EU AGRICULTURAL OUTLOOK

2024 - 2035

Agriculture
and Rural
Development

Manuscript completed in December 2024, corrigendum in January 2025 (p68)

Luxembourg: Publications Office of the European Union, 2024

PDF ISBN 978-92-68-22162-4 ISSN 2600-0628 doi 10.2762/2329210 KF-01-24-024-EN-N

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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https://agriculture.ec.europa.eu/data-and-analysis/markets/outlook/medium-term_en

Please cite this publication as: EC (2024), EU agricultural outlook, 2024-2035.
European Commission, DG Agriculture and Rural Development, Brussels.

NOTE TO THE READER

This report presents **the medium-term outlook for EU agricultural markets and income** until 2035, complemented by a partial assessment of the environmental implications of projections and a 'what-if' scenario assessing the resilience of the EU meat sector in view of its heavy reliance on imported protein feed.

The outlook is based on a set of **macroeconomic assumptions** deemed most plausible at the time of the analysis, using the latest short-term forecasts available in September 2024 such as AMECO database and European Central Bank, while for the medium-term using projections from sources such as S&P Global and the OECD-FAO Agricultural Outlook 2024-2033. The **agricultural market projections** rely on: (i) the OECD-FAO Agricultural Outlook 2024-2033 for the global market environment, (ii) data available up to the end of September 2024 for agricultural production and trade; (iii) additional market intelligence available at the end of October 2024, and (iv) the Aglink-Cosimo agro-economic model used by the European Commission to run the baseline simulation. Since the various assumptions for the baseline are subject to uncertainties, the report includes an **uncertainty analysis** around the baseline, based on stochastic simulations on macroeconomic variables and crop-yield expectations.

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 related targets, only those in place by the end of September 2024 are considered, to the extent that quantifications are feasible in terms of market impacts. Similarly, only **trade agreements** that had been ratified up to the end of September 2024 are considered, including the autonomous trade measures with Ukraine currently in place until June 2025.

Uncertainty about macroeconomic and climatic developments, geopolitical and trade relations over the outlook remains high. It is therefore important to highlight that this medium-term outlook represents a **baseline for future analytical and scenario work** by the Commission, that may be used as a basis to test various policy considerations and market developments. This baseline may also provide a reference for assessing the impacts of future legislative proposals and/or trade negotiations on agricultural markets and income. As a result of the underlying modelling of the baseline, market developments are projected to follow a relatively smooth path in the medium term. As markets are likely to be much more volatile each year, also due to unexpected external shocks, this **outlook report should not be interpreted as a forecast**. More precisely, these projections correspond to the average trends that agricultural markets are expected to follow under the various assumptions and model parameters. 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 2024 (2014), the mean values for 2022-2024 (2012-2014) are used. For specialised crops, Olympic averages for 2020-2024 (2010-2014) are used.

An external **review of the draft outlook, 'what if' scenario and environmental aspects** was conducted at a hybrid outlook workshop held on 24 October 2024 by the Directorate-General for Agriculture and Rural Development (DG AGRI), organised by Franziska Schweiger, Anna Piwowar and Lucia Balog. The workshop provided valuable feedback from various representatives and experts across the EU food value chain, and we are grateful for their participation.

This Commission report is **a joint collaborative work between DG AGRI and the Joint Research Centre (JRC)**. In DG AGRI, the report content and underlying baseline were prepared by Paolo Bolsi, Olwyn FitzGerald, Mihály Himics, Sabrina Kogler. Beate Kloiber, Dangiris Nekrašius, Andrea Porcella Čapkovičová, Balázs Bence Tóth, Léon van de Pol, Mauro Vigani and David Zaitegui Perez. DG AGRI outlook groups, market and policy units helped the development of the baseline and/or contributed to the drafting of the report, and we are grateful for their input and constructive comments.

The JRC team that contributed to this publication include, for the outlook modelling and what-if scenario: Spire Arsov, Christian Elleby, Beatrice Farkas, Ignacio Pérez Domínguez and Simone Pieralli, and for environmental aspects Maria Bielza and Franz Weiss, as well as Vincenzo Angileri, Andrea Schievano, Renate Koeble, Irene Guerrero, Caetano Beber, Ancuta Isbasoiu and Thomas Fellmann, with the valuable support of Alexander Gocht from the Thuenen Institute. Marcel Adenauer and Hubertus Gay from the OECD, and Sergio René Araujo Enciso from the FAO also provided valuable technical support and expertise.

The outlook on olive oil and table olives for selected Member States was prepared by the AGMEMOD consortium, represented by Ana Gonzalez-Martinez, Roel Jongeneel, Myrna van Leeuwen and David Verhoog.

CONTENT

EXECUTIVE SUMMARY

This EU Agricultural Outlook report presents the prospects for EU agriculture until 2035, considering the expected developments of main drivers of supply and demand. These include the general macroeconomic environment, climate, agricultural inputs, world trade, and consumer demand, while assuming that the current policy framework remains unchanged.

According to the projections, the EU agricultural sector is expected to continue to be a net exporter of agri-food products and contribute to global food security, remaining self-sufficient for several commodities, such as wheat, barley, meat, dairy products, olive oil and wine, while remaining a net importer for maize and oilseeds. For certain products, the EU is projected to shift towards exporting higher-value goods rather than higher volumes, increasing its value of exports.

The outlook is subject to various uncertainties. Agricultural productivity growth is challenged by pressures from climate change and impacts on key natural resources, notably water and soil, which limit the potential for yield growth and induce a shift of agroclimatic zones northwards, affecting crop cultivation patterns.

EU consumption patterns are also expected to change in response to economic downturns as consumers search for ways of spending less on their food baskets, but not at the expense of food quality and safety. EU consumers have concerns about the sustainability of their diets, although changes take place relatively slowly. A slightly lower meat consumption (driven by beef and pigmeat) is expected, while the consumption of plant proteins is expected to grow (e.g. pulses). 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. functional and fortified products, and the use of dairy ingredients).

Compared to the 2023 edition, this 2024 report presents updated projections based on the 2024 OECD-FAO Agricultural Outlook, market data available at the end of September 2024, the 2024 Autumn Short-Term Outlook for EU agricultural markets, additional market intelligence available at the end of October 2024, and using the most recent macroeconomic projections and reflecting the policy current environment.

The outlook assumes a stable macroeconomic environment, with real GDP growth in the EU projected to stabilise in the medium term and inflation to return to the 2% target level. The Euro is expected to appreciate in the future against the US dollar only slightly compared to historical trends, while the Brent oil price is assumed to remain constant in real terms. World population is expected to grow at a slower pace than in the past decade, in line with UN population projections.

The outlook for world markets is based on the latest 2024-2033 OECD-FAO Agricultural Outlook, which depicts a 7% increase in calorie intake in middle-income countries, largely due to greater consumption of staples, livestock products and fats, and a 4% increase in low-income countries. The outlook for world markets is characterised by a slight fall in real prices for main agricultural commodities, which may not be reflected in local retail food prices.

The present edition of the EU Agricultural Outlook report also features a partial assessment of the environmental aspects of the December 2023 EU market projections, which show an improvement from the 2017 base-year for all environmental and climate indicators analysed (greenhouse gas emissions, ammonia emissions, and nitrogen surplus). It also includes an assessment of the extent to which improvements in EU crop yields and feed efficiency could mitigate the impact of a weather-driven supply disruption on global feed supply on the EU meat markets, concluding that addressing the vulnerability of the EU meat sector, but also the EU protein sector in general, would require a more comprehensive, food systems approach.

While the policy environment is considered stable in this outlook, macroeconomic variations triggered by geopolitical events are a source of uncertainty for our projections, as well as the volatility in crop yields. A dedicated chapter assesses the potential impacts of such uncertainties illustrating the results as ranges to the main baseline projections.

