.3% coming from aggregate crop production, equivalent to 23 million t CO_2 eq, and +2.1% from aggregate animal production, equivalent to 97 million t of CO_2 eq.). This would be driven by both an increase in land area utilised and higher ruminant numbers. Considering how impactful climate change might be for agricultural production and how much these impacts would be passed on to agricultural trade and prices worldwide, efforts to mitigate greenhouse-gas emissions and adapt to already locked-in climate change are critical even in the near term (e.g. through investments in climate-smart farming).

GRAPH 7.5 Climate change impact on global production, consumption, and trade (million t, compared with baseline) and global prices (USD/t) - 2035



Source: Scenario simulation based on Aglink-Cosimo model.

[17] CO2eq stands for CO2 equivalents. Carbon dioxide equivalent for a gas is derived by multiplying the tonnes of the gas by its Global Warming Potential.

SOIL MANAGEMENT SCENARIO

Background and objective

Agricultural activities can improve both the climate and the environmental performance of farm-land if the farmer adopt certain forms of soil management. Based on the scenarios simulated with the CAPRI model, this section analyses the potential environmental and economic impacts of the wider adoption of some key farming practices affecting carbon (C) sequestration or soil greenhouse gas (GHG) emissions. These farming practices are winter cover crops, tillage management and peatland restoration.

Farm practices modelling assumptions

In the scenarios presented below winter cover crops are non-harvested crops planted between cash crops during the winter season or between rows of permanent crops. It is assumed that winter cover crops contain a 50% share of legumes and reduce nitrates runoff and leaching by 35%[18] and reduce soil erosion by 20%[19]. Under no tillage systems, agricultural land is neither ploughed nor tilled. Conservation tillage refers to an intermediate soil management practice between no tillage and conventional tillage, that allow some shallow tillage but no turning of the soil. It is assumed that no tillage is accompanied by a general yield decrease of 10% in northern and central EU countries[20], an increase in N_2O emissions of between 8% (southern EU countries) and 12% (northern and central EU countries)[21], and an increase in nitrates leaching of 24% for mineral fertilisers and 38% for manure[22]. Soil erosion decreases by 75% for no-tillage and 65% for conservation tillage[19]. Assumptions about soil carbon sequestration are based on regionally differentiated factors from the Century model for all soil management practices[23]. For tillage practices, C sequestration on the 30 cm topsoil layer should be considered an upper limit as it is uncertain whether the observed C stock increase simply accumulates in the upper layer due to a lack of soil movement.

Peatland restoration refers to the rewetting of organic soils on utilised agricultural area (UAA), i.e.: cropland and permanent grassland. These soils were formed in wetlands under anaerobic conditions, accumulating a high amount of organic matter. Drainage and cultivation lead to significant emissions of CO_2 and N_2O. The assumption is that peatland restoration involves an initial rewetting investment[24] distributed along 30 years and a stop to all agricultural activities[25], reducing all respective emissions to zero.

[18] Eory et al. (2015) and MITERRA model (Pérez-Dominguez et al., 2020).
[19] Panagos et al. (2015).
[20] Soane et al. (2012).
[21] Huang et al. (2018).
[22] Daryanto et al. (2017).
[23] Lugato et al. (2015).

Scenarios description[26]

The reference scenario (S0) is a CAPRI baseline for 2030 that is aligned with the 2020 Medium-term Outlook. The shares of winter cover crops and tillage practices on arable land match those recorded in the 2016 Survey on Agricultural Production Methods. The area of restored peatland is assumed to be zero.

Scenario 1 (S1) simulates a moderate increase in the uptake of the considered farm practices. For winter cover crops, the average EU increase compared to the reference scenario is assumed to be 7 pp., from 17% to 24% of the eligible area. For tillage practices, an increase of 5.5 percentage points is assumed under this scenario, from 22.5% to 28% of the arable crops area. And for peatland restoration, a rewetting of 6% of the total peatland area is assumed.

Scenario 2 (S2) simulates the full potential of these farm practices. For cover crops, the full uptake of cover crops on all the UAA not covered during the winter is assumed. For peatland, the restoration of all the organic soils on UAA is assumed under this scenario. For tillage practices the assumption is an increase of up to a maximum of 80% of arable land for the sum of the two practices.

Effects on ammonia emissions

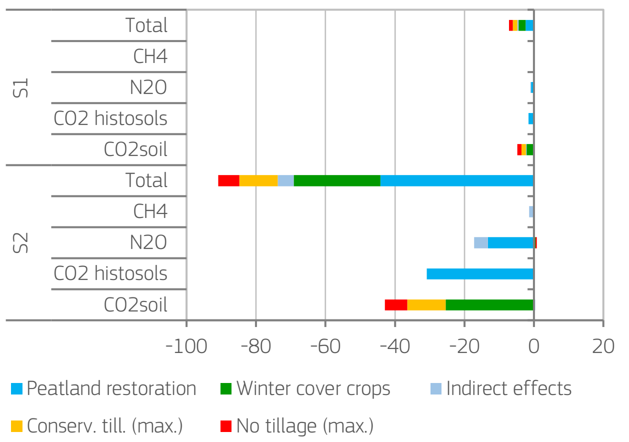
Although there are only minor effects on ammonia (NH_3) emissions in S1, in S2 an overall reduction in ammonia of -3% for the EU and –10% in some hotspot regions is projected (see the maps in the Annex). These reductions are due to less use of mineral fertilisers, mostly thanks to a greater nitrogen fixation in areas with winter cover crops, but also due in specific regions (e.g. in the Netherlands) to a reduction in cultivated peatland area.

Soil erosion

The maps in the Annex show the regions facing a moderate and severe risk of soil erosion in the reference scenario, and the changes per hectare to this risk in S1 and S2 due to soil management practices and land use changes (-2% reduction in soil-erosion risk in S1, -18% in S2). Soil erosion decreases the most in the Mediterranean regions thanks to these practices.

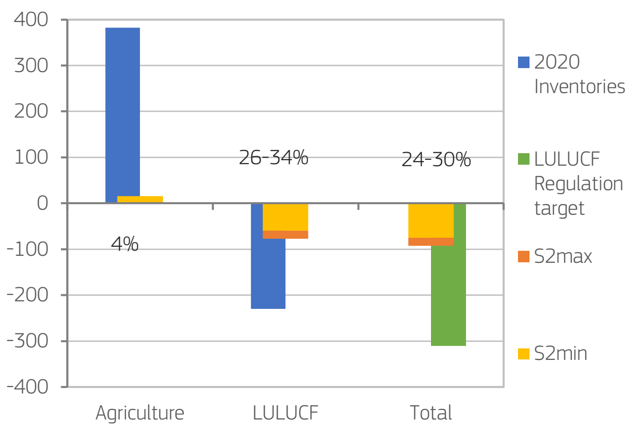
[24] Mean investment cost from COWI, Ecologic Institute & IEEP (2021)
[25] CAP direct payments are assumed to be kept on rewetted peatlands.
[26] The annexes collect some maps showing the uptake of the different farm practices by NUTS2 regions in the three scenarios, expressed as percentage of the UAA. Conservation tillage uptake levels are much higher than no tillage. The total maximum area for winter cover crops is 33% of the UAA for the EU,

GRAPH 7.6 Change in GHG emissions by gas type (million t CO_2 eq.)



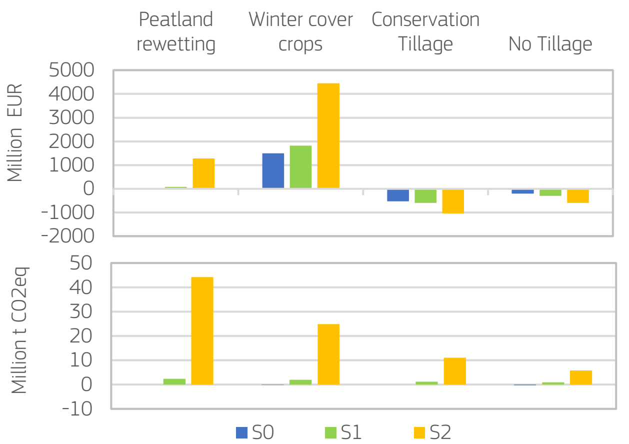
Source: Scenario simulation based on CAPRI model.

GRAPH 7.7 GHG emissions by UNFCCC sector (million t CO_2 eq.)



Source: Scenario simulation based on CAPRI model.

GRAPH 7.8 Net costs and mitigated GHG emissions by farm practice



Source: Scenario simulation based on CAPRI model.

and in some regions more than 50%. The highest levels of rewetted peatlands can reach 30% of UAA in the Netherlands.

GHG emissions

Peatland restoration significantly reduces both N_2O and CO_2 emissions from the cultivation of organic soils, while the other soil management practices increase the C stock in agricultural soils. Cover crops lead to more N_2O emissions from crop residues, but these are almost completely offset by fewer emissions from the application of mineral fertilisers. Moreover, there are small indirect effects from different soil management practices on CH_4 and N_2O. For CH_4, these effects are due to fewer grazing animals resulting from peatland restoration. The potential additional GHG mitigation of the farm practices (S2 compared with S0) is 74 - 91 million t CO_2 eq. The largest part of the emission reductions affects the Land Use Land Use Change and Forestry (LULUCF) sector (26-34% of 2020 LULUCF net removals in S2), and only a smaller part affects the Agriculture sector (4% of the 2020 emissions in S2). The total emission reduction is equivalent to 24-30% of the target set by the LULUCF Regulation (310 million t of CO2 eq.).

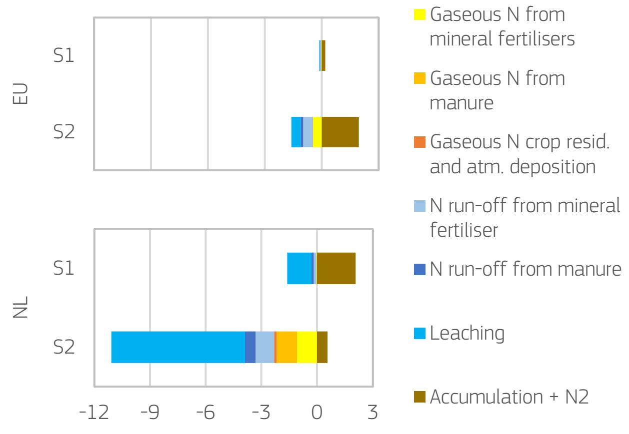
Net costs and mitigated GHG emissions

There are additional net costs of almost EUR 1 300 million for peatland rewetting and almost EUR 3 000 million for winter cover crops under S2 compared with S0, while tillage practices show net revenue (EUR +900 million) despite increased cost for herbicides use, due to the lower costs of fuels and labour. However, any calculation of cost-effectiveness ratios is difficult due to the different characteristics of carbon sequestration and other emissions.[27] It is assumed that C sequestration takes place during the first 20 years from the start of the soil management practice, and that adoption is linearly increasing between the base year 2017 and the simulation year 2030. After 20 years a new C equilibrium is reached, and there is no additional C sequestered, while the cost of the farm practice may continue to be borne, given that stopping the practice would lead to the full release of the stored carbon. This means that costs per tonne of stored carbon may become very high in the long term.

For the three soil management practices in S0, it is assumed that a carbon equilibrium is already reached, and that no additional carbon is sequestered. Therefore, there may be positive or negative costs, but there are no - or only a few - associated mitigated emissions. Unlike with the soil management practices, peatland rewetting has a long-term mitigation effect beyond 20 years, but no peatland is rewetted in S0. Furthermore, there should be some mitigated emissions from winter cover crops due to the lower *production* of mineral fertilisers they entail. These avoided emissions are not part of the "Agriculture, Forestry and Other Land Use" (AFOLU) sector, but would add some mitigated emissions to this practice in all scenarios, including S0.

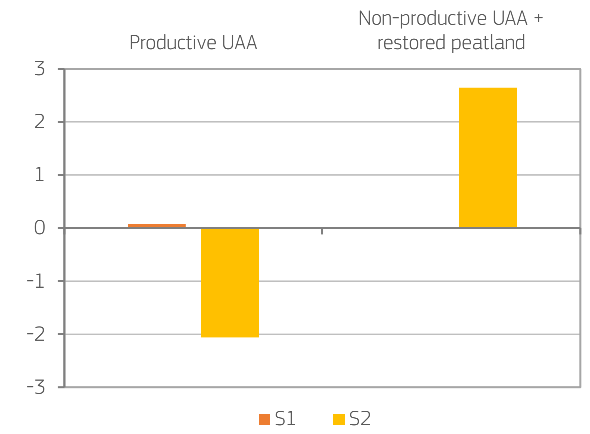
[27] Other JRC studies have shown that peatland restoration and winter cover crops are very cost-effective GHG mitigation measures in many EU regions (Fellmann et al. 2021).

GRAPH 7.9 N surplus change (kg N/ha UAA)



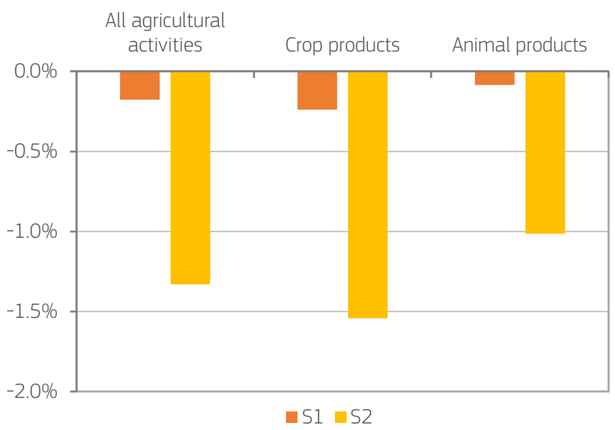
Source: Scenario simulation based on CAPRI model.

GRAPH 7.10 Changes in EU UAA area (million ha)



Source: Scenario simulation based on CAPRI model.

GRAPH 7.11 Changes in the EU farm income



Source: Scenario simulation based on CAPRI model.