The amount of **EU agricultural and forest land** is projected to remain stable between now and 2035, but with relative changes in the share of different types of land. Within arable crops, land-use shifts from cereals and rapeseed to soya beans, other oilseeds and pulses. This is due to expectations of lower demand of cereals for feed and of rapeseed for biofuel, and the impact of coupled income support for protein crops. The amount of agricultural land under permanent crops is expected to increase, while permanent grassland, fodder and fallow land remains stable due to a balance between greater flexibility under the CAP following the 2024 Simplification Regulation, and the CAP support for agro-ecological practices.

Yields of **cereals and oilseeds** are expected to increase only marginally by 2035, as positive developments linked to precision farming, digitalisation, and improved soil health, and an expected reduction in the yield gap between EU countries, are countered by the negative impacts of climate change, and constraints on the availability and affordability of some agricultural inputs (e.g. plant protection products, fertilisers). A small increase in cereal production is driven by maize and barley production, while wheat production is expected to pick up after the decrease in production observed in 2024. Production of pulses and soya beans are also

projected to increase, supported by EU policies favouring protein crops, crop rotation and increasing needs for plant proteins for food use, and leading to a reduction in imports of oilseeds and protein crops, albeit the EU remains a net importer.

The demand for **animal feed** in the EU is projected to decline over the outlook due to reductions in the EU production of pigmeat and beef, and a decline in the dairy herd. A drop in crop-based feed is expected due to a shift towards more grass-based (extensive) production systems, and towards a more efficient feed use (which are assumed to improve via animal genetics and better-targeted feeding systems). By contrast, poultry feed demand could grow due to consumer demand for slow-growing chickens. Following the decline in 2024, feed prices are expected to start growing again after 2025.

Levels of EU **oilseed** crushing are expected to decrease, driven by a decline in rapeseed and sunflower crushing which are only partially compensated by soya beans. The use of vegetable oils is projected to decline due to a reduction in demand for biofuels, with an expected further shift away from palm oil, while the use of oilseeds for food remains relatively stable.

Sugar production is projected to slowly decline by 2035 driven by a decrease in sugar beet yield and area. Sugar consumption is expected to gradually decline because of consumers shifting to diets with a lower sugar intake, especially by reducing the high sugar content of food products. Although the EU is projected to be a net importer of sugar during most years, its reliance on imports is likely to decline.

Demand for **biofuels** in the EU is also expected to decrease as the decarbonisation of road transport continues. As the use of crop-based feedstock to produce biofuels is limited by a production cap, the use of advanced biofuels is expected to grow, with most feedstock coming from municipal waste.

In the **EU dairy sector,** EU milk production is about to reach a turning point in the medium term, where the continuous decline in the dairy cow herd is not counterbalanced anymore by a growth in milk yields. EU milk production will continue to be driven by increasing contributions from the sector to more sustainable agricultural and food systems, generating more value added in the sector. Despite a decline in milk collection, the production of some dairy products is still expected to grow (e.g. cheese and whey powder) albeit at a slower pace than in the past. Butter production is likely to achieve limited growth, while skimmed milk powder remains stable. These developments are supported by strong domestic and global demand for these products. 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 projected to remain stable, but lifestyle changes and growing health requirements could increase demand for fortified and functional dairy products, as well as dairy products with lower fat and sugar content. The total volume of EU dairy exports is expected to slightly decrease, reflecting a shift towards higher value-added exports. This shift and relatively high world market prices will lead to an increase in total export value. The EU raw milk price is expected to be well above pre-2022 levels by 2035.

EU **beef** consumption remains challenged by tight supply and high prices, in combination with sustainability concerns. Low profitability and the prospects of a stricter sustainability regulatory framework are expected to lead to further production decline by 2035. Coupled income support and eco-schemes under the CAP, together with a relatively good price outlook, will help to slow down this trend but will not reverse it. The average slaughter weight will continue on a 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 maintaining 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 decrease gradually due to a decline in the availability of live animals, increased competition, and existing concerns about long-distance transport. EU beef imports could increase slowly by 2035 due to limited EU supply, a reduction in consumption, but sustained demand for certain cuts.

Consumption of **pigmeat** is challenged by sustainability concerns and is therefore projected to decrease between now and 2035. Intensive pigmeat production systems are likely to face further societal criticism, contributing to a decline in EU pigmeat production. African Swine Fever is assumed to remain in the EU, but without any major or uncontrolled outbreaks. EU pigmeat exports - which increased in the previous decade - are expected to decline between 2022/24 average and 2035 due to a recovery in pigmeat production in Asian countries. Accounting EU export volumes from 2024, they are projected to remain almost stable until 2035. Pigmeat prices could remain higher than past levels due to increased costs and reduced EU supply.

Among meats, **poultry** could continue benefitting from a healthier image and a relatively 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 legislation, 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 (although with different trends among EU countries), despite coupled income support and favourable prices, although prices are likely to increase more slowly than in the past decade. EU per capita consumption is expected to remain relatively stable due to sustained consumption patterns related to cultural traditions. EU imports of sheep and goat meat are expected to increase following the implementation of the Free Trade Agreement between the EU and New Zealand.

For **specialised (permanent) crops**, the area of land with olives for oil production is expected to remain relatively stable. However, by 2035 the EU production of **olive oil** is expected to grow slightly driven by yield increases. The declining trend observed in olive oil consumption in recent years is expected to continue in the main producing countries, while consumption is projected to grow in other EU countries. High prices and potential substitution with other vegetable oils contribute to demand uncertainty. Overall, EU consumption of olive oil is projected to decrease, resulting in increasing net exports. The production of **table olives** in the main producing countries is likely to face challenges from climatic conditions and water shortages, while per capita consumption of table olives is expected to increase slightly in the coming decade. The beneficial properties of olive consumption and increasing health concerns regarding dietary habits support this expansion. The EU is expected to remain a net exporter of table olives, although it is also a key importer at the global level.

Wine consumption is expected to continue declining, driven by reduced alcohol intake by younger generations, shifting habits on drinking occasions and demographic changes. Moreover, as some of the main EU export markets are starting to experience similar consumption trends, EU wine production and exports are likely to decrease, leading to a reduction in vineyard areas, assuming stable weather conditions. However, climate change and extreme weather events could lead to large fluctuations and, on average, already lower production volumes. EU wine imports are expected to decline further due to ample supply within the EU.

The production of fruit and vegetables will also face challenges related to extreme weather events, rising energy costs, limitations on the use of pesticides, and pest outbreaks. By 2035, EU consumption of fresh fruit and vegetables is expected to be stable or increase, driven by increasing consumer awareness of the benefits of adopting a diet rich in fruit and vegetables, as well as public promotion initiatives. Assuming stable weather conditions, EU **apple** production is expected to remain stable due to increasing yields, compensating for a decline in cultivated area. EU per capita consumption of apples could increase due to consumer preferences for eating more fruit, and new apple varieties that better reflect consumer preferences. EU production of **peaches and nectarines** is expected to decline over the outlook, while consumption of fresh peaches and nectarines remains relatively stable. The production of **oranges** is expected to increase slightly, driven by a higher share of production for fresh consumption. EU consumption of fresh oranges is expected to increase. In contrast to the largely increasing consumption of fresh fruit and vegetables, the EU consumption of processed fruit is expected to continue decreasing driven by a decline in juices. Except for apples, EU imports of other fresh fruit and vegetables are expected to increase.

By 2035, the production of fresh **tomatoes** is expected to decline by a drop in winter production and a shift to small-sized tomatoes. At the same time, fresh consumption of tomatoes is expected to remain stable as small-sized varieties continue to be demanded more, while snacking of tomatoes push demand up. EU production and consumption of processed tomatoes is expected to increase as demand for processed food increases.

The aforementioned market prospects imply an upward trend in the overall agricultural **production value** throughout the outlook period. After coming down from the high levels in 2022-2023, overall intermediate input costs are projected to return to an increasing trend, and above the 2021 levels. Based on the differences between production value and costs, and after a period of stabilisation, the EU aggregate farm income is projected to increase by 1.4% from 2028 onwards. In view of the assumed continuation of structural change, with an estimated decline in farm labour from 7.6 million annual working units in 2023 to 6.9 million in 2035, the EU farm income per labour unit is projected to grow by 2.2% in nominal terms after 2028, while in real terms the increase would be 0.2% over the same period, depreciated by the rate of inflation over the outlook.

This EU Agricultural Outlook includes a **simulation** to assess to what extent improvements in EU crop yields and feed efficiency can mitigate the impact of a hypothetical extreme weather event affecting global feed suppliers by 2035. Consequently, the EU feed supply chain would be impacted as well, with indirect effects on EU meat producers, since the EU is a net importer of protein feed. Results from this 'what if' scenario analysis indicates that the weather event would produce a global feed price increase, leading to increases also for meat prices. Nevertheless, EU meat production and consumption would be only marginally affected under the scenario assumptions. According to the results, improvements to EU feed efficiency and protein-rich crop yields can improve the resilience of the EU meat sector and decrease its dependence on imported protein feed, but only to a limited extent.

This EU Agricultural Outlook also looks at the **climate and environmental implications** of the market projections in 2035, taking as a basis the projections of the 2023 EU Agricultural Outlook. Results show an improvement across all environmental and climate indicators included in the analysis with a projected reduction in greenhouse gas emissions, ammonia emissions, and nitrogen surplus. The main drivers for these changes include declines in animal numbers and reduction of utilised agricultural area over time, and the adoption of farming practices by EU farmers, such as more efficient application of fertilisers and enhancing soil management, significantly contributing to increased carbon sequestration and reduced soil erosion. Many of these practices are driven and supported through the national strategic plans under the Common Agricultural Policy.

ABBREVIATIONS

AMECO	Annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs
ASF	African swine fever
AWU	Annual Work Unit
CAP	common agricultural policy
C	carbon
CH	Switzerland
CH_4	methane
CO_2	carbon dioxide
COP	Cereals, oilseeds, protein crops
COVID-19	Coronavirus disease 2019
CSPs	CAP Strategic Plans
CV	coefficient of variation
DG	Directorate General
DG AGRI	DG for Agriculture and Rural Development
EC	European Commission
ECB	European Central Bank
EU	European Union (of 27 Member States since 1st of February 2020)
EU-13	Aggregate of countries that entered the EU after the 2004 accession: Bulgaria, Cyprus, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia
EU-14	Aggregate of countries that entered the EU before the 2004 accession: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden
EUR	euro
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Corporate Statistical Database
FDP	fresh dairy products
FTA	free trade agreement
GAECs	good agricultural and environmental conditions
GAINS	GHG and Air Pollution Interactions and Synergies
GDP	gross domestic product
GHG	greenhouse gas
GM	genetically modified
HPAI	Highly pathogenic avian influenza
JRC	Joint Research Centre
K	potassium
K_2O	potassium oxide
MTO	medium-term outlook
MS	Member State
N	nitrogen
N_2O	nitrous oxide
NH_3	ammonia
NOx	nitrogen oxides (nitric oxide and nitrogen dioxide)
OECD	Organisation for Economic Cooperation and Development
OPEC+	Organization of the Petroleum Exporting Countries (including other 10 oil producing countries that are not OPEC members)
P	phosphorus
P_2O_5	phosphorus pentoxide
RED	Renewable Energy Directive
SMP	skimmed milk powder
UAA	utilised agricultural area
UK	United Kingdom
US	United States of America
USD	US dollar
UN	United Nations
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
m^3	cubic metre
pp	percentage point
t	tonne
w.s.e.	white sugar equivalent

DRIVERS AND PROSPECTS

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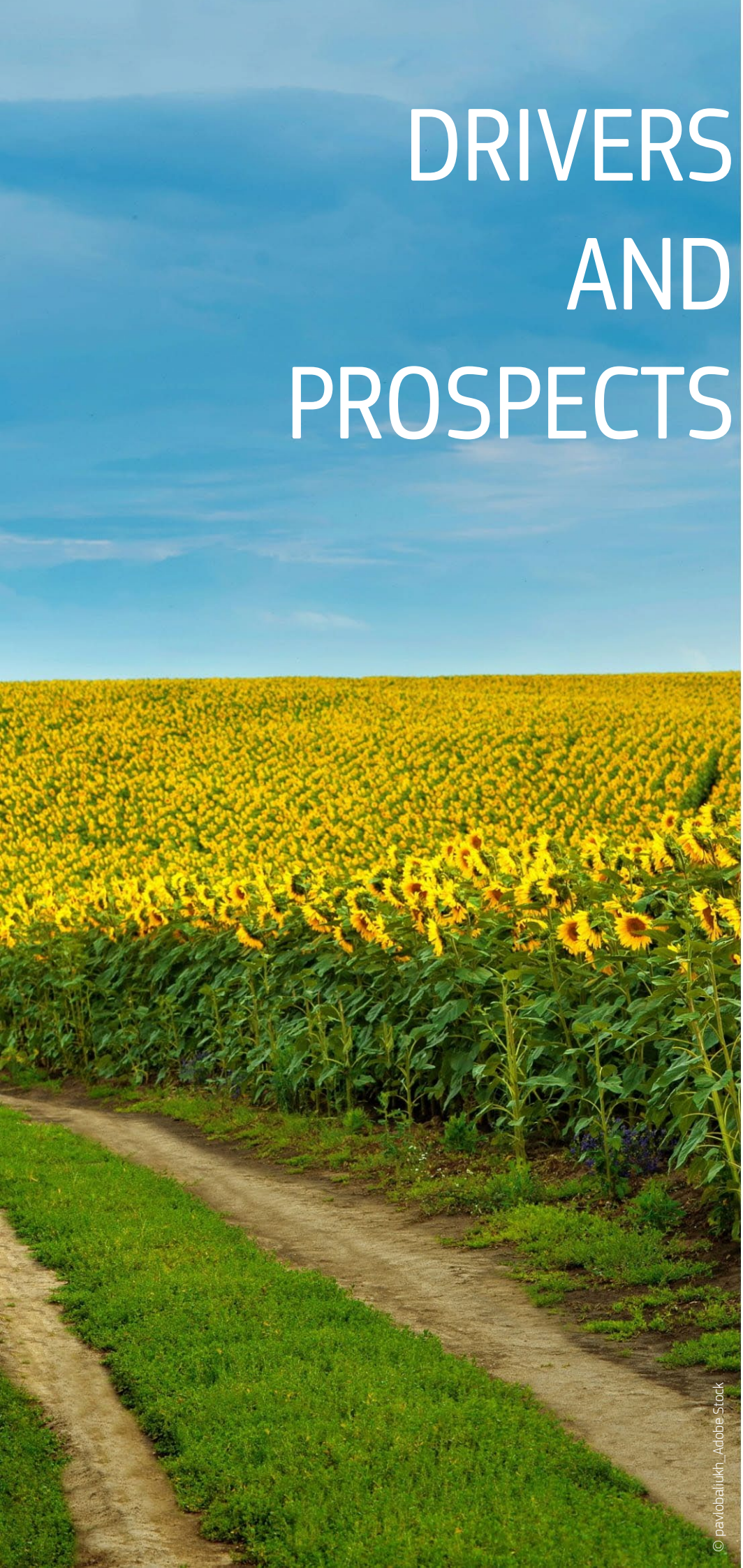
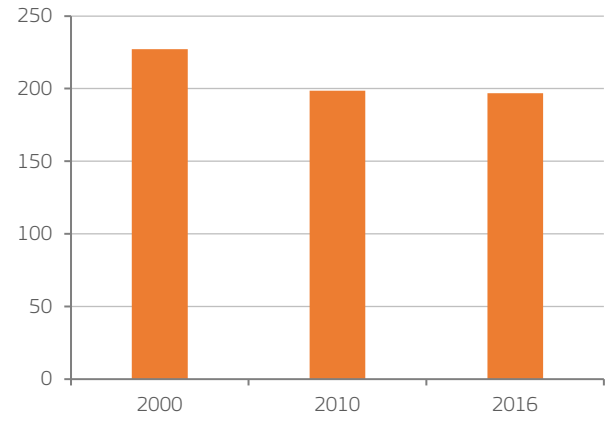
This chapter gathers elements which are considered drivers for the EU agricultural outlook, such as natural resources, availability of agricultural inputs, consumption trends in the EU and globally, evolving farming structures, future policy directions for the Common Agricultural Policy, and the projected evolution of the macroeconomic environment.