N surplus, leaching and runoff

In scenario S2, there are significant positive and negative effects on N surplus, with a small average increase (+0.4 kg N/UAA ha, +0.6%) due to winter cover crops. However, due to peatland restoration there are decreases in N surplus in some regions, like in the Netherlands (-3.3% in S2), in Belgium, and in one region in each of Poland and Ireland (see maps in the Annex). The N surplus can be split by its four components: active (polluting or greenhouse) gas emissions, nitrates losses to the water, nitrate accumulation in the soil and the release of inactive N2.

Nitrate losses to water through leaching and runoff decrease in both the S1 and S2 scenarios due to the greater adoption of winter cover crops (see maps in the Annex). The overall decrease in nitrate losses is especially significant in hotspots, where it reaches -3% in S1 and up to -12% in S2. This is due to a combination of a smaller N surplus (related to peatland restoration) and lower loss rates (related to winter cover crops).

Area and income

The moderate scenario S1 has almost no effects on UAA, while in the ambitious scenario S2, productive agricultural area is reduced due to peatland restoration. This reduction implies a decrease in permanent grasslands (-5%), set aside and fallow land. It also implies the conversion of area from other land uses to UAA. These compensation mechanisms from other land uses can in some cases be unrealistic due to given natural conditions, so the model in this case might be underestimating the effect on the UAA. Effects on farm income are negligible in S1 but lead to a decrease in farm income of more than 1% in S2, largely due to higher costs (+1%) (direct costs from the implementation of the farm practices and indirect costs like higher prices for animal feed). Changes in production are very small and include a shift from grass to cereals and fodder maize due to peatland restoration.

Conclusions and caveats

Peatland restoration can effectively help to reduce GHG emissions, N surplus and NH_3 emissions. And soil management practices can help to reduce nutrients leaching to water, soil erosion, and GHG and NH_3 emissions. However, the long-term cost-efficiency of soil management practices with respect to GHG mitigation is not guaranteed as the carbon sink capacity is finite. The simulations showed that soil management practices had moderate negative effects on farm income that are mainly due to higher costs. However, it must be taken into account that the model might be underestimating the effects related to crop area reallocation. Moreover, impacts on CH_4 emissions from peatland restoration and on biodiversity have not been taken into account. Positive effects on biodiversity can, for example, be expected from peatland restoration, but there might also be negative effects from the greater use of herbicides usually linked to tillage practices.

ANNEX /8

This chapter presents figures of macroeconomic and income outlook, balances of key EU agricultural markets and results of uncertainty analysis. In addition, it includes a list of references used in the report. For comparison reasons, simple averages are used for 2023 (2021-2023) in most balances.

In the case of specialised crops, Olympic averages are used instead for the period 2018-2022 to take into account stronger inter-annual variations in production.

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SCENARIOS ON CLIMATE CHANGE

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MARKET OUTLOOK DATA

TABLE 8.1 Baseline assumptions on key macroeconomic variables

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Population growth (EU-27)	0.2%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.2%	-0.2%
Real GDP growth (EU-27)	3.3%	1.7%	1.6%	1.6%	1.6%	1.5%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Inflation (Consumer Price Index) EU-14	5.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Inflation (Consumer Price Index) EU-13	9.6%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Exchange rate (USD/EUR)	110.7%	1.09%	1.10%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.12%
Oil price (USD per barrel Brent)	86	85	87	89	90	92	94	95	97	99	100	102

Sources: DG AGRI estimates based on the European Commission macroeconomic forecasts, OECD-FAO outlook and S&P Global forecasts.

TABLE 8.2 EU area under arable crops (million ha)

													Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Cereals	**51.7**	**51.4**	**51.5**	**51.5**	**51.4**	**51.4**	**51.4**	**51.3**	**51.3**	**51.2**	**51.2**	**51.1**	**-0.5%**	**-0.1%**
Soft wheat	21.8	21.8	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.0	22.0	22.0	0.1%	0.1%
Durum wheat	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	-1.2%	-0.2%
Barley	10.3	10.3	10.3	10.2	10.2	10.1	10.1	10.0	10.0	9.9	9.9	9.8	-0.8%	-0.4%
Maize	8.9	8.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.8	-0.8%	-0.1%
Rye	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-2.6%	0.7%
Other cereals	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.4	6.4	6.4	-0.7%	-0.3%
Rice	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**-1.9%**	**-0.4%**
Oilseeds	**11.5**	**11.8**	**11.8**	**11.8**	**11.7**	**11.7**	**11.7**	**11.6**	**11.6**	**11.6**	**11.6**	**11.5**	**0.7%**	**0.0%**
Rapeseed	5.8	6.0	6.0	5.9	5.9	5.9	5.8	5.8	5.8	5.7	5.7	5.7	-0.1%	-0.2%
Sunseed	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6	4.6	0.6%	-0.1%
Soyabeans	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.3	8.6%	1.7%
Sugar beet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	-0.3%	-0.2%
Roots and tubers	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	-2.0%	-0.3%
Pulses	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	5.1%	2.0%
other arable crops	5.1	6.0	5.9	6.0	6.0	6.1	6.2	6.3	6.4	6.1	6.2	6.4	-0.2%	1.8%
Fodder (green maize, temp. grassland etc.)	19.4	19.8	19.5	19.5	19.5	19.5	19.6	19.6	19.6	19.6	19.6	19.6	-0.8%	0.1%
Utilised arable area	**93.0**	**94.3**	**94.3**	**94.3**	**94.3**	**94.4**	**94.4**	**94.5**	**94.6**	**94.2**	**94.3**	**94.5**	**-0.3%**	**0.1%**
set-aside and fallow land	4.7	5.8	5.9	5.9	6.0	6.0	6.1	6.1	6.2	6.2	6.3	6.3	-4.3%	2.5%
Share of fallow land	*0.1*	*6.2%*	*6.2%*	*6.3%*	*6.3%*	*6.4%*	*6.4%*	*6.5%*	*6.5%*	*6.6%*	*6.7%*	*6.7%*	-4.0%	2.3%
Total arable area	98.9	100.5	100.5	100.6	100.7	100.8	101.0	101.2	101.4	101.1	101.3	101.5	-	-
Permanent grassland	51.2	51.3	51.2	51.1	51.1	51.0	51.0	50.9	50.9	50.8	50.8	50.7	0.4%	-0.1%
Share of permanent grassland in UAA	*0.3*	*31.7%*	*31.7%*	*31.6%*	*31.6%*	*31.6%*	*31.5%*	*31.5%*	*31.5%*	*31.4%*	*31.4%*	*31.3%*	0.6%	-0.1%
Orchards and others	11.8	10.0	10.0	10.0	10.0	9.9	9.8	9.6	9.5	9.9	9.7	9.6	0.1%	-1.7%
Total utilised agricultural area	161.9	161.8	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	-	-

TABLE 8.3 EU cereals market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**279.8**	**280.0**	**280.5**	**280.4**	**280.5**	**280.6**	**280.7**	**280.8**	**280.9**	**281.0**	**281.1**	**281.2**	**0.2%**	**0.0%**
Imports	31.2	25.4	24.7	24.7	24.7	24.6	24.6	24.5	24.5	24.4	24.3	24.2	5.7%	-2.1%
Exports	47.9	47.3	48.1	49.0	49.8	50.2	50.6	50.9	51.3	51.8	52.1	52.5	3.0%	0.8%
Domestic use	**261.8**	**257.3**	**257.0**	**256.1**	**255.3**	**254.9**	**254.6**	**254.3**	**254.1**	**253.5**	**253.3**	**252.9**	**0.1%**	**-0.3%**
of which food and industrial	93.6	91.8	91.7	90.5	89.9	89.9	90.0	90.4	90.7	91.4	91.9	92.2	-0.1%	-0.1%
of which feed	156.8	154.4	154.0	154.0	153.9	153.7	153.6	153.5	153.3	152.5	152.3	152.1	0.2%	-0.3%
of which bioenergy	11.3	11.2	11.3	11.6	11.6	11.3	10.9	10.4	10.0	9.6	9.1	8.6	1.1%	-2.2%
Beginning stocks	42.7	45.1	45.8	45.9	45.9	45.9	46.0	46.1	46.2	46.3	46.4	46.5	3.6%	0.7%
Ending stocks	44.1	45.8	45.9	45.9	45.9	46.0	46.1	46.2	46.3	46.4	46.5	46.6	4.3%	0.5%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Stock-to-use ratio	0.2	17.8%	17.9%	17.9%	18.0%	18.1%	18.1%	18.2%	18.2%	18.3%	18.4%	18.4%	4.1%	0.7%

Note: cereals marketing year is July/June
(a) Difference between 3-year averages
(b) Annual growth based on 3-year averages

TABLE 8.4 EU wheat market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**135.1**	**135.0**	**135.2**	**135.1**	**135.2**	**135.3**	**135.4**	**135.6**	**135.7**	**135.8**	**135.9**	**136.0**	**0.7%**	**0.1%**
Imports	8.4	5.7	5.4	5.3	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	2.8%	-4.1%
Exports	32.2	32.3	33.1	33.8	34.3	34.5	34.7	34.9	35.2	35.6	35.8	36.2	2.8%	1.0%
Domestic use	**108.9**	**108.0**	**107.4**	**106.7**	**106.2**	**106.2**	**106.0**	**105.9**	**105.7**	**105.3**	**105.2**	**104.8**	**0.0%**	**-0.3%**
of which food and industrial	62.7	60.2	59.9	59.4	59.2	59.6	59.8	60.1	60.4	60.5	60.7	60.9	-0.1%	-0.2%
of which feed	43.0	44.5	44.2	43.9	43.6	43.3	43.0	42.7	42.4	42.1	41.8	41.5	0.5%	-0.3%
of which bioenergy	3.2	3.3	3.4	3.4	3.4	3.3	3.2	3.1	2.9	2.8	2.7	2.5	-2.9%	-2.1%
Beginning stocks	15.6	16.0	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	5.2%	0.3%
Ending stocks	18.0	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	6.1%	-0.8%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-

Note: the wheat marketing year is July/June

TABLE 8.5 EU coarse grains market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**144.7**	**145.0**	**145.4**	**145.3**	**145.2**	**145.3**	**145.3**	**145.3**	**145.3**	**145.3**	**145.2**	**145.2**	**-0.2%**	**0.0%**
Imports	22.9	19.7	19.4	19.4	19.4	19.3	19.3	19.3	19.3	19.2	19.2	19.2	7.1%	-1.5%
Exports	15.7	15.0	15.0	15.2	15.5	15.7	15.9	16.0	16.1	16.2	16.2	16.3	3.3%	0.3%
Domestic use	**152.8**	**149.3**	**149.6**	**149.4**	**149.1**	**148.8**	**148.5**	**148.5**	**148.4**	**148.2**	**148.1**	**148.0**	**0.2%**	**-0.3%**
of which food and industrial	30.9	31.6	31.8	31.2	30.6	30.4	30.2	30.3	30.3	31.0	31.1	31.3	0.0%	0.1%
of which feed	113.8	109.9	109.8	110.1	110.3	110.5	110.7	110.8	110.9	110.5	110.5	110.6	0.1%	-0.2%
of which bioenergy	8.1	7.8	8.0	8.2	8.2	8.0	7.7	7.4	7.1	6.8	6.4	6.1	3.4%	-2.3%
Beginning stocks	27.1	29.1	29.5	29.6	29.6	29.6	29.7	29.8	29.9	30.0	30.1	30.2	2.7%	0.9%
Ending stocks	26.1	29.5	29.6	29.6	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	3.2%	1.2%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-

Note: the coarse grains marketing year is July/June

TABLE 8.6 EU soft wheat market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**127.7**	**127.4**	**127.6**	**127.6**	**127.7**	**127.8**	**127.9**	**128.1**	**128.2**	**128.3**	**128.4**	**128.5**	**0.8%**	**0.1%**
Yield (t/ha)	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**5.8**	**0.7%**	**0.0%**
Imports	6.3	2.6	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.3	3.9%	-8.1%
Exports	31.3	31.4	32.2	32.9	33.4	33.6	33.8	34.0	34.3	34.7	34.9	35.3	3.1%	1.0%
Domestic use	**99.6**	**98.6**	**98.0**	**97.3**	**96.8**	**96.8**	**96.6**	**96.5**	**96.3**	**95.9**	**95.8**	**95.5**	**0.0%**	**-0.4%**
of which food and industrial	53.6	51.0	50.6	50.1	50.0	50.3	50.6	50.9	51.1	51.2	51.5	51.6	-0.1%	-0.3%
of which feed	42.8	44.3	44.0	43.7	43.4	43.1	42.8	42.5	42.2	41.9	41.6	41.3	0.5%	-0.3%
of which bioenergy	3.2	3.3	3.4	3.4	3.4	3.3	3.2	3.1	2.9	2.8	2.7	2.5	-2.9%	-2.1%
Beginning stocks	14.4	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	5.8%	0.6%
Ending stocks	17.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	7.0%	-1.0%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
EU price in EUR/t	279	233	233	235	237	239	241	243	245	247	249	252	2.6%	-0.8%
EU intervention price in EUR/t	101	101	101	101	101	101	101	101	101	101	101	101	-	-

Note: the soft wheat marketing year is July/June

TABLE 8.7 EU durum wheat market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**7.4**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**7.5**	**-1.1%**	**0.1%**
Yield (t/ha)	**3.4**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**3.5**	**0.1%**	**0.2%**
Imports	2.1	3.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0.2%	2.4%
Exports	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	-4.1%	0.0%
Domestic use	**9.3**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**9.4**	**0.3%**	**0.1%**
of which food and industrial	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	0.2%	0.1%
of which feed	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.1%	-0.9%
Beginning stocks	1.2	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.2%	-3.4%
Ending stocks	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-7.4%	3.6%