In addition, it presents the main future trends in EU agriculture, by focusing on future supply, changing consumer preferences and EU trade performance, with a link to food security. It also shows key results of the modelling analysis carried out to assess possible developments caused by future uncertainties, as well as presenting the main results of the 'what-if' modelling simulation and of the environmental indicators obtained from the outlook.



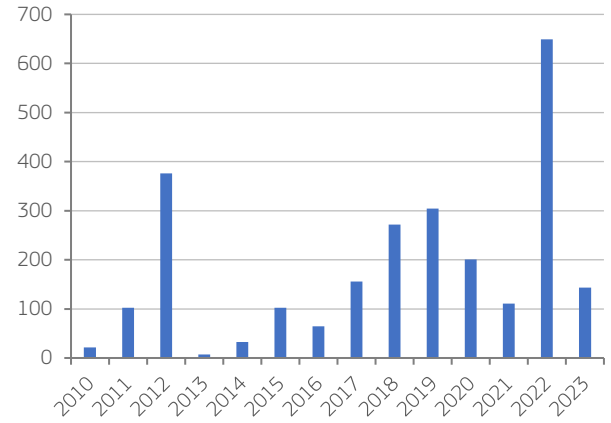
NATURAL RESOURCES

GRAPH 1.1 EU area at risk of severe soil erosion by water (1 000 km²)



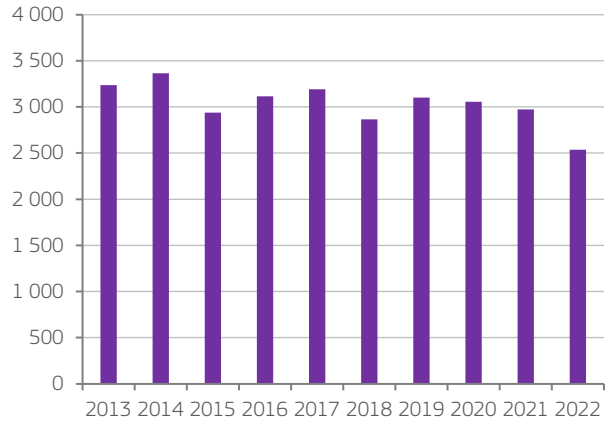
Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 1.2 EU ecosystems area impacted by drought (1 000 km²)



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

GRAPH 1.3 EU* renewable freshwater resources (billion m³)



**excluding Denmark.*

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

Soil management and impact on yields

Approximately 60-70 % of EU soils are unhealthy, driven by market failures, weak regulations, and uses or practices that reduce their health. These factors have contributed to environmentally unsustainable practices, which reduce soil productivity and ecosystem services. Key soil management practices to address this are Integrated Pest Management, Organic Farming, Conservation Agriculture and Agroforestry. Each practice provides distinct ecosystem benefits, such as improving biodiversity, enhancing soil structure and increasing carbon sequestration. Their outcomes are measured in terms of short- and medium-term impacts, the likelihood of adoption, and economic barriers.

Water stress and the growing challenge of droughts

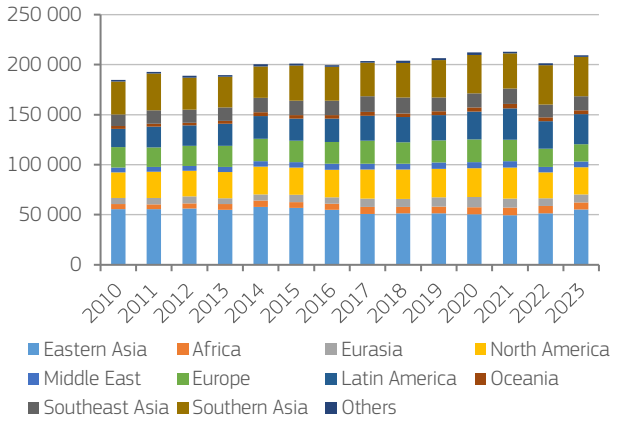
Droughts are a growing issue for the EU: according to the July 2024 JRC Global Drought Observatory, after severe and prolonged droughts that affected Europe for the last two years, drought conditions in summer 2024 affected large parts of Europe, particularly in the Mediterranean region, eastern Europe and the Baltic countries. Above-average temperatures for consecutive periods of time ('hot spells') have directly affected soil moisture and vegetation growth, with severe impacts in coastal regions of Spain, and most of the Mediterranean islands, as well as increased risks of wildfires. As water scarcity intensifies, groundwater resources are becoming more crucial. Climate change exacerbates water stress, though the extent of its impact is not fully understood due to limited data. While the availability of water is not considered among the parameters of the model used in this report, it is certainly a relevant risk factor that can affect agricultural productivity in the medium term.

Agro-climate zones shifting northward

The accelerating migration of EU agro-climate zones is another significant consequence of climate change. Warmer temperatures are pushing traditional agricultural zones further north, altering crop viability and yields in different regions. The frequency of extreme weather events, such as floods and heatwaves, is expected to increase. In 2023, the EU experienced its warmest year on record, with the region warming faster than the global average. While northern regions may benefit from longer growing seasons, they are also more vulnerable to late frosts, which could reduce some of the advantages brought by higher temperatures. Over the outlook period, these effects are not assumed to significantly affect production trends, but nonetheless they represent an important risk factor for the longer term when climate change effects are expected to be more frequent.

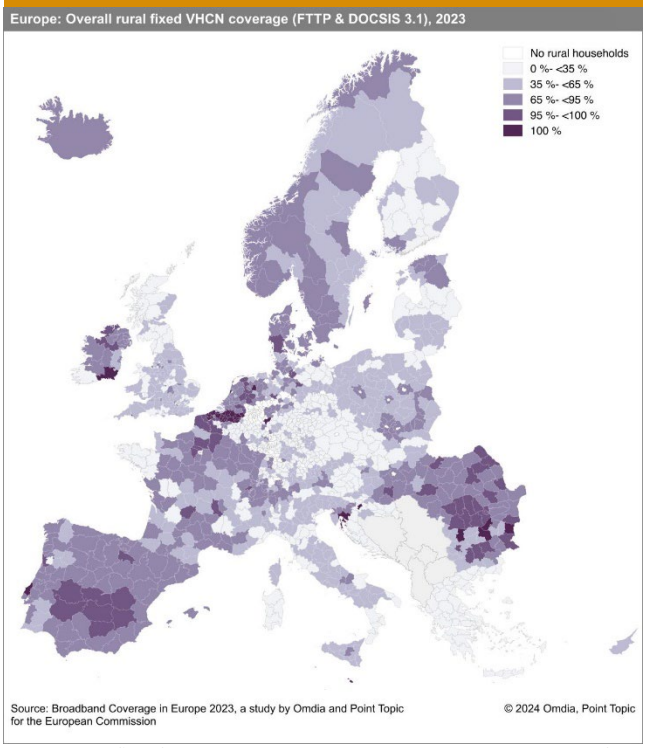
AGRICULTURAL INPUTS

GRAPH 1.4 Composition of global fertiliser demand: N, P_2O_5, K_2O (1 000 t of nutrients)



Source: S&P Global Commodity Insights – Fertilizers.

GRAPH 1.5 Coverage of Very High-Capacity Network in rural areas



Source: Broadband Coverage in Europe 2023: Mapping progress towards the coverage objectives of the Digital Decade.

Better input management could reduce fertiliser use, but uncertainties on future supply

Nitrogen (N), phosphorous (P) and potash (K) fertilisers are essential nutrients for agricultural production as they provide nourishment to plants and preserve the production potential of EU soils both in short and medium term. Their production however requires fossil fuels - mainly to synthetise ammonia - but also sulphuric acid. On the global demand side for fertilisers, no major changes in demand composition are expected in the medium term, except from an increasing use of fertilisers in Latin America. On the supply side, potash and phosphorous fertiliser production is more concentrated around fewer international suppliers compared to nitrogen ones, which is a more competitive market. The application of N and P fertilisers is expected to decrease in the future due to better input management, while potash tends to be underused by farmers, and its demand is expected to slightly increase. Sulphuric acid is currently obtained as a by-product of fossil fuel refining: hence its supply could be affected by decarbonisation policies, next to a rising global demand, also coming from agriculture. On the other hand, non-agricultural uses of fertilisers, for industrial and energy use, currently do not pose a risk for the availability of fertilisers for agriculture.

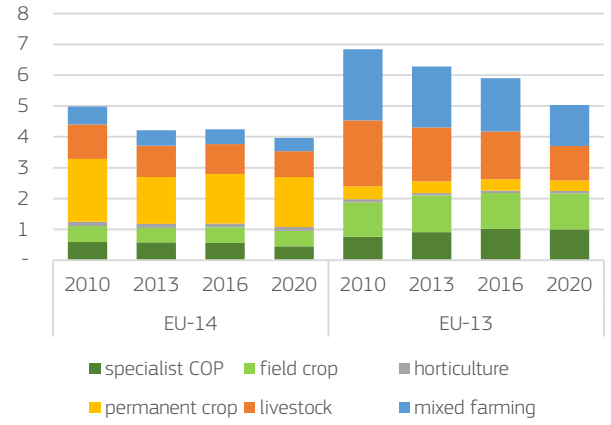
Rural connectivity and financing conditions important to address for achieving innovation gains in EU agriculture

Mechanisation of agricultural activities could contribute to a more efficient management of inputs: higher fuel savings, better application of fertilisers and improved crop protection. However, as agricultural technology is becoming more digitalised and automated, its consistent deployment will require a systemic approach, that goes beyond single machinery investments by farmers. Drivers for investment in and adoption of new farming equipment also include research and development efforts (R&D) from both public and private sectors, access to skilled workforce, better connectivity in rural areas, knowledge sharing and access to finance. When it comes to connectivity, there is still a significant divide between urban and rural areas in the EU, however the deployment of 5G coverage and of Very High-Capacity Networks (VHCN) in rural areas has considerably improved in latest years. These elements are important to consider also in the context of this outlook, as they represent opportunities that could affect productivity and income margins for farmers in the outlook period.

Other agricultural inputs are covered in the respective chapters, more specifically: labour and intermediate input trends under Agricultural income and labour chapter, energy trends under the macroeconomic assumptions, and feed in the arable crops chapter.

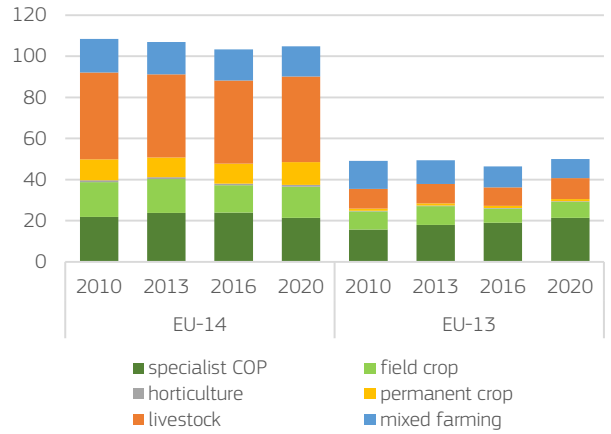
STRUCTURAL FARM CHANGES

GRAPH 1.6 Number of agricultural holdings by type of farming (million)



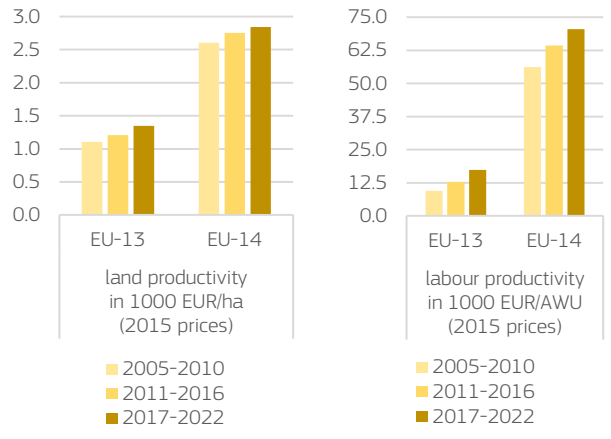
Source: DG Agriculture and Rural Development, based on Eurostat.

GRAPH 1.7 Utilised agricultural area by type of farming (million ha)



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

GRAPH 1.8 Development in land and labour productivity



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

Fewer and more specialised EU farms

From 2010 to 2020 the total area of EU agricultural land declined by 2.2% and the number of EU farms fell by 24.8%, almost 3 million, to 9.1 million farms in 2020. The number of farms declined in all EU countries but not to the same extent. The largest absolute decrease was observed in Romania (-0.97 million), and in relative terms in Bulgaria (-64%) and Hungary (-59%). Whereas in other central eastern European countries many small (semi-subsistence) farms disappeared, larger farms increased both in physical and economic size, depicting strong structural change.

Between 2010 and 2020 EU farms have become more specialised. In the countries that entered the EU from 2004 (EU-13), the number of mixed farms has declined (-42% holdings, or -32% in area) in favour of specialist cereals, oilseeds and protein crop production (+31% in holdings, +36% in area). Moreover, livestock farms decreased significantly (-48% in holdings), while their area increased by 5% between 2010 and 2020. With the decline in livestock, this has led to lower livestock densities in most EU countries. These structural farm changes were driven mainly by prices, macro-economic factors and income as farmers adjusted to new market conditions.

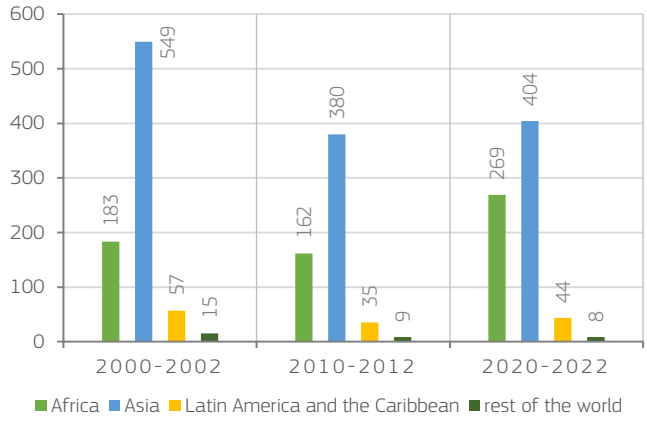
In the pre-2004 accession EU countries (EU-14), the number of farms dropped for each farming type, most notably in mixed farming (-28%). In both livestock and specialist crop production, the number of farms dropped by 24%, whereas the area farmed decreased only by 2% and 1% respectively. The structural changes in these countries were driven most by path dependencies (i.e. a continuation of existing farm structures). Natural conditions (e.g. vegetation period, slope, elevation) as well as demography, drove structural changes in the EU.