Note: the durum wheat marketing year is July/June

TABLE 8.8 EU barley market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**50.9**	**51.2**	**51.2**	**50.9**	**50.6**	**50.5**	**50.3**	**50.1**	**49.8**	**49.6**	**49.4**	**49.1**	**0.3%**	**-0.3%**
Yield (t/ha)	**4.9**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**1.1%**	**0.1%**
Imports	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	7.8%	-1.4%
Exports	10.1	9.8	9.8	10.0	10.3	10.5	10.8	10.9	11.0	11.1	11.2	11.3	3.4%	0.9%
Domestic use	**42.3**	**42.6**	**42.6**	**42.2**	**41.7**	**41.2**	**40.8**	**40.4**	**40.1**	**39.8**	**39.5**	**39.1**	**-0.3%**	**-0.7%**
of which food and industrial	9.4	10.5	10.6	10.1	9.5	9.0	8.5	8.1	7.8	7.4	7.0	6.6	-0.6%	-2.9%
of which feed	32.3	31.6	31.6	31.7	31.7	31.8	31.9	31.9	32.0	32.0	32.1	32.2	-0.3%	0.0%
of which bioenergy	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	1.7%	-4.5%
Beginning stocks	4.8	4.7	4.8	4.8	4.8	4.8	4.8	4.9	4.9	4.9	4.9	5.0	-2.5%	0.3%
Ending stocks	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9	4.9	4.9	5.0	5.0	-1.4%	0.4%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
EU price in EUR/t	263	179	178	181	185	187	190	192	194	196	199	201	2.9%	-2.2%

Note: the barley marketing year is July/June

TABLE 8.9 EU maize market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**62.1**	**62.3**	**62.5**	**62.6**	**62.8**	**63.0**	**63.1**	**63.3**	**63.5**	**63.6**	**63.8**	**64.0**	**-0.6%**	**0.2%**
Yield (t/ha)	**7.0**	**7.2**	**7.2**	**7.2**	**7.2**	**7.2**	**7.3**	**7.3**	**7.3**	**7.3**	**7.3**	**7.3**	**0.2%**	**0.4%**
Imports	20.7	18.1	17.9	17.8	17.9	17.8	17.8	17.8	17.8	17.7	17.7	17.6	7.3%	-1.3%
Exports	5.2	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.3	4.2	3.4%	-1.7%
Domestic use	**78.2**	**75.6**	**75.5**	**75.7**	**76.0**	**76.2**	**76.4**	**76.6**	**76.8**	**77.0**	**77.1**	**77.4**	**0.6%**	**-0.1%**
of which food and industrial	11.5	9.8	9.7	9.6	9.6	9.8	10.0	10.3	10.6	10.9	11.2	11.6	-0.7%	0.1%
of which feed	60.5	59.3	59.2	59.4	59.6	59.8	60.0	60.2	60.3	60.4	60.6	60.8	0.6%	0.0%
of which bioenergy	6.2	6.4	6.6	6.7	6.8	6.6	6.4	6.1	5.9	5.6	5.4	5.1	3.9%	-1.7%
Beginning stocks	19.6	19.5	19.6	19.6	19.7	19.7	19.8	19.8	19.8	19.9	19.9	20.0	6.0%	0.2%
Ending stocks	19.0	19.6	19.6	19.7	19.7	19.8	19.8	19.8	19.9	19.9	20.0	20.0	6.9%	0.4%
of which intervention	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
EU price in EUR/t	278	206	207	208	211	213	215	217	220	222	225	228	3.0%	-1.7%

Note: the maize marketing year is July/June

TABLE 8.10 EU other cereals* market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**31.7**	**31.6**	**31.7**	**31.8**	**31.8**	**31.9**	**31.9**	**31.9**	**32.0**	**32.0**	**32.0**	**32.1**	**-0.2%**	**0.1%**
Yield (t/ha)	**3.8**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**1.0%**	**0.2%**
Imports	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.1%	-7.9%
Exports	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	-1.4%	6.4%
Domestic use	**32.3**	**31.2**	**31.4**	**31.4**	**31.4**	**31.4**	**31.4**	**31.4**	**31.5**	**31.5**	**31.5**	**31.5**	**0.1%**	**-0.2%**
of which food and industrial	10.0	11.2	11.5	11.5	11.5	11.6	11.7	11.9	12.0	12.7	12.9	13.1	1.5%	2.3%
of which feed	21.0	19.0	18.9	18.9	18.9	18.8	18.8	18.7	18.7	18.0	17.8	17.7	-0.6%	-1.4%
of which bioenergy	1.3	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	1.8%	-5.3%
Beginning stocks	2.7	4.9	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	-2.4%	5.6%
Ending stocks	2.3	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.3	-5.0%	7.1%

**Rye, Oats and other cereals*
Note: the other cereals marketing year is July/June

TABLE 8.11 EU rice balance (million t milled equivalent)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	**1.5**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**-1.5%**	**-0.4%**
Yield (t/ha)	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**4.1**	**0.4%**	**0.0%**
Imports	2.6	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	7.8%	0.9%
Exports	0.4	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	1.4%	4.5%
Consumption	**3.7**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.5%**	**-0.2%**
Beginning stocks	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.9%	-0.1%
Ending stocks	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.7%	0.0%
EU price in EUR/t	593	595	605	612	622	629	636	643	651	657	664	671	0.3%	1.0%

Note: the rice marketing year is September/August

TABLE 8.12 EU oilseed* (grains and beans) market balance (million t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Yield (t/ha)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0.8%	-0.1%
Sunflower seed	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.3%	0.3%
Soya bean	2.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0.4%	0.6%
Production	**31.4**	**32.2**	**32.4**	**32.2**	**32.2**	**32.1**	**32.1**	**32.0**	**32.0**	**31.9**	**31.9**	**31.8**	**1.6%**	**0.1%**
Rapeseed	18.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0.8%	-0.3%
Sunflower seed	10.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8%	0.2%
Soya bean	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	8.9%	2.3%
Imports	22.0	18.7	18.6	18.6	18.6	18.5	18.5	18.5	18.4	18.4	18.3	18.3	2.7%	-1.5%
Exports	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	2.6%	-1.5%
Domestic use	**51.8**	**50.0**	**50.0**	**49.9**	**49.8**	**49.7**	**49.6**	**49.5**	**49.4**	**49.3**	**49.2**	**49.1**	**1.9%**	**-0.5%**
of which crushing	47.3	45.2	45.2	45.1	45.0	44.9	44.8	44.8	44.7	44.6	44.5	44.5	1.9%	-0.5%
Beginning stocks	2.5	2.8	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.5	-1.9%	0.1%
Ending stocks	2.7	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.5	-0.1%	-0.7%
EU price in EUR/t (rapeseed)	608	515	522	537	541	552	563	575	587	598	609	620	3.3%	0.2%

**Rapeseed, sunflower seed, soya bean and groundnuts*
Note: the oilseed marketing year is July/June

TABLE 8.13 EU oilseed meal* market balance (million t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**29.6**	**29.7**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**1.9%**	**0.0%**
Imports	20.0	20.5	20.2	20.0	19.8	19.7	19.5	19.3	19.1	19.0	18.8	18.6	-0.7%	-0.6%
Exports	2.4	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4%	-0.4%
Domestic use	**47.2**	**48.3**	**48.0**	**47.8**	**47.6**	**47.3**	**47.1**	**46.9**	**46.7**	**46.5**	**46.3**	**46.1**	**0.7%**	**-0.2%**
Beginning stocks	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.2%	-9.1%
Ending stocks	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2%	-9.1%
EU price in EUR/t (soya bean meal)	549	488	491	498	502	507	512	517	522	527	533	539	2.9%	-0.2%

**Tables include rapeseed, soya bean, sunflower and groundnuts; in Table vegetable oil palm oil, cottonneseed oil, palmkernel oil and coconut oil are added.*
Note: the oilseed meal marketing year is July/June

TABLE 8.14 EU oilseed oil* market balance (million t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**16.7**	**15.7**	**15.7**	**15.7**	**15.6**	**15.6**	**15.6**	**15.5**	**15.5**	**15.5**	**15.4**	**15.4**	**2.0%**	**-0.6%**
Imports	3.0	2.8	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.7	2.7	2.7	5.4%	-0.7%
Exports	2.2	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	1.7%	0.0%
Domestic use	**17.0**	**16.7**	**16.7**	**16.7**	**16.6**	**16.6**	**16.5**	**16.5**	**16.5**	**16.4**	**16.4**	**16.4**	**2.4%**	**-0.3%**
Beginning stocks	2.0	2.7	2.6	2.5	2.5	2.4	2.3	2.2	2.2	2.1	2.1	2.1	6.4%	0.4%
Ending stocks	2.4	2.6	2.5	2.5	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	7.3%	-0.9%
EU price in EUR/t (rapeseed oil)	1 329	1 083	1 100	1 122	1 143	1 164	1 188	1 221	1 255	1 288	1 319	1 348	4.3%	0.1%

**Tables include rapeseed, soya bean, sunflower and groundnuts; in Table vegetable oil palm oil, cottonneseed oil, palmkernel oil and coconut oil are added.*
Note: the oilseed oil marketing year is July/June

TABLE 8.15 EU vegetable oil* market balance (million t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%)	
													2013-2023	2023-2035
Production	**16.7**	**15.8**	**15.8**	**15.7**	**15.7**	**15.6**	**15.6**	**15.6**	**15.5**	**15.5**	**15.5**	**15.5**	**1.9%**	**-0.6%**
Imports	10.1	9.0	8.6	8.3	8.1	7.7	7.5	7.3	7.1	7.1	7.0	7.0	1.2%	-3.0%
Exports	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	1.3%	0.0%
Domestic use	**23.9**	**22.7**	**22.3**	**22.1**	**21.8**	**21.5**	**21.2**	**21.0**	**20.8**	**20.7**	**20.6**	**20.4**	**1.6%**	**-1.3%**
of which food	10.6	10.3	10.2	10.2	10.1	10.1	10.0	10.0	9.9	9.9	9.8	9.8	2.1%	-0.7%
of which other uses	1.9	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.5	-0.6%	2.1%
of which bioenergy	11.4	10.0	9.6	9.3	9.1	8.8	8.6	8.4	8.3	8.3	8.3	8.2	1.5%	-2.7%
Beginning stocks	2.2	2.9	2.8	2.7	2.7	2.6	2.5	2.4	2.4	2.3	2.3	2.3	4.4%	0.3%
Ending stocks	2.6	2.8	2.7	2.7	2.6	2.5	2.4	2.4	2.3	2.3	2.3	2.3	5.2%	-0.9%

**Tables include rapeseed, soya bean, sunflower and groundnuts; in Table vegetable oil palm oil, cottonneseed oil, palmkernel oil and coconut oil are added.*
Note: the vegetable oil marketing year is July/June

TABLE 8.16 EU sugar market balance (million t white sugar equivalent)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%)	
													2013-2023	2023-2035
Sugar beet production (million tonnes)	**108.7**	**107.9**	**107.4**	**106.8**	**106.2**	**105.7**	**105.2**	**104.7**	**104.3**	**103.9**	**103.5**	**103.0**	**0.1%**	**-0.4%**
of which for ethanol	8.1	8.4	8.4	8.5	8.4	8.0	7.5	7.1	6.6	6.2	5.8	5.4	-5.1%	-3.4%
of which processed for sugar	100.6	99.4	99.0	98.3	97.9	97.7	97.6	97.7	97.7	97.7	97.7	97.7	0.6%	-0.2%
Yield (t/ha)	**74.1**	**73.0**	**72.9**	**72.7**	**72.5**	**72.4**	**72.3**	**72.2**	**72.2**	**72.1**	**72.1**	**72.1**	**0.4%**	**-0.2%**
Sugar production*	**15.3**	**15.7**	**15.6**	**15.5**	**15.4**	**15.4**	**15.4**	**15.3**	**15.3**	**15.3**	**15.3**	**15.2**	**0.2%**	**-0.1%**
Imports	1.9	1.3	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.0	0.9	0.9	-7.9%	-6.5%
Exports	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-9.5%	0.7%
Domestic use	**16.6**	**16.2**	**16.1**	**16.1**	**16.0**	**15.9**	**15.8**	**15.7**	**15.7**	**15.6**	**15.5**	**15.4**	**-0.6%**	**-0.6%**
Beginning stocks**	1.4	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	1.9	1.9	-4.8%	2.8%
Ending stocks**	1.5	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.9	-5.8%	1.9%
EU white sugar price in EUR/t	606	523	501	486	475	465	458	454	451	452	452	454	-1.0%	-2.4%

**Sugar production is adjusted for carry forward quantities and does not include ethanol feedstock quantities.*
***Stocks include carry forward quantities. 2005-2019 data for EU-28.*

TABLE 8.17 EU isoglucose market balance (million t white sugar equivalent)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%)	
													2013-2023	2023-2035
Isoglucose production	**585.7**	**629.9**	**646.3**	**662.8**	**679.4**	**696.1**	**713.0**	**729.8**	**746.8**	**763.9**	**781.0**	**798.1**	**-2.0%**	**2.6%**
Isoglucose consumption	*520.2*	*592.4*	*611.2*	*629.8*	*648.8*	*668.0*	*686.5*	*704.9*	*722.2*	*739.4*	*756.3*	*773.6*	-2.8%	3.4%
Imports	*3.4*	*4.711*	*5.722*	*6.921*	*8.002*	*9.045*	*9.826*	*10.685*	*11.209*	*11.636*	*11.755*	*11.978*	-13.2%	11.2%
Exports	*68.8*	*42.162*	*40.777*	*39.955*	*38.593*	*37.200*	*36.297*	*35.637*	*35.848*	*36.096*	*36.431*	*36.434*	4.8%	-5.2%

Note: the isoglucose marketing year is October/September

TABLE 8.18 EU biofuels market balance (million t oil equivalent)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**18.0**	**18.4**	**18.2**	**18.0**	**17.8**	**17.5**	**17.2**	**17.0**	**16.7**	**16.3**	**15.8**	**15.2**	**4.1%**	**-1.4%**
Ethanol	3.1	3.5	3.6	3.7	3.7	3.7	3.7	3.6	3.5	3.3	3.1	2.9	0.9%	-0.8%
...based on wheat	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	-2.9%	-2.1%
...based on maize	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0	3.9%	-1.7%
...based on other cereals	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	1.7%	-5.0%
...based on sugar beet and molasses	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	-5.4%	-2.5%
...advanced	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	8.0%	3.4%
Biodiesel	14.8	14.8	14.6	14.3	14.0	13.8	13.5	13.4	13.2	13.0	12.7	12.3	4.9%	-1.5%
...based on rape oils	5.8	5.3	5.3	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3	1.0%	-0.8%
...based on palm oils	3.0	2.3	2.1	1.8	1.6	1.4	1.2	1.1	0.9	0.7	0.6	0.5	2.5%	-14.5%
...based on other vegetable oils	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	2.0%	-0.3%
...based on waste oils	3.6	3.7	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.8	16.6%	0.5%
...other advanced	1.6	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.2	2.1	1.9	32.7%	1.7%
Net trade	- 2.3	- 1.6	- 1.4	- 1.2	- 1.1	- 1.0	- 0.9	- 0.9	- 1.0	- 1.0	- 1.0	- 1.0	3.9%	-6.7%
Ethanol imports	*0.8*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	6.6%	-5.5%
Ethanol exports	*0.2*	*0.2*	*0.3*	*0.4*	*0.5*	*0.5*	*0.5*	*0.5*	*0.4*	*0.4*	*0.4*	*0.3*	-0.2%	3.4%
Biodiesel imports	*2.6*	*2.4*	*2.4*	*2.3*	*2.2*	*2.2*	*2.2*	*2.2*	*2.3*	*2.3*	*2.3*	*2.2*	3.3%	-1.3%
Biodiesel exports	*0.9*	*1.1*	*1.1*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.3*	*1.3*	*1.3*	*1.3*	5.7%	3.3%
Domestic use	**19.7**	**19.8**	**19.8**	**19.5**	**19.4**	**19.0**	**18.6**	**18.4**	**18.3**	**17.6**	**16.8**	**15.8**	**4.0%**	**-1.8%**
Ethanol for fuel	2.6	2.8	2.8	2.8	2.7	2.7	2.6	2.5	2.4	2.3	2.2	1.9	2.8%	-2.7%
non fuel use of ethanol	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.4%	-0.5%
Biodiesel	16.0	14.8	14.6	14.3	14.0	13.8	13.5	13.4	13.2	13.0	12.7	12.3	4.3%	-1.8%
Gasoline consumption	62.6	60.0	58.3	56.2	53.7	51.1	48.2	45.4	42.8	40.1	37.2	32.6	-0.9%	-5.3%
Diesel consumption	172.3	161.6	156.4	150.0	143.0	135.7	127.6	121.2	115.5	109.9	103.8	96.7	0.3%	-4.7%
Biofuels energy share (% RED counting)	**10.4**	**11.8**	**12.2**	**12.6**	**13.1**	**13.7**	**14.3**	**14.9**	**15.6**	**15.9**	**16.3**	**16.6**	**6.1%**	**4.0%**
Energy share: 1st-generation	5.6	5.3	5.4	5.5	5.7	5.8	5.9	6.0	6.4	6.4	6.3	6.4	1.2%	1.2%
Energy share: based on waste oils	2.4	3.2	3.3	3.5	3.6	3.9	4.1	4.4	4.5	4.7	4.9	5.0	19.0%	6.4%
Energy share: other advanced	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	39.7%	9.7%
Energy share: Ethanol in Gasoline	4.3	4.7	4.8	5.0	5.2	5.3	5.5	5.6	5.8	5.9	5.9	6.0	3.7%	2.7%
Energy share: Biodiesel in Diesel	9.3	10.0	10.3	10.6	11.0	11.4	11.8	12.3	12.9	13.1	13.2	13.4	4.0%	3.1%
Ethanol producer price in EUR/hl	80	66	66	65	65	66	66	67	68	69	69	70	2.5%	-1.1%
Biodiesel producer price in EUR/hl	154	102	108	106	107	108	110	115	120	121	123	125	5.4%	-1.7%

TABLE 8.19 EU milk market balance

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Dairy cows (million heads)	**19.8**	**19.3**	**19.1**	**18.9**	**18.7**	**18.5**	**18.3**	**18.1**	**17.9**	**17.7**	**17.5**	**17.3**	**-0.7%**	**-1.1%**
Milk yield (kg/cow)	**7641**	**7853**	**7917**	**7985**	**8053**	**8121**	**8189**	**8257**	**8324**	**8391**	**8458**	**8524**	**1.8%**	**0.9%**
Dairy cow milk production (million t)	**151.3**	**151.6**	**151.1**	**150.8**	**150.5**	**150.1**	**149.7**	**149.4**	**149.0**	**148.5**	**148.1**	**147.6**	**1.1%**	**-0.2%**
Total cow milk production (million t)	**153.8**	**154.2**	**153.7**	**153.5**	**153.2**	**152.8**	**152.5**	**152.1**	**151.7**	**151.3**	**150.9**	**150.4**	**1.1%**	**-0.2%**
Fat content of milk (%)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	0.2%	0.1%
Non-fat solid content of milk (%)	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	0.3%	0.0%
Delivered to dairies (million t)	**144.9**	**145.7**	**145.4**	**145.2**	**145.1**	**144.9**	**144.7**	**144.5**	**144.2**	**143.9**	**143.5**	**143.2**	**1.3%**	**-0.1%**
Delivery ratio (%)	*94.2*	*94.5*	*94.5*	*94.6*	*94.7*	*94.8*	*94.9*	*95.0*	*95.0*	*95.1*	*95.2*	*95.2*	0.3%	0.1%
On-farm use and direct sales (million t)	8.9	8.5	8.4	8.2	8.1	7.9	7.8	7.7	7.5	7.4	7.3	7.2	-2.3%	-1.8%
EU Milk producer price in EUR/t (real fat content)	457	415	428	436	443	451	459	468	477	485	494	503	3.1%	0.8%

TABLE 8.20 EU fresh dairy products market balance (1 000 t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**37 442**	**36 675**	**36 462**	**36 206**	**35 951**	**35 699**	**35 443**	**35 192**	**34 941**	**34 690**	**34 438**	**34 186**	**-0.3%**	**-0.8%**
of which fresh milk	22 903	22 330	21 929	21 536	21 151	20 772	20 401	20 037	19 680	19 329	18 985	18 647	-0.8%	-1.7%
of which cream	2 517	2 497	2 511	2 524	2 538	2 551	2 565	2 579	2 593	2 607	2 621	2 635	1.2%	0.4%
of which yogurt	7 660	7 532	7 536	7 540	7 545	7 549	7 554	7 558	7 562	7 567	7 571	7 576	-0.2%	-0.1%
Net trade	1 030	823	873	870	867	868	864	865	864	865	864	864	7.7%	-1.4%
Consumption	**36 413**	**35 853**	**35 588**	**35 336**	**35 084**	**34 831**	**34 579**	**34 328**	**34 076**	**33 825**	**33 573**	**33 322**	**-0.5%**	**-0.7%**
of which fresh milk	22 245	21 500	21 179	20 864	20 551	20 238	19 925	19 610	19 295	19 048	18 800	18 551	-1.0%	-1.5%
of which cream	2 326	2 363	2 367	2 371	2 375	2 380	2 384	2 388	2 388	2 387	2 386	2 384	0.7%	0.2%
of which yogurt	7 467	7 534	7 530	7 530	7 530	7 531	7 530	7 528	7 526	7 518	7 508	7 498	-0.4%	0.0%
per capita consumption (kg)	***81***	***79.5***	***79.1***	***78.6***	***78.1***	***77.6***	***77.1***	***76.7***	***76.2***	***75.8***	***75.3***	***74.9***	***-0.7%***	***-0.7%***
of which fresh milk	49	47.7	47.0	46.4	45.7	45.1	44.5	43.8	43.2	42.7	42.2	41.7	-1.1%	-1.4%
of which cream	5	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.4	0.5%	0.3%
of which yogurt	17	16.7	16.7	16.7	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.9	-0.5%	0.1%
of which other FDP	10	9.8	9.9	9.9	10.0	10.0	10.1	10.1	10.2	10.1	10.1	10.0	1.3%	0.2%

TABLE 8.21 EU cheese market balance (1 000 t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**10 814**	**10 989**	**10 999**	**11 021**	**11 054**	**11 084**	**11 116**	**11 146**	**11 176**	**11 203**	**11 232**	**11 260**	**1.6%**	**0.3%**
Imports	186	172	176	177	178	179	180	181	183	184	185	187	0.5%	0.0%
Exports	1 359	1 401	1 391	1 404	1 417	1 429	1 442	1 453	1 464	1 475	1 486	1 497	1.6%	0.8%
Domestic use	**9 666**	**9 750**	**9 784**	**9 794**	**9 814**	**9 834**	**9 854**	**9 875**	**9 895**	**9 912**	**9 931**	**9 950**	**1.6%**	**0.2%**
per capita consumption (kg)	***21.5***	***21.6***	***21.7***	***21.8***	***21.8***	***21.9***	***22.0***	***22.1***	***22.1***	***22.2***	***22.3***	***22.4***	***1.4%***	***0.3%***
Variation in stocks	- 25	10	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (Cheddar)	3 809	4 228	4 322	4 393	4 469	4 548	4 628	4 710	4 791	4 871	4 953	5 036	1.7%	2.4%

TABLE 8.22 EU butter market balance (1 000 t)

												Annual growth (%)	
	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2013-2023	2023-2035
Production	**2 334**	**2 345**	**2 338**	**2 340**	**2 341**	**2 343**	**2 343**	**2 345**	**2 345**	**2 346**	**2 346**	**2 347**	**1.6%**	**0.0%**
Imports	52	52	44	44	44	44	44	44	44	44	44	44	0.8%	-1.3%
Exports	255	265	257	259	260	262	263	264	265	265	265	266	2.1%	0.3%
Domestic use	**2 125**	**2 142**	**2 135**	**2 125**	**2 125**	**2 125**	**2 125**	**2 125**	**2 125**	**2 125**	**2 125**	**2 125**	**1.6%**	**0.0%**
per capita consumption (kg)	***5***	***4.8***	***4.7***	***4.7***	***4.7***	***4.7***	***4.7***	***4.7***	***4.8***	***4.8***	***4.8***	***4.8***	***1.4%***	***0.1%***
Ending Stocks	145	130	120	120	120	120	120	120	120	120	120	120	4.8%	-1.6%
of which private	145	130	120	120	120	120	120	120	120	120	120	120	4.8%	-1.6%
of which intervention	0	0	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (EU-14)	5197	4993	5095	5131	5169	5207	5244	5311	5375	5436	5497	5557	3.8%	0.6%
EU intervention price in EUR/t	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	-	-

TABLE 8.23 EU SMP market balance (1 000 t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**1 457**	**1 480**	**1 452**	**1 456**	**1 460**	**1 464**	**1 467**	**1 472**	**1 477**	**1 482**	**1 487**	**1 492**	**3.4%**	**0.2%**
Imports	35	37	37	37	37	37	37	37	37	37	37	37	4.9%	0.5%
Exports	772	744	739	742	745	749	752	756	760	764	768	772	4.3%	0.0%
Domestic use	**719**	**772**	**750**	**751**	**751**	**752**	**752**	**753**	**754**	**755**	**756**	**757**	**1.5%**	**0.4%**
Ending Stocks	98	95	95	95	95	95	95	95	95	95	95	95	-0.1%	-0.3%
of which private	98	95	95	95	95	95	95	95	95	95	95	95	1.2%	-0.3%
of which intervention	0	0	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (EU-14)	2 905	2 475	2 563	2 634	2 707	2 779	2 853	2 927	3 001	3 075	3 149	3 225	1.2%	0.9%

TABLE 8.24 EU WMP market balance (1 000 t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**603**	**574**	**561**	**554**	**547**	**539**	**532**	**525**	**518**	**511**	**503**	**496**	**-0.7%**	**-1.6%**
Imports	17	12	12	12	12	12	12	12	12	12	12	12	-5.3%	-2.8%
Exports	259	233	219	211	203	195	187	179	171	162	154	145	-3.8%	-4.7%
Domestic use	**361**	**353**	**353**	**354**	**355**	**356**	**357**	**358**	**359**	**360**	**362**	**363**	**2.1%**	**0.0%**
EU market price in EUR/t (EU-14)	3 838	3 431	3 314	3 355	3 405	3 464	3 524	3 594	3 664	3 729	3 799	3 871	2.2%	0.1%

TABLE 8.25 EU whey market balance (1 000 t)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Production	**2 193**	**2 239**	**2 236**	**2 241**	**2 246**	**2 251**	**2 256**	**2 261**	**2 266**	**2 271**	**2 276**	**2 281**	**2.1%**	**0.3%**
Imports	44	50	51	51	51	51	51	52	52	52	52	52	-2.3%	1.4%
Exports	691	708	707	707	709	712	715	718	720	723	726	729	3.1%	0.4%
Domestic use	**1 546**	**1 581**	**1 579**	**1 585**	**1 588**	**1 590**	**1 593**	**1 595**	**1 598**	**1 600**	**1 602**	**1 604**	**1.5%**	**0.3%**
EU market price in EUR/t (EU-14)	945	726	751	776	801	827	852	877	902	928	954	980	-0.2%	0.3%

TABLE 8.26 Aggregate EU meat market balance (1 000 t c.w.e.)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Gross Indigenous Production	**43 109**	**42 216**	**42 102**	**41 998**	**41 886**	**41 775**	**41 658**	**41 545**	**41 433**	**41 321**	**41 209**	**41 097**	**0.6%**	**-0.4%**
Imports of live animals	5	6	6	6	6	6	6	6	6	6	6	6	4.2%	0.8%
Exports of live animals	312	316	308	299	291	282	274	266	258	251	244	236	3.1%	-2.3%
Net Production	**42 801**	**41 905**	**41 800**	**41 704**	**41 600**	**41 498**	**41 389**	**41 284**	**41 180**	**41 075**	**40 971**	**40 866**	**0.6%**	**-0.4%**
Imports (meat)	1 384	1 518	1 518	1 521	1 525	1 530	1 534	1 538	1 541	1 546	1 550	1 552	-1.4%	1.0%
Exports (meat)	6 565	5 950	5 991	6 038	6 044	6 044	6 054	6 077	6 090	6 122	6 154	6 175	1.9%	-0.5%
Net trade (meat)	5 182	4 432	4 473	4 517	4 519	4 514	4 520	4 538	4 549	4 577	4 604	4 623	3.0%	-0.9%
Domestic use	**37 642**	**37 452**	**37 336**	**37 197**	**37 087**	**36 975**	**36 875**	**36 745**	**36 632**	**36 500**	**36 372**	**36 247**	**0.3%**	**-0.3%**
per capita consumption (kg r.w.e.)*	***67.0***	***66.6***	***66.5***	***66.3***	***66.2***	***66.1***	***66.0***	***65.9***	***65.8***	***65.7***	***65.5***	***65.4***	***0.2%***	***-0.2%***
of which Beef and Veal meat	*10.2*	9.9	9.9	9.8	9.8	9.7	9.7	9.7	9.6	9.6	9.5	9.5	-0.3%	-0.6%
of which Sheep and Goat meat	*1.3*	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-1.1%	0.0%
of which Pig meat	*31.8*	30.8	30.7	30.6	30.5	30.4	30.3	30.2	30.1	29.9	29.8	29.7	-0.6%	-0.6%
of which Poultry meat	*23.7*	24.5	24.6	24.6	24.6	24.7	24.7	24.7	24.8	24.8	24.8	24.9	1.6%	0.4%