Productivity growth in the post-accession period

Alongside increasing farm sizes and specialisation, productivity improved. Growing economies of scale have helped farms to invest and become more productive and resilient. After 20 years of EU accession, a larger increase in productivity has been observed in the EU-13 countries. Between 2005-2010 and 2017-2022, labour productivity (expressed as agricultural output divided by annual work units - AWU) grew by 84% in the EU-13 countries, compared to 26% in the EU-14 countries, while the land productivity (expressed as output/utilised agricultural area - UAA) grew by 22% compared to 9%. This suggests that there is a potential for this productivity gap between the two EU country groups to be reduced over the outlook period, although further investments will be necessary to ensure convergence in the medium term.

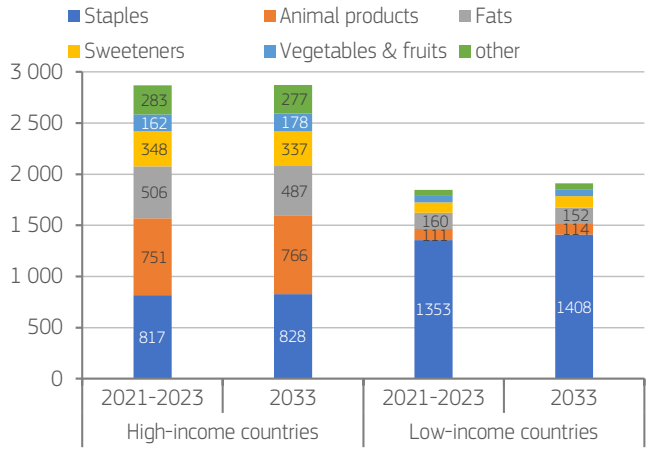
EU AND GLOBAL CONSUMERS

GRAPH 1.9 Number of people undernourished (million, 3-year average)



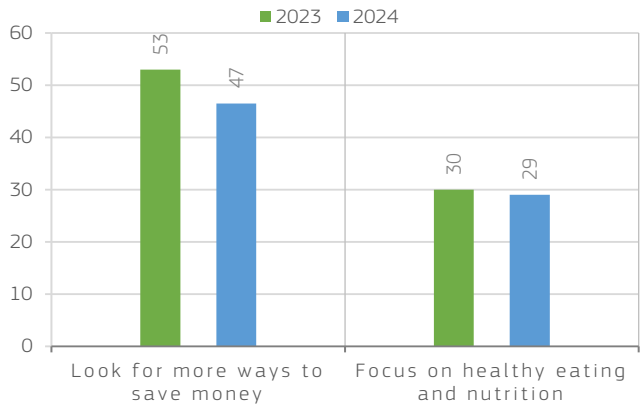
Source: DG Agriculture and Rural Development, based on FAOSTAT.

GRAPH 1.10 Contribution of food groups to total daily per capita calorie food intake (kcal/day/person)



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

GRAPH 1.11 Consumer intent to save money stays high while interest in healthy food remains stable (%)



Source: EuroCommerce consumers' survey in United Kingdom, Germany, France, Italy, Netherlands, Switzerland, Poland, Sweden, Belgium, Denmark.

Inequalities in food availability remain

Since the beginning of the century, the share of high-income countries (including the EU) in global food consumption is declining, while the importance of Asian (especially China and India) and African countries increases, the latter driven mainly by increasing population in Sub-Saharan Africa and incomes in Asia. The declining EU share is due to a lower share of world population, amplified by an aging population with needs for healthier, less caloric and protein-rich diets. Over the outlook, global food consumption will remain driven by income and population growth, but with commodity prices stabilizing above pre-2020 levels, the affordability of healthy and nutritious food could remain a challenge for the most vulnerable households.

The highest percentage of undernourished population is in Asia (56%), followed by Africa (37%) and Latin America (6%). Despite sufficient food production at global level, food distribution is unequal, and the level of food waste remains high (especially in high-income countries). Staples (e.g. potato, yams) still dominate the consumption in low-income countries while more than half of the protein intake in the EU, North America and China is of animal origin: in the EU, mainly from dairy and meat, while in Asia a large share of animal proteins comes from fish and eggs.

From animal to plant sources of nutrients and proteins

In the EU, food consumption behaviour is changing, shifting from animal to plant proteins, although changes in diets are relatively slow, especially in the EU-13 countries where an omnivore diet remains the most common. Barriers to more plant protein consumption include public beliefs about plant-based foods, their nutritional quality, their sensory characteristics and the price difference of alternative products. The choice of consuming less meat is often driven by health and animal welfare reasons. The share of EU consumers that decide to eat vegetarian and vegan food is expected to increase.

More recently, it was observed that EU consumption patterns are changing in response to health and economic crises (e.g. COVID-19 and Russia's war in Ukraine). EU consumers are searching for ways of spending less on their food baskets, by preferring cheaper or discounted food products for example, but not at the expense of food quality and safety. Downtrading is more common among low-income consumers, and among young people with usually lower incomes, but with important differences. For example, pensioners tend to stick to their choices of high-quality food, even if more expensive. Retailers are adjusting their offer according to these new trends in consumers behaviour and lifestyle, for example by increasing the offer of healthy food 'to go' in order to match the increasing demand.

POLICY PERSPECTIVES

Future directions for EU Common agricultural policy: shaping a competitive, resilient and sustainable agriculture

The EU's agricultural policy is entering a new era as the changing global landscape, climate and environmental concerns, and societal needs require a modernised policy ready for the future. While the design of the CAP after 2027 is still forthcoming, during the past year(s) EU policymakers and stakeholders alike have not shied away from sharing their views on which direction it should take. Recalling some of these key contributions is thus a necessary background to any further speculation.

A competitive, sustainable, and resilient agricultural sector that continues to ensure food security is what EU Heads of State aim for in their Strategic Agenda for 2024-2029. Preserving the vitality of rural areas and ensuring a fair remuneration and good working conditions for EU farmers and agricultural workers are considered key policy priorities. The right of workers to decent conditions has been enshrined in CAP legislation via a social conditionality mechanism. The need to manage resources sustainably, protect and restore nature and reverse the degradation of ecosystems is also prioritised. The CAP plays a key role in this regard and the Strategic Agenda calls for a stable and predictable policy framework, including to support farmers in tackling environmental and climate challenges.

Echoing much of these priorities, President Von der Leyen's Political Guidelines for 2024-2029 stress the strategic value of the farming sector for European security. Strengthening the competitiveness of the entire food value chain should be supported through investment and innovation; while improving the sustainability of EU food system through strengthening water security and climate resilience, preserving, and restoring natural resources and biodiversity. In the President's view it is vital to ensure a fair and sufficient income for farmers, while enabling them to operate without excessive bureaucracy, rewarding those working with nature and strengthening their position in the food value.

On September 2024, 29 stakeholders from the European agri-food sectors, civil society, rural communities, and academia delivered a shared prospect for the future of farming and food in Europe. The final report of EU's Strategic Dialogue on the Future of Agriculture recognises food and agricultural production as an essential part of European society and security, and the diversity of European food and farming as an important asset. The members of the Strategic dialogue also agree that economic, environmental, and social sustainability in the agri-food sector can reinforce each other, especially when supported by coherent policy measures.