** r.w.e. = retail weight equivalent; Coefficients to transform carcass weight into retail weight are 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both poultry meat and sheep and goat meat*

TABLE 8.27 EU beef and veal meat market balance (1 000 t c.w.e.)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Total number of cows (million heads)	**30.2**	**29.5**	**29.2**	**28.9**	**28.6**	**28.4**	**28.1**	**27.9**	**27.6**	**27.3**	**27.1**	**26.8**	**-0.5%**	**-1.0%**
of which dairy cows	19.8	19.3	19.1	18.9	18.7	18.5	18.3	18.1	17.9	17.7	17.5	17.3	-0.7%	-1.1%
of which sukler cows	10.4	10.2	10.1	10.0	10.0	9.9	9.8	9.8	9.7	9.6	9.6	9.5	-0.1%	-0.7%
Gross Indigenous Production	**6 954**	**6 722**	**6 678**	**6 638**	**6 599**	**6 558**	**6 515**	**6 475**	**6 434**	**6 394**	**6 353**	**6 312**	**0.0%**	**-0.8%**
Imports of live animals	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-8.1%	3.1%
Exports of live animals	213.0	215	208	200	193	185	178	171	163	156	149	141	3.4%	-3.4%
Net Production	**6 741**	**6 508**	**6 472**	**6 439**	**6 407**	**6 373**	**6 338**	**6 305**	**6 272**	**6 239**	**6 205**	**6 172**	**-0.1%**	**-0.7%**
Imports (meat)	328	367	369	372	375	379	384	388	391	395	399	400	-0.3%	1.7%
Exports (meat)	522	493	497	501	506	510	514	518	522	526	530	534	0.6%	0.2%
Net trade (meat)	195	126	127	129	131	130	130	130	131	131	131	134	2.4%	-3.1%
Domestic use	**6 549**	**6 372**	**6 347**	**6 314**	**6 279**	**6 244**	**6 209**	**6 175**	**6 142**	**6 107**	**6 075**	**6 038**	**-0.2%**	**-0.7%**
per capita consumption (kg r.w.e.)*	***10.2***	***9.9***	***9.9***	***9.8***	***9.8***	***9.7***	***9.7***	***9.7***	***9.6***	***9.6***	***9.5***	***9.5***	***-0.3%***	***-0.6%***
EU market price in EUR/t	4 590	4 331	4 364	4 428	4 512	4 601	4 684	4 769	4 859	4 944	5 037	5 132	2.1%	0.9%

** r.w.e. = retail weight equivalent; Coefficient to transform carcass weight into retail weight is 0.7 for beef and veal.*

TABLE 8.28 EU pigmeat market balance (1 000 t c.w.e.)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	2023-2035
Gross Indigenous Production	**22 258**	**21 201**	**21 117**	**21 038**	**20 949**	**20 861**	**20 769**	**20 678**	**20 586**	**20 494**	**20 402**	**20 310**	**0.1%**	**-0.8%**
Imports of live animals	1	2	2	2	2	2	2	2	2	2	2	2	15.4%	4.1%
Exports of live animals	45	50	50	50	50	50	50	50	50	50	50	50	-1.0%	0.9%
Net Production	**22 214**	**21 153**	**21 068**	**20 990**	**20 901**	**20 812**	**20 721**	**20 629**	**20 538**	**20 445**	**20 354**	**20 262**	**0.1%**	**-0.8%**
Imports (meat)	105	93	96	94	92	90	88	86	84	83	82	81	-3.8%	-2.2%
Exports (meat)	4 017	3 431	3 437	3 462	3 446	3 431	3 405	3 408	3 395	3 400	3 402	3 397	2.6%	-1.4%
Net trade (meat)	3 912	3 338	3 341	3 369	3 355	3 342	3 318	3 322	3 311	3 317	3 320	3 316	2.9%	-1.4%
Domestic use	**18 321**	**17 815**	**17 727**	**17 621**	**17 546**	**17 470**	**17 403**	**17 307**	**17 226**	**17 128**	**17 033**	**16 945**	**-0.4%**	**-0.6%**
per capita consumption (kg r.w.e.)*	***31.8***	***30.8***	***30.7***	***30.6***	***30.5***	***30.4***	***30.3***	***30.2***	***30.1***	***29.9***	***29.8***	***29.7***	***-0.6%***	***-0.6%***
EU market price in EUR/t	1 887	1 980	1 981	1 994	2 018	2 040	2 060	2 085	2 107	2 128	2 151	2 176	1.4%	1.2%

** r.w.e. = retail weight equivalent; Coefficient to transform carcass weight into retail weight is 0.78 for pigmeat.*

TABLE 8.29 EU poultry market balance (1 000 t c.w.e.)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Gross Indigenous Production	**13 270**	**13 677**	**13 692**	**13 707**	**13 724**	**13 744**	**13 761**	**13 781**	**13 802**	**13 824**	**13 846**	**13 868**	**1.9%**	**0.4%**
Imports (meat)	800	891	892	894	897	899	901	902	903	904	905	907	-1.3%	1.0%
Exports (meat)	1 982	1 981	2 009	2 026	2 043	2 054	2 085	2 101	2 123	2 146	2 171	2 192	0.9%	0.8%
Net trade (meat)	1 182	1 090	1 117	1 131	1 146	1 155	1 185	1 199	1 219	1 242	1 265	1 286	2.7%	0.7%
Domestic use	**12 088**	**12 576**	**12 581**	**12 580**	**12 580**	**12 580**	**12 582**	**12 582**	**12 583**	**12 584**	**12 585**	**12 586**	**1.8%**	**0.3%**
per capita consumption (kg r.w.e.)*	***23.7***	***24.5***	***24.6***	***24.6***	***24.6***	***24.7***	***24.7***	***24.7***	***24.8***	***24.8***	***24.8***	***24.9***	***1.6%***	***0.4%***
EU market price in EUR/t	2 403	2 170	2 160	2 184	2 213	2 238	2 255	2 276	2 299	2 319	2 342	2 365	1.6%	-0.1%

** r.w.e. = retail weight equivalent; Coefficient to transform carcass weight into retail weight is 0.88 for poultry meat.*

TABLE 8.30 EU sheep and goat meat market balance (1 000 t c.w.e.)

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Gross Indigenous Production	**627**	**615**	**616**	**614**	**614**	**613**	**612**	**611**	**610**	**609**	**608**	**607**	**-0.1%**	**-0.3%**
Imports of live animals	3	3	3	3	3	3	3	3	3	3	3	3	8.6%	-1.0%
Exports of live animals	54	51	50	49	48	47	46	46	45	45	45	45	7.0%	-1.5%
Net Production	**577**	**567**	**569**	**568**	**569**	**569**	**569**	**568**	**568**	**567**	**566**	**565**	**-0.5%**	**-0.2%**
Imports (meat)	151	167	161	161	161	162	162	163	163	164	164	165	-2.0%	0.7%
Exports (meat)	43	45	48	48	49	49	50	50	50	51	51	52	1.4%	1.4%
Net trade (meat)	- 107	-122	-113	-113	-113	-113	-113	-113	-113	-113	-113	-113	-3.1%	0.4%
Domestic use	**684**	**689**	**681**	**681**	**681**	**681**	**682**	**681**	**681**	**680**	**679**	**678**	**-1.0%**	**-0.1%**
per capita consumption (kg r.w.e.)*	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***-1.1%***	***0.0%***
EU market price in EUR/t	7 093	6 880	6 883	6 963	7 058	7 156	7 236	7 320	7 411	7 489	7 582	7 676	3.7%	0.7%

** r.w.e. = retail weight equivalent; Coefficient to transform carcass weight into retail weight is 0.88 for sheep and goat meat.*

TABLE 8.31 EU egg market balance (1 000 t egg equivalent)*

	avg 2021-2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2013-2023	Annual growth (%) 2023-2035
Production	6 422	6 391	6 412	6 432	6 452	6 472	6 492	6 513	6 533	6 553	6 574	6 594	1.1%	0.2%
Imports	54	60	63	65	68	70	73	75	78	80	83	85	5.9%	3.9%
Exports	289	275	280	285	290	295	300	305	310	315	320	325	1.9%	1.0%
Domestic use	6 187	6 176	6 194	6 212	6 230	6 247	6 265	6 283	6 301	6 318	6 336	6 354	1.1%	0.2%
per capita consumption (kg)	*13.8*	*13.7*	*13.8*	*13.8*	*13.9*	*13.9*	*14.0*	*14.0*	*14.1*	*14.2*	*14.2*	*14.3*	*0.9%*	*0.3%*

** eggs for consumption*

TABLE 8.32 EU olive oil market balance (1 000 t)

	avg 2018-2022	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2012-2022	Annual growth (%) 2022-2035
Production	**2 078**	**2 043**	**2 059**	**2 076**	**2 092**	**2 109**	**2 126**	**2 144**	**2 162**	**2 180**	**2 199**	**2 218**	**-0.2%**	**0.5%**
of which ES+PT	1 484	1 539	1 557	1 575	1 594	1 613	1 632	1 651	1 671	1 692	1 712	1 734	-0.2%	0.5%
of which IT+EL	565	505	503	501	499	497	495	493	491	488	486	484	-0.2%	0.5%
Imports	165	265	245	233	235	238	244	249	254	258	262	265	-0.2%	0.5%
Exports	778	800	820	840	860	880	900	920	940	960	980	1 000	-0.2%	0.5%
Consumption	**1 461**	**1 473**	**1 470**	**1 468**	**1 467**	**1 468**	**1 470**	**1 473**	**1 476**	**1 478**	**1 481**	**1 483**	**-0.2%**	**0.5%**
of which ES-IT-EL-PT	1 123	1 115	1 095	1 077	1 058	1 041	1 026	1 011	996	980	965	950	-0.2%	0.5%
of which other EU	158	166	168	171	173	175	178	181	183	186	189	192	-0.2%	0.5%
per capita ES-IT-EL-PT (kg)	***8.8***	***8.7***	***8.6***	***8.5***	***8.4***	***8.3***	***8.2***	***8.1***	***8.0***	***7.9***	***7.8***	***7.7***	***-0.2%***	***0.5%***
per capita other EU (kg)	***1.1***	***1.1***	***1.2***	***1.2***	***1.3***	***1.3***	***1.4***	***1.4***	***1.5***	***1.6***	***1.6***	***1.7***	***-0.2%***	***0.5%***
Ending stocks	**655**	**285**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**-0.2%**	**0.5%**

**Difference and annual growth based on 5-year trimmed average for 2012 and 2022*
Note: the olive oil marketing year is October/September

TABLE 8.33 EU wine market balance (1 000 hl)

	avg 2018-2022	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2012-2022	Annual growth (%) 2022-2035
Area (million ha)	**3.2**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**-0.4%**	**-0.4%**
Yield (hl/ha)	49.0	48.0	47.9	47.9	47.8	47.8	47.7	47.7	47.6	47.6	47.5	47.5	0.5%	-0.2%
Production	**156.4**	**150**	**150**	**149**	**149**	**148**	**148**	**147**	**147**	**146**	**146**	**145**	**-0.1%**	**-0.6%**
of which 5 main producer MS	141.8	137	137	136	136	135	135	134	134	133	133	133	0.1%	-0.5%
other EU MS	14.6	13	13	13	13	13	13	13	13	13	13	13	-1.6%	-1.1%
Imports	7.3	6	6	6	6	6	6	6	6	6	6	6	-0.7%	-2.0%
Exports	30.9	31	31	31	31	31	32	32	32	32	32	32	1.6%	0.3%
Domestic use	**128.5**	**125**	**125**	**124**	**123**	**123**	**122**	**121**	**121**	**120**	**120**	**119**	**-1.2%**	**-0.6%**
Human consumption	**100.0**	**95**	**94**	**93**	**93**	**92**	**92**	**91**	**90**	**90**	**89**	**89**	**-1.7%**	**-0.9%**
per capita consumption (l)	***22.3***	***21.0***	***20.9***	***20.8***	***20.7***	***20.5***	***20.4***	***20.3***	***20.2***	***20.1***	***20.0***	***19.9***	***-1.9%***	***-0.9%***
Other uses	**27.7**	**30**	**31**	**31**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**0.8%**	**0.7%**
Ending stocks	**169.6**	**173**	**173**	**173**	**173**	**173**	**173**	**173**	**173**	**173**	**173**	**173**	**0.6%**	**0.2%**

**Difference and annual growth based on 5-year trimmed average for 2012 and 2022*
Note: only vinified production is included; the wine marketing year is August/July

TABLE 8.34 EU apples balance (1 000 t fresh equivalent)**

	avg 2018-2022	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2012-2022	Annual growth (%) 2022-2035
Area (million ha)	503	488	487	485	484	482	481	479	478	477	475	474	-0.7%	-0.5%
Yield (t/ha)	25	25	25	25	25	25	25	25	25	25	25	25	1.5%	0.1%
Gross production	12 276	12 101	12 077	12 053	12 029	12 004	11 980	11 956	11 932	11 909	11 885	11 861	0.7%	-0.3%
of which losses and feed use	735	726	725	723	722	720	719	717	716	715	713	712	-0.8%	-0.2%
of which usable production	11 541	11 375	11 352	11 330	11 307	11 284	11 262	11 239	11 217	11 194	11 172	11 149	0.8%	-0.3%
Production (fresh)	7 566	7 394	7 379	7 364	7 349	7 335	7 320	7 305	7 291	7 276	7 262	7 247	0.3%	-0.3%
Imports (fresh)	1 135	1 111	1 103	1 095	1 088	1 080	1 073	1 065	1 058	1 050	1 043	1 036	-3.0%	-0.7%
Exports (fresh)	333	296	293	291	289	287	285	283	280	278	276	274	-2.5%	-1.5%
Consumption (fresh)	6 730	6 578	6 569	6 560	6 551	6 542	6 532	6 523	6 514	6 504	6 495	6 485	0.7%	-0.3%
per capita (kg)	*15.0*	*14.6*	*14.6*	*14.7*	*14.7*	*14.7*	*14.7*	*14.7*	*14.7*	*14.7*	*14.7*	*14.7*	*0.6%*	*-0.2%*
Variation in stocks (fresh)	431	:	:	:	:	:	:	:	:	:	:	:	5.6%	0.0%
Production (for processing)	4 037	3 981	3 973	3 965	3 957	3 949	3 942	3 934	3 926	3 918	3 910	3 902	2.1%	-0.3%
Imports (processed)	1 404	1 421	1 414	1 407	1 400	1 393	1 386	1 379	1 372	1 365	1 358	1 351	4.4%	-0.3%
Exports (processed)	1 105	1 089	1 078	1 067	1 056	1 046	1 035	1 025	1 015	1 005	995	985	-1.7%	-0.9%
Apparent consumption (processed)	3 776	3 649	3 638	3 626	3 614	3 603	3 591	3 580	3 569	3 558	3 547	3 536	0.4%	-0.5%
per capita (kg)	*8.4*	*8.1*	*8.1*	*8.1*	*8.1*	*8.1*	*8.1*	*8.0*	*8.0*	*8.0*	*8.0*	*8.0*	*0.3%*	*-0.4%*

**Difference and annual growth based on 5-year trimmed averages for 2012 and 2022*
***Consumption and trade figures of processed apples are expressed in fresh apple equivalent. For further info please see the STO methodology:*
https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/markets/outlook/short-term_en
Note: the apples marketing year is August/July

TABLE 8.35 EU tomatoes balance (1 000 t fresh equivalent)**

	avg 2018-2022	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2012-2022	Annual growth (%) 2022-2035
Production (total)	16 948	17 736	17 771	17 807	17 842	17 878	17 913	17 949	17 984	18 020	18 055	18 127	0.6%	0.5%
Production (fresh)	6 932	6 686	6 671	6 657	6 642	6 628	6 613	6 599	6 584	6 570	6 555	6 527	0.3%	-0.5%
Imports (fresh)	636	854	856	857	859	861	863	865	867	869	870	874	3.1%	2.5%
Exports (fresh)	427	354	351	348	346	343	340	337	335	332	329	327	-2.9%	-2.0%
Apparent consumption (fresh)	7 136	7 185	7 176	7 166	7 156	7 146	7 136	7 126	7 116	7 106	7 097	7 074	0.7%	-0.1%
per capita (kg)	*15.9*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*16.0*	*0.6%*	*0.0%*
Production (for processing)	10 063	11 050	11 100	11 150	11 200	11 250	11 300	11 350	11 400	11 450	11 500	11 600	0.6%	1.1%
Imports (processed)	2 359	2 478	2 468	2 457	2 446	2 435	2 424	2 414	2 403	2 392	2 381	2 359	-0.8%	0.0%
Exports (processed)	4 483	4 500	4 550	4 601	4 651	4 701	4 751	4 801	4 851	4 901	4 951	5 052	2.2%	0.9%
Apparent consumption (processed)	7 853	9 028	9 017	9 006	8 995	8 984	8 973	8 962	8 951	8 941	8 930	8 908	-0.7%	1.0%
per capita (kg)	*17.5*	*20.1*	*20.1*	*20.1*	*20.1*	*20.1*	*20.1*	*20.1*	*20.1*	*20.1*	*20.2*	*20.1*	*-0.9%*	*1.1%*

**Difference and annual growth based on 5-year trimmed averages for 2012 and 2022*
***Consumption and trade figures of processed tomatoes are expressed in fresh tomatoe equivalent. For further info please see the STO methodology:*
https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/markets/outlook/short-term_en

TABLE 8.36 EU peaches and nectarines balance (1 000 t fresh equivalent)

	avg 2018-2022	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth (%) 2016-2022	Annual growth (%) 2022-2035
Production (total)	**3 521**	**3 344**	**3 320**	**3 297**	**3 274**	**3 251**	**3 228**	**3 206**	**3 183**	**3 161**	**3 139**	**3 117**	-2.0%	-0.9%
Area (1000 ha) (fresh)	**174**	**168**	**167**	**166**	**166**	**165**	**164**	**163**	**162**	**161**	**161**	**160**	-2.9%	-0.7%
Yield (t/ha) (fresh)	16	16	16	16	16	16	16	16	16	16	16	16	0.2%	-0.1%
Production (fresh)	**2 867**	**2 725**	**2 706**	**2 687**	**2 668**	**2 650**	**2 631**	**2 613**	**2 595**	**2 576**	**2 558**	**2 541**	-2.2%	-0.9%
Imports (fresh)	36	38	39	40	41	43	44	45	47	48	49	51	7.1%	2.8%
Exports (fresh)	181	139	138	136	135	134	133	132	131	129	128	126	-12.5%	-2.8%
Apparent consumption (fresh)	**2 725**	**2 624**	**2 607**	**2 591**	**2 574**	**2 558**	**2 542**	**2 526**	**2 511**	**2 495**	**2 480**	**2 466**	-1.2%	-0.8%
per capita (kg)	*6.1*	*5.8*	*5.8*	*5.8*	*5.8*	*5.7*	*5.7*	*5.7*	*5.6*	*5.6*	*5.6*	*5.6*	*-1.3%*	*-0.7%*
Area (million ha) (for processing)	**28**	**27**	**27**	**27**	**27**	**27**	**26**	**26**	**26**	**26**	**26**	**26**	2.5%	-0.7%
Yield (t/ha) (for processing)	23	23	23	23	23	23	23	23	22	22	22	22	-4.5%	-0.2%
Production (for processing)	**653**	**618**	**614**	**610**	**605**	**601**	**597**	**593**	**589**	**585**	**581**	**576**	-2.0%	-1.0%
Imports (processed)	12	12	12	12	12	12	12	12	12	12	12	12	-4.5%	0.0%
Exports (processedt)	176	178	179	180	181	182	183	184	185	185	186	187	0.1%	0.5%
Apparent consumption (processed)	**487**	**452**	**447**	**442**	**437**	**431**	**426**	**421**	**416**	**411**	**406**	**401**	-2.7%	-1.5%
per capita (kg)	*1.1*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*0.9*	*0.9*	*0.9*	*0.9*	*0.9*	*-2.8%*	*-1.4%*

**Difference and annual growth based on 5-year trimmed averages for 2016 and 2022.*

TABLE 8.37 EU self-sufficiency rate (%)

CROP SECTORS	EU avg 2021-23	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Arable crops												
Overall Cereals	107	109	109	109	110	110	110	110	111	111	111	111
Wheat	124	125	126	127	127	127	128	128	128	129	129	130
Coarse grains	95	97	97	97	97	98	98	98	98	98	98	98
Common wheat	128	129	130	131	132	132	132	133	133	134	134	135
Durum wheat	80	80	80	80	80	80	80	80	80	80	80	80
Barley	120	120	120	121	122	123	123	124	124	125	125	126
Maize	79	82	83	83	83	83	83	83	83	83	83	83
Other cereals	98	101	101	101	101	101	102	102	102	102	102	102
Rice	41	40	40	40	40	40	40	40	40	40	40	40
Oilseed	61	64	65	65	65	65	65	65	65	65	65	65
Oilseed meal	63	62	62	62	63	63	63	63	64	64	64	65
Oilseed oil	98	94	94	94	94	94	94	94	94	94	94	94
Vegetable oil	70	69	71	71	72	73	74	74	75	75	75	76
Sugar	92	97	96	96	96	97	97	97	98	98	98	99
Isoglucose	113	106	106	105	105	104	104	104	103	103	103	103
Biofuels	91	93	92	92	92	92	92	92	91	92	94	96

Note: Figures for arable crops, olive oil, wine, apples and oranges refer to marketing years (200X means 200X/200X+1).

ANIMAL SECTORS	EU avg 2021-23	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Dairy products												
Fresh dairy products	103	102	102	102	102	102	102	103	103	103	103	103
Cheese	112	113	112	113	113	113	113	113	113	113	113	113
Butter	110	109	110	110	110	110	110	110	110	110	110	110
SMP	203	192	194	194	194	195	195	196	196	196	197	197
WMP	167	163	159	156	154	151	149	147	144	142	139	137
Whey	142	142	142	141	141	142	142	142	142	142	142	142
Meat												
Beef and veal	106	105	105	105	105	105	105	105	105	105	105	105
Pigmeat	121	119	119	119	119	119	119	119	120	120	120	120
Poultry	110	109	109	109	109	109	109	110	110	110	110	110
Sheep and goat	92	89	90	90	90	90	90	90	90	90	90	90

UNCERTAINTY ANALYSIS RESULTS

TABLE 8.38 Macroeconomic uncertainty in 2035 (CV, %)

Region	Consumer price index	GDP deflator	Real GDP	Exchange rate (dom. currency/USD)	Oil price
Australia	0.4	1.5	0.9	5.9	-
Brazil	1.3	1.3	2	9.2	-
Canada	0.5	1.1	1.5	2.7	-
China	1	1.6	1.1	2.5	-
United Kingdom	0.6	0.7	2.1	5.3	-
Indonesia	1.6	2	1.1	3.8	-
India	0.8	0.8	2.5	3.9	-
Japan	0.6	0.5	1.5	8	-
New Zealand	0.8	0.7	0.9	6	-
Russia	2	3.4	2.5	8.7	-
United States	0.6	0.5	1.2	-	-
EU-27	0.9	0.4	1.7	5.1	-
World	-	-	-	-	23.4

TABLE 8.39 Yield uncertainty in 2035 (CV, %)

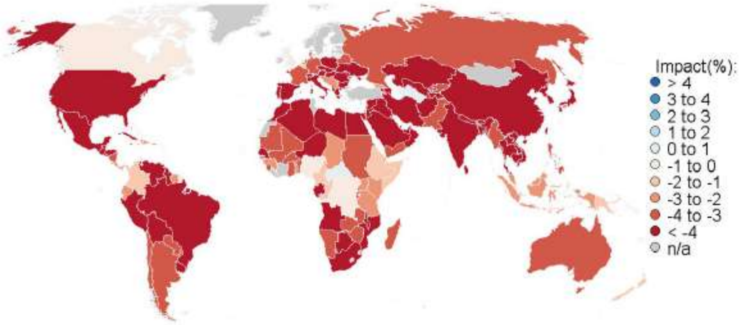
Commodity/Region	Argentina	Australia	Brazil	Canada	China	EU-14	EU-13	Indonesia	India	Kazakhstan	Mexico	Malaysia	New Zealand	Paraguay	Russia	Thailand	Ukraine	United States	Vietnam
Barley	7.8	2.6	-	11.3	-	4	7.5	-	-	-	1.9	-	-	-	2	-	-	1.5	-
Common wheat	10.2	18	11	6.9	2.3	4.8	11.2	2.1	2.5	13.4	11.3	2.1	1.6	9.8	11.7	1.9	11.8	3.5	1.9
Durum wheat	-	-	-	-	-	6.6	5.1	-	-	-	-	-	-	-	-	-	-	-	-
Maize	6.2	2.1	7.6	6.1	2.1	5.5	19.6	4	2.6	3	6.8	2.4	2.7	9	2.1	2.9	14.7	3.2	2.3
Milk	0.8	20.8	0.4	0.1	0.3	0.2	0.2	0.4	0.5	0.4	0.1	0.3	2.4	0.3	0.6	0.3	0.3	0.4	0.3
Oats	0	3.3	-	8.8	-	5.7	8.3	-	-	-	0	-	-	-	3.5	-	-	2.4	-
Other Oilseeds	44.5	25.9	0	4.9	1.3	2.7	9.4	2.1	1.6	13.5	0	2	0	14.5	8.5	1.9	12.7	0.6	2
Other coarse grains	4.9	2.3	2.2	9.6	2.1	-	-	2.1	2.9	3.1	1.2	2.2	2.7	11.8	2.2	2.4	17.1	1.2	3.1
Palm oil	-	-	0	-	0	-	-	3.3	0.6	-	0	3.2	-	0.7	-	0.6	-	-	-
Rapeseed	0	26.2	0	4.9	1.8	3.2	6.9	-	-	-	0	-	0	-	2.6	-	-	0.9	-
Rice	0	0.9	1	-	11.4	4.9	1.1	1.4	3.6	1.6	0.9	1	-	1.3	1.3	2	1.3	5	2.7
Rye	0	-	-	0	-	7.7	9.5	-	-	-	-	-	-	-	2.4	-	-	-	-
Soybean	16.5	0	4.9	4	1.3	7.1	14.2	1.6	1.4	7.5	0	1.9	-	13.5	1.5	1.5	8.1	5.5	1.6
Sugarbeet	-	-	-	2.6	3.1	8.9	7.7	-	-	-	-	-	-	-	14	-	1.5	5.2	-
Sugarcane	25.1	4.5	6	-	1.6	-	-	1	3.7	-	0.8	-	-	1.2	-	11.7	-	4.6	0.9
Sunflower seed	52.1	0	0	0	1	4.7	16	-	-	-	0	-	-	-	10.1	-	-	0.5	-

TABLE 8.40 Impact in 2035 of macroeconomic and yield uncertainties on EU domestic and world prices of agricultural commodities in 2035 (CV, %)