A vision for EU agriculture

The recommendations of the Strategic Dialogue will guide the work of the new Commission in shaping the Vision for Agriculture and Food - to be delivered in the first 100 days of its mandate.

Tasked with developing such Vision, at his confirmation hearing in front of the European Parliament, Commissioner-Designate Christophe Hansen acknowledged the conclusions of the Dialogue and shared his views on the key building blocks for a farming sector that can be economically viable, environmentally sustainable, and socially responsible. Cutting across these three objectives, the issue of attracting a future generation of farmers to the sector remains key. This would require a strategic approach that looks at the root causes of the problem, including access to land and to finance, while ensuring solid economic prospects. EU income support plays a key role in this respect; however, only as a complement to a well-functioning market that fairly remunerates farmers for their work.

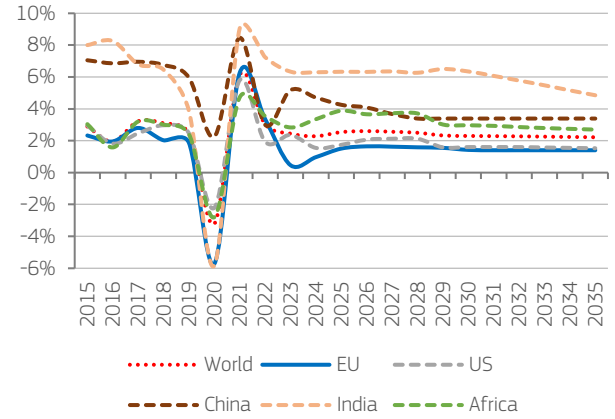
A profitable farming activity also hinges on the competitiveness of the entire food value chain. However, global competition and an unpredictable geopolitical context will undoubtedly raise the challenge, increasing the need to boost investments for competitiveness – notably in research and innovation – at the same time ensuring a better position in the global market.

Recognising important progress, farmers' efforts towards environmental sustainability will need to be further encouraged through appropriate incentives, either through public funds or private schemes. Measuring and recording sustainability performance at farm level can help reward farmers working with nature, and deal with sustainability requirements. A win-win situation that will greatly help the sector to step-up efforts to reduce greenhouse gas emissions, preserve biodiversity, and promote eco-friendly practices, in the light of pressing climatic and environmental crises. Unlocking the potential of innovative practices and technologies and accelerating their access and use by farmers will also bey key to reconcile environmental, social, and economic sustainability.

Finally, future policy action should ensure the right enabling conditions for preserving farmers quality of life and that of the rural communities they live and work with. Thriving rural communities require better access to essential services and equal opportunities with respect to urban dwellers. Policymakers and stakeholders recognise the key role of bioeconomy in this respect. The challenge for the future common agricultural policy would be ensuring that primary producers can fully benefit from it, not only through producing biomass but also adding value. This will require for example stepping up targeted investments in rural areas, an endeavour that calls for strong policy coordination at all the levels of governance.

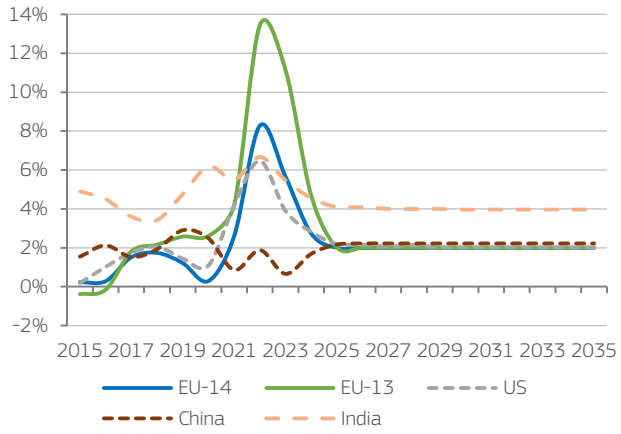
MACROECONOMIC OUTLOOK

GRAPH 1.12 Projected annual growth in real GDP (%)



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

GRAPH 1.13 Projected annual growth in consumer prices (%)



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

Short-term EU output remains sluggish but recovers in the medium term

Among the ongoing Russian invasion of Ukraine, a regional conflict in the Middle East with impacts on energy prices and supply routes, and of risks of trade disputes between the main economic blocs, geopolitical events bring many uncertainties to the macroeconomic outlook in the short and medium term. This EU Agricultural Outlook is based on assumptions on the economic environment until 2035, which appear most plausible on the basis of available forecasts and intelligence. The macroeconomic projections assume that global economic growth will level off at an average annual growth of 2.2% by 2035 (+3.4% in China, +4.9% in India and +1.5% in the US). Real GDP in the EU is projected to grow in the short term by 1% in 2024, and by 1.5 % in 2025, converging in the medium term at an annual increase of 1.4%.

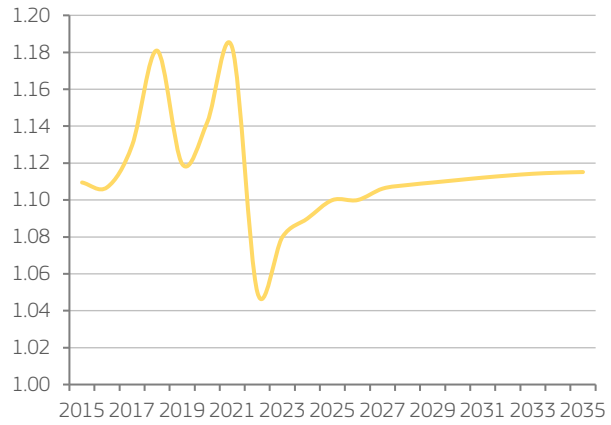
Inflation projected to normalise

The surge of inflation in the EU observed from the end of 2021 has normalised over the course of 2024, as energy prices declined thanks to reduced global demand for oil, adequate supply diversification and sufficient storage levels of natural gas in the EU. These downward price pressures do not impact evenly across EU countries. A higher inflation rate is expected in the EU-13 countries than in their EU-14 counterparts this year. The evolution of prices follows a similar pattern as in the last edition of this EU Agricultural Outlook, with projected inflation rates in 2024 of 2.7% for the EU-14 country group and of 4.7% for the EU-13 group, subsequently moving towards a stable 2% annual inflation path until 2035.

Food inflation also assumed to normalise, but uncertainties remain

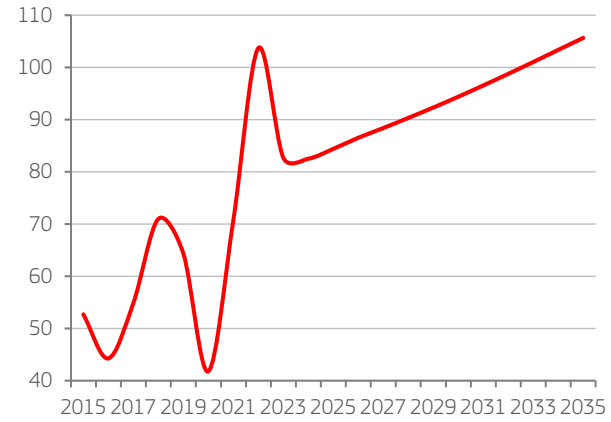
The spike in energy and commodity prices observed the period 2022-2023 has also triggered a surge in food inflation, for which the expectations by the European Central Bank project a level of 2.9% in the Euro Area for the year 2024, and to still remain slightly above the target inflation level of 2% in the near future: 2.4% in 2025 and 2.1% in 2026. This suggests that the surge in food prices observed between 2022 and 2023 is expected to remain, leading to potential consequences in terms of consumer choices in the short term, as the most vulnerable households could cut food expenditure through 'downtrading', that is switching to cheaper food alternatives to preserve their purchasing power. In the medium term, it is assumed that the stabilisation of the macroeconomic environment would also lead to a stabilisation in consumer demand, even though market and geopolitical uncertainties could lead to unforeseeable price shocks.