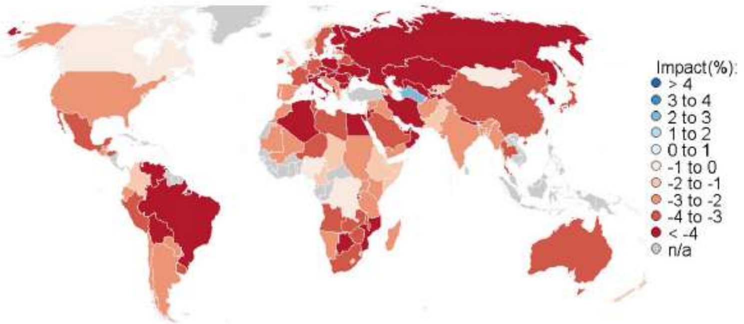
	EU domestic price			International reference prices		
Commodity	Yield	Macro	Combined	Macro	Yield	Combined
Barley	8.5	9.8	13.9	-	-	-
Beef and Veal	3.1	5	6.3	3.3	3.6	4.8
Biodiesel	1.8	11.2	11.3	2	9.9	10.2
Butter	2.2	4.3	5.3	3.1	4.2	5.4
Casein	0.4	4.2	4.6	0	0	0
Cereal brans	7.2	8.5	12	6.4	7.4	10.1
Cheese	1.9	3.9	4.8	2.4	3.1	4.1
Corn Gluten Feed	6.4	8.7	11.7	6.4	7.7	10.4
Cotton	1.2	6.2	6.6	1.2	4.3	4.5
Dried beet pulp	6.5	8.8	11.9	6.2	7.7	10.3
Dried Distillers Grains	10.5	9.3	15.2	10.8	8.4	14.3
Ethanol	3.1	7.5	8.4	3.2	6.9	7.8
High fructose corn syrup	3.2	4.9	6.2	5.1	6.6	8.5
Maize	8.2	8.9	13.1	6.2	7.8	10.6
Meat and bone meal	0	0	0	6.7	7.3	10.2
Milk	1.7	3.7	4.5	-	-	-
Molasses	8.7	8.3	13.3	8.3	7	11.9
Other coarse grains	14	7.4	17.3	14.2	6.7	17.2
Other Oilseeds	8.9	9.4	13.8	7.9	9.2	12.4
Pork	6.5	7.5	10.3	6.3	5.5	8.3
Poultry	3.4	5.8	7.3	4.1	4.9	6.5
Pulses	5.6	8.6	10.9	3.9	6.5	7.7
Rapeseed	13.4	7.7	17	-	-	-
Rice	5.5	7	9.6	5.6	5.5	8.1
Roots and tubers	3.9	6.3	7.8	5.7	7.5	9.5
Sheep	3.9	5.3	6.8	4.4	3.8	5.7
Skim milk powder	1.6	3.8	4.6	1.9	2	2.9
Soybean	14.2	7.4	16.5	14.6	6	16
Sunflower seed	16.1	6.8	18.6	-	-	-
Total Protein Meal	9.4	8.3	13.6	9.8	7.3	12.8
Vegetable oils	8.7	6.9	11.9	8.4	5	10
Wheat	9.7	8.6	14.3	9.5	7.4	12.8
Whey powder	1.7	3.2	4	1.9	2.6	3.5
White sugar	13.7	7	15.7	4.8	4.1	6.4
Whole milk powder	1.9	4.1	4.9	2.4	2.9	4

SCENARIO ON CLIMATE CHANGE

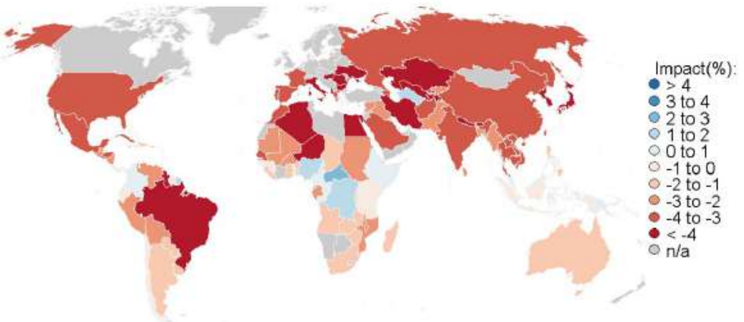
MAP 8.1 Maize yield climate change impacts



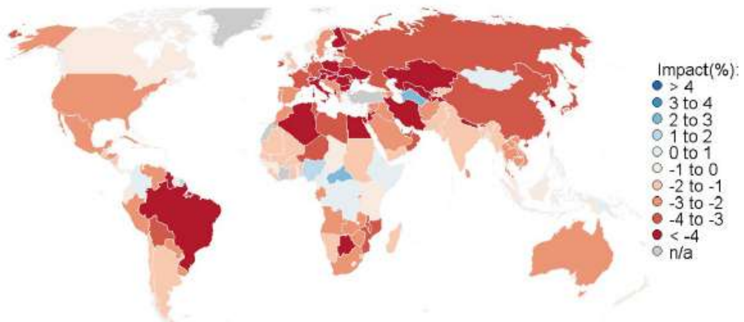
MAP 8.2 Wheat yield climate change impacts



MAP 8.3 Rice yield climate change impacts



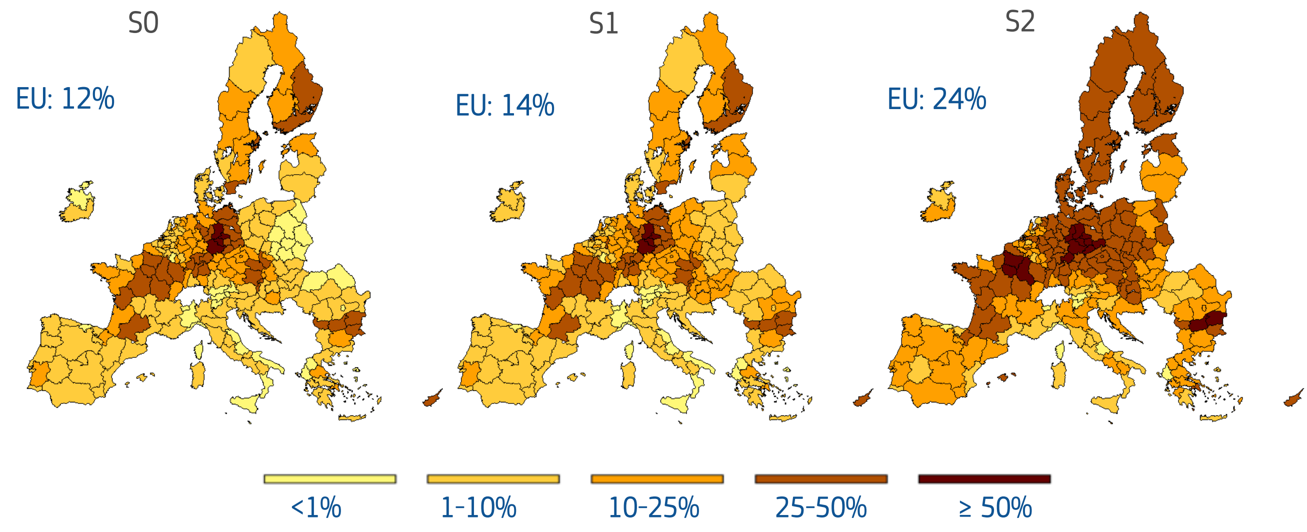
MAP 8.4 Beef and veal production climate change impacts



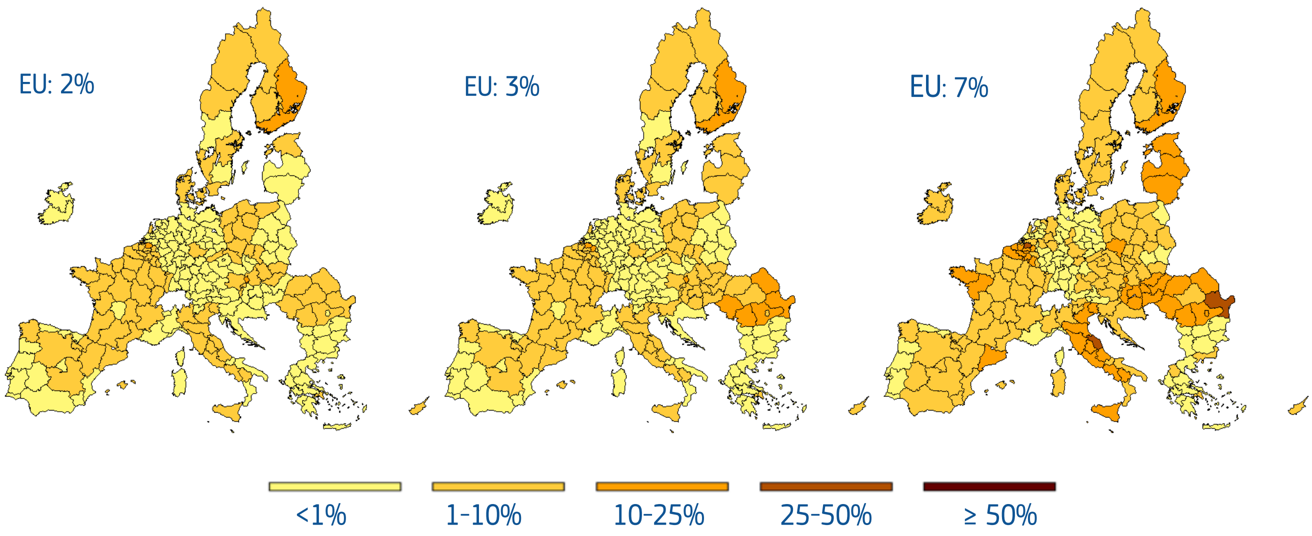
Source (all maps): Econometric estimates, DG JRC.

SCENARIO ON SOIL MANAGEMENT PRACTICES

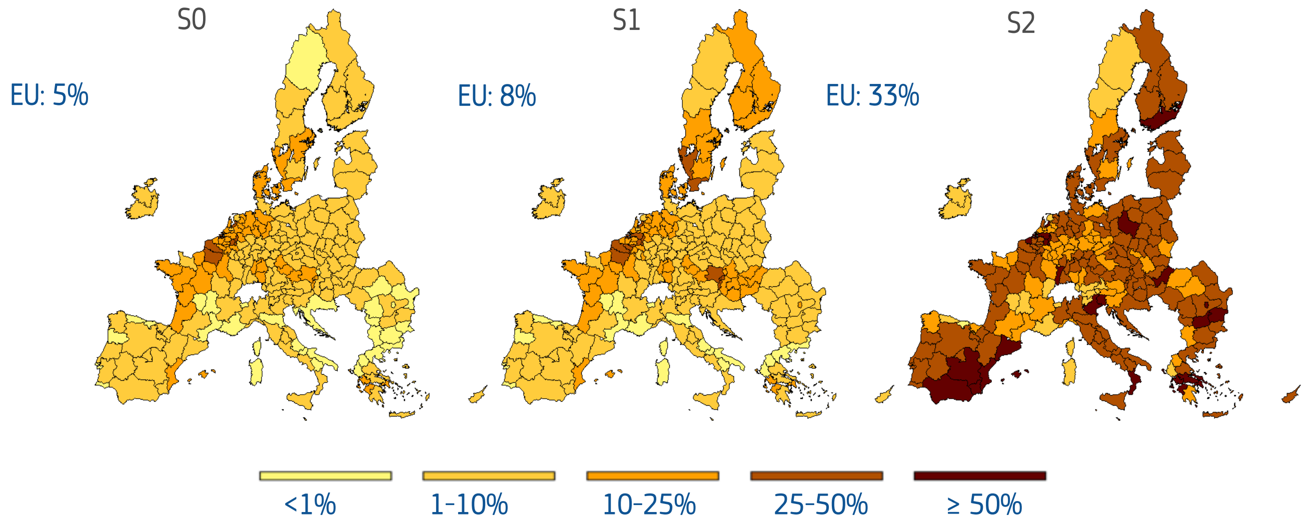
MAP 8.5 Share of conservation tillage area on UAA (%)



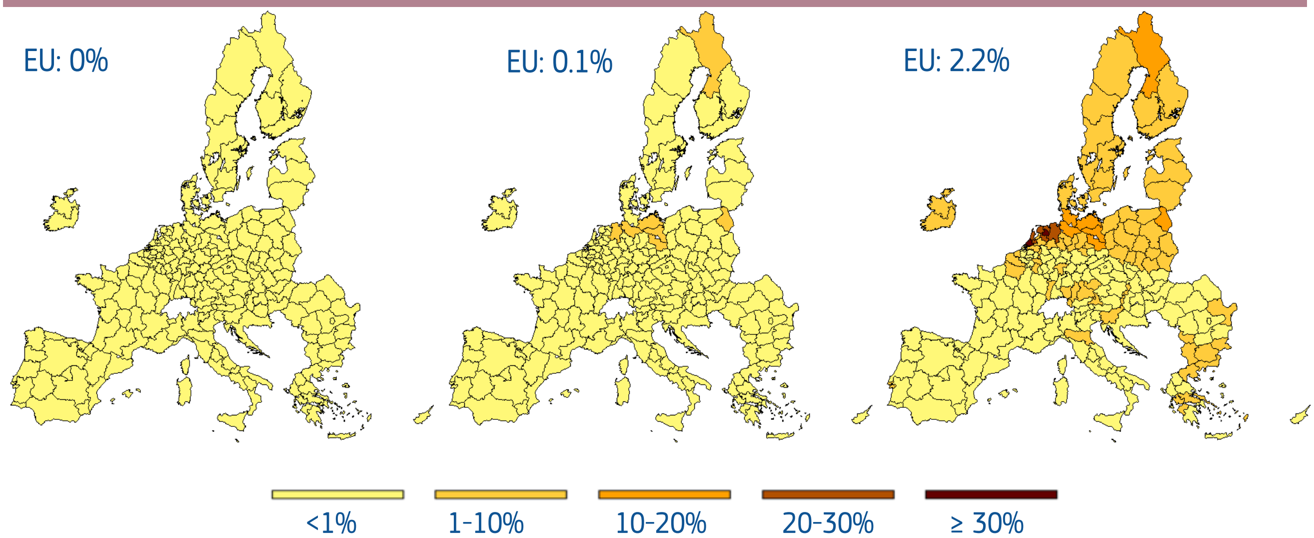
MAP 8.6 Share of no tillage area on UAA (%)