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



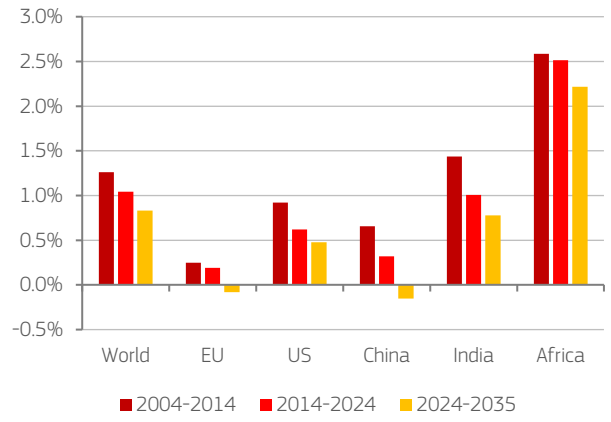
Source: based on OECD-FAO and European Central Bank.

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



Source: DG Agriculture and Rural Development, based on OECD-FAO, US Energy Information Administration and S&P Global.

GRAPH 1.16 Projected annual growth of world population (%)



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

The euro projected to be weaker than in the last decade

Exchange rates are an important variable to account for as their value directly impact the EU's trade competitiveness, including for agricultural commodities. Exchange rates are difficult to project for the medium term due to a large degree of uncertainty involved. Consequently, most currency exchange rates forecasts cover only the short-term due to the large volatility in demand observed in currency markets, policies on reserves by other countries, geopolitical and related trade dynamics, as well as decisions by central banks on interest rates. Assumptions about the euro exchange rate vs the US dollar until 2025 are in line with the ECB technical assumptions from the 2024 September forecast, setting a value of USD 1.09 in 2024 and projecting a slight appreciation towards USD 1.1 in 2026. Afterwards, it is assumed that the euro will slightly appreciate around USD 1.12 in 2035.

Oil prices projected to increase amid global uncertainties about supply and demand

Compared with last year's EU Agricultural Outlook, the pathway of Brent crude oil prices has only been slightly revised and projected to be above USD 105 per barrel in the medium term in nominal terms, while remaining constant at USD 82 per barrel in 2024 real terms for the entire outlook period. While oil prices have generally been below USD 80 per barrel in the second half of 2024, the volatility of energy markets from geopolitical shocks, as well as the impact of decisions by OPEC+ countries on oil supply and a potential recovery in global demand, could lead to price increases in the short and medium term.

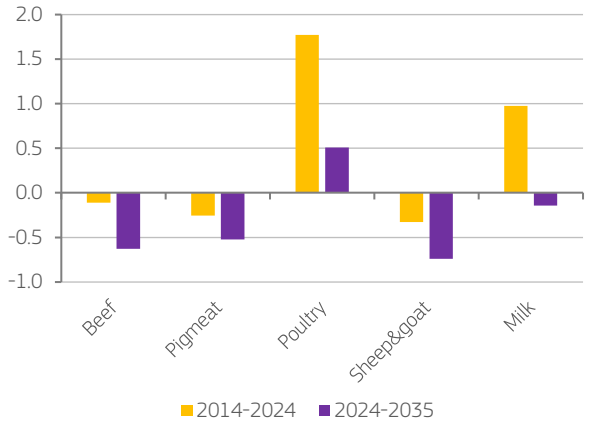
Declining population growth across the world

World population growth is projected to increase annually by 0.8% until 2035 and will remain a key driver of global food demand. The population of Africa will grow the most rapidly in coming years (+2.2% annually from 2024 to 2035) while population growth projections will be more limited in other world regions, or even decline. Looking at Asia, the population in China is projected to decline at an annual average rate of 0.2%, while India is expected to become the most populous country in the world in the medium term by reaching almost 1.6 billion people by 2035. EU population growth is projected to decrease at an annual rate of 0.1%, in line with the UN world population prospects.

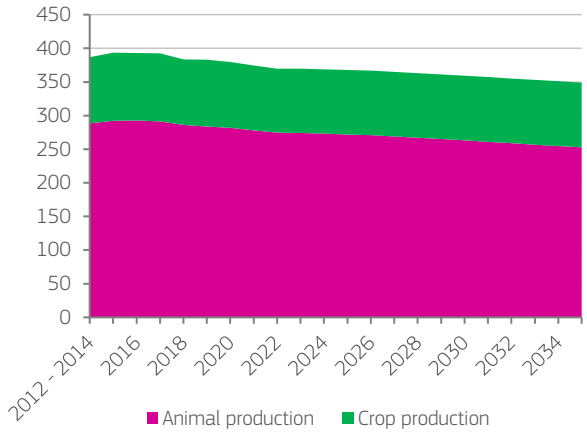
FUTURE SUPPLY

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 on a transition path

Overall EU agricultural production until 2035 is expected to grow more slowly than in the past and even decline for most animal products. This is linked to an overall slower productivity growth in EU countries, driven by the implications of an increasing frequency and severity of extreme weather events driven by climate change, access to finance for investments, potential labour shortages, as well as environmental and climate regulatory requirements. To some extent, today's challenges in agricultural production systems are counterbalanced by introducing more sustainable farming practices and other innovative solutions. These developments are expected to bring more resilience to the EU food systems and to create further opportunities for EU farmers.

Lower but more sustainable growth in EU production

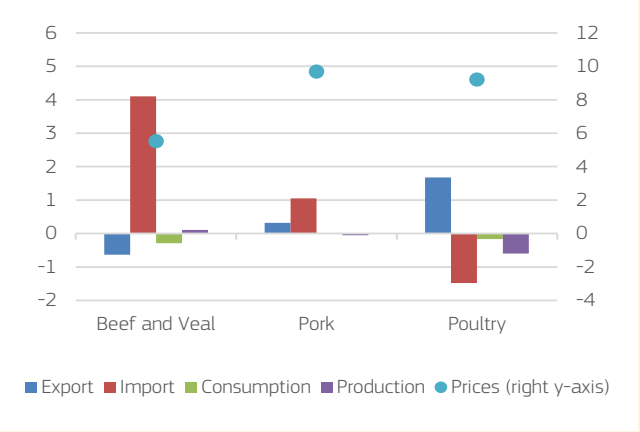
Despite some constraints on yield improvements, EU crop production could increase slightly in the future being driven by protein crops, maize and barley production. Crop yields could remain rather stable as (on average) the positive impacts of enhanced adoption of sustainable farming practices and technology are assumed to counterbalance the impacts of extreme weather events and reduced availability and affordability of inputs. Area developments are expected to be an important driver of production, with limited prospects for cereals and rapeseed. Land competition between crops is driven by their profitability, climate resilience and adaptability, as well as evolving demand (e.g. lower feed and biofuel use). On EU animal production, changing consumer preferences and sustainability concerns, along with profitability and regulatory framework supporting extensive production remain significant constraints for the sector. As a result, EU milk and meat production are expected to continue declining (except for poultry), driven both by a reduction in the numbers of cows and lower productivity growth. However, EU animal production is likely to become more sustainable and resilient through adaptation moving from intensive to more extensive production systems.

Accelerated reduction of GHGs from agriculture

Direct GHG emissions from overall agricultural production (only based on direct emission factors such as herd size) are expected to further decline in the coming years, especially from animal production. On the other hand, driven by stable yields and slightly declining arable land, emissions from crop production are projected to increase only marginally, remaining stable. As only direct emissions are considered in this calculation, even greater reductions could be achieved if the full implementation of CAP measures will be considered, as well as the use of emission-reduction technologies, and environmentally sustainable farming practices. A more detailed analysis of GHG emissions is included in the environmental aspects