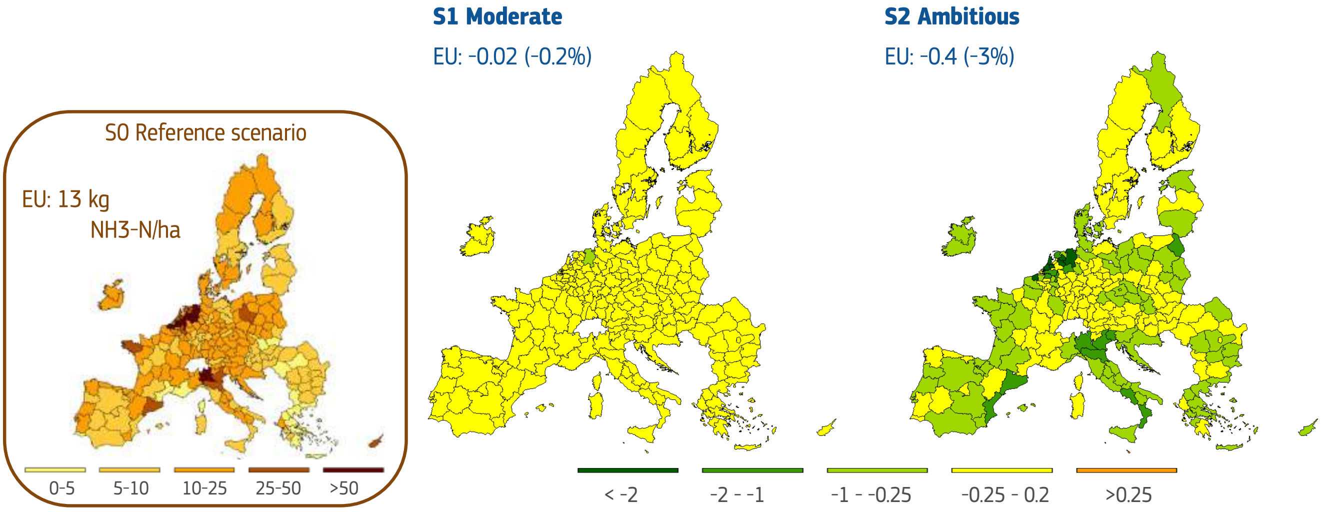
MAP 8.7 Share of cover crops area on UAA (%)



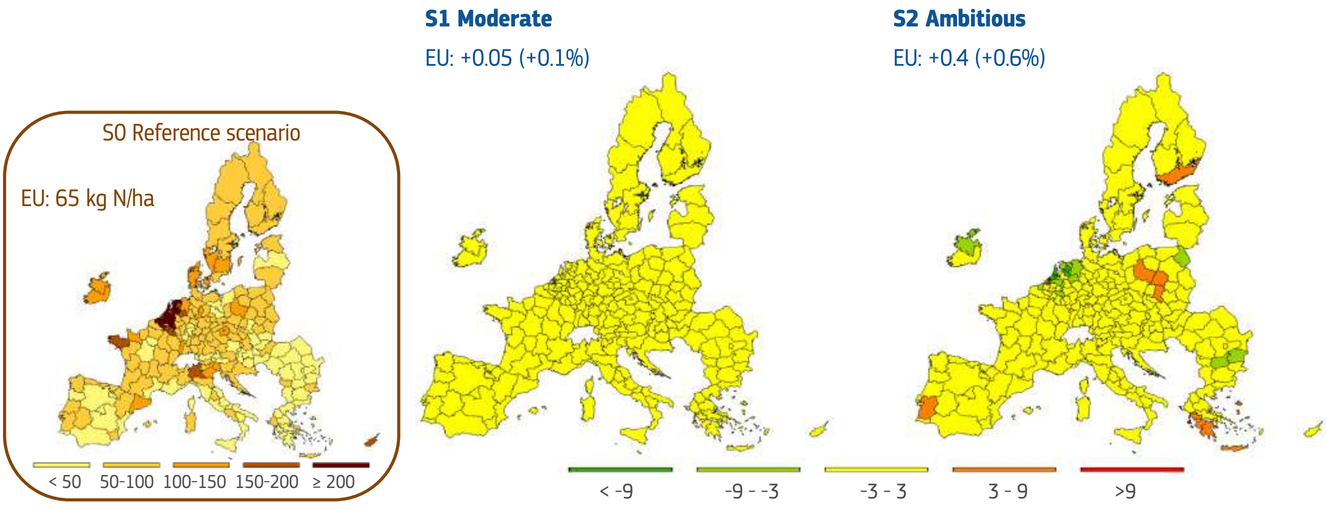
MAP 8.8 Share of rewetted peatland on UAA (%)



MAP 8.9 Change of NH3 emissions (kg NH3-N/ha)



MAP 8.10 Change of N surplus (kg N/ha)



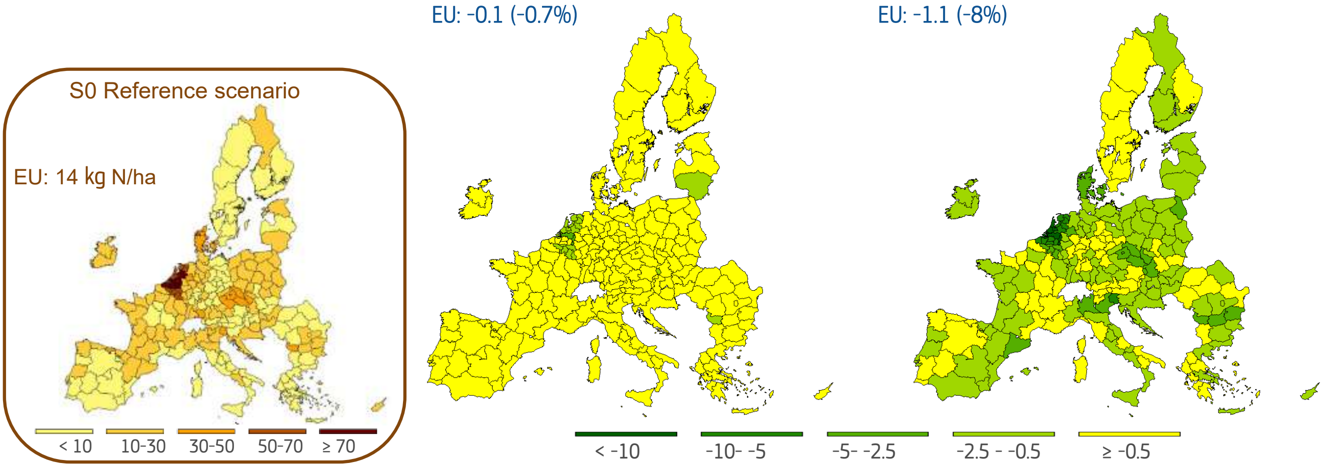
MAP 8.11 Change of N leaching and runoff (N/ha)

S1 Moderate

EU: -0.1 (-0.7%)

S2 Ambitious

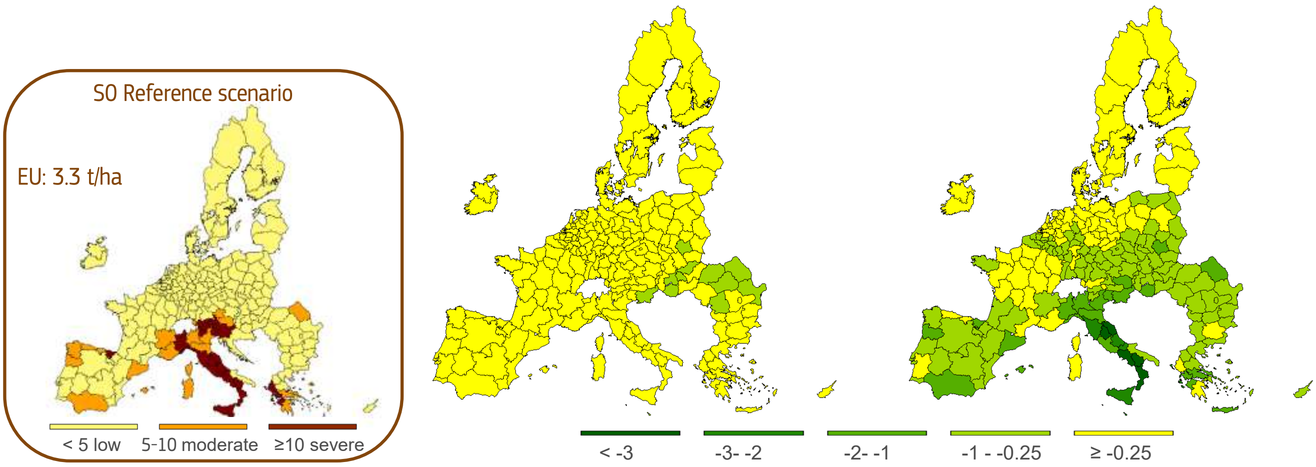
EU: -1.1 (-8%)



MAP 8.12 Impact on soil erosion (t soil/ha)

S1 Moderate

S2 Ambitious



REFERENCES

COWI, Ecologic Institute, IEEP, 'Annexes to Technical Guidance Handbook - setting up and implementing result-based carbon farming mechanisms in the EU'. Report to the European Commission, DG Climate Action on Contract No. CLIMA/C.3/ETU/2018/007. COWI, Kongens Lyngby, 2021.

Daryanto, S., Wang, L., Jacinthe, P.A., 'Impacts of no-tillage management on nitrate loss from corn, soybean and wheat cultivation: A meta-analysis,' Sci Rep, Vol. 7, 12117, 2017, https://doi.org/10.1038/s41598-017-12383-7.

Food, E. I. T. 'Plant-based for the Future. Insights on European consumer and expert opinions. White Paper. A qualitative study funded by EIT Food and conducted by the University of Hohenheim. 12 Feb. 2021. pp.: 1-13, 2021https://www.eitfood.eu/media/documents/Uni_Hohenheim_Whitepaper_16zu9.pdf

Eory, V., MacLeod, M., Topp, C.F.E., Rees, R.M., Webb, J., McVittie, A., Wall, E., Borthwick, F., Watson, C., Waterhouse, A., Wiltshire, J., Bell, H., Moran, D., Dewhurst, R., 'Review and update the UK agriculture marginal abatement cost curves to assess the greenhouse gas abatement for the 5th carbon budget and to 2050'. Final report submitted for the project contract "Provision of services to review and update the UK agriculture MACC and to assess abatement potential for the 5th carbon budget period and to 2050", Edinburgh, 2015.

Eurocommerce, McKinsey & Company, 'Living with and responding to uncertainty – State of Grocery Retail 2023: Europe', 2023 https://www.eurocommerce.eu/living-with-and-responding-to-uncertainty-the-state-of-grocery-retail-2023/

Fellmann, T., Perez-Dominguez, I., Witzke, P., Weiss, F., Hristov, J., Barreiro-Hurle, J., Leip, A., Himics, M., 'Greenhouse gas mitigation technologies in agriculture: Regional circumstances and interactions determine cost-effectiveness,' Journal of Cleaner Production, Vol. 317, No. 1, 2021, https://doi.org/10.1016/j.jclepro.2021.128406

Huang, Y., Ren, W., Wang, L., Hui, D., Grove, J. H., Yang, X., Tao, B., Goff, B., 'Greenhouse gas emissions and crop yield in no-tillage systems: A meta-analysis,' Agriculture, Ecosystems & Environment, Vol. 268, 2018, https://doi.org/10.1016/j.agee.2018.09.002

IPCC, 'Summary for Policymakers,' Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland, 2023, pp. 1-34, https://doi.org/10.59327/IPCC/AR6-9789291691647

Lugato, E., Bampa, F., Panagos, P., Montanarella, L., Jones, A., 'Potential carbon sequestration of European arable soils estimated by modelling a comprehensive set of management practices,' Global Change Biology, Vol. 20, 2015, https://doi.org/10.1111/gcb.12551

Maes, J., et al., 'Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment,' EUR 30161 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-17833-0, doi:10.2760/757183, JRC120383.

Ortiz-Bobea, A., Ault, T.R., Carrillo, C.M. et al., 'Anthropogenic climate change has slowed global agricultural productivity growth,' Nat. Clim. Chang., Vol. 11, 2021, pp. 306–312, https://doi.org/10.1038/s41558-021-01000-1.

Panagos, P., Borrelli, P., Meusburger, K., Alewell, C., Lugato, E., Montanarella, L., 'Estimating the soil erosion cover-management factor at the European scale,' Land Use Policy, Vol. 48, 2015, https://doi.org/10.1016/j.landusepol.2015.05.021

Pérez Domínguez, I., Fellmann, T., Witzke, P., Weiss, F., Hristov, J., Himics, M., BarreiroHurle, J., Gómez Barbero, M., Leip, A., 'Economic assessment of GHG mitigation policy options for EU agriculture: A closer look at mitigation options and regional mitigation costs (EcAMPA 3),' EUR 30164 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-17854-5, doi:10.2760/4668, JRC120355.

Pieralli, S., Chatzopoulos, T., Elleby, C., Perez Dominguez, I., 'Documentation of the European Commission's EU module of the Aglink-Cosimo model: 2021 version,' EUR 31246 EN, Publications Office of the European Union, Luxembourg, 2022.

ProVeg, 'What consumers want: a survey on European consumer attitudes towards plant-based foods, with a focus on flexitarians', European Union's Horizon 2020 research and innovation programme, No 862957, 2021, https://smartproteinproject.eu/consumer-attitudes-plant-based-food-report/

Soane, B.D., Ball, B.C., Arviddson, J., Basch, G., Moreno, F., Roger-Estrade, J., 'No-till in northern, western and south-western Europe: A review of problems and opportunities for crop production and the environment,' Soil and Tillage Research, Vol. 118, 2012, https://doi.org/10.1016/j.still.2011.10.015

Statista, 'Share of young adults who are vegetarian or vegan in selected European countries in 2022', In Statista, 2022, Retrieved November 08, 2023, from https://www.statista.com/forecasts/768475/vegetarianism-and-veganism-among-young-adults-in-selected-european-countries

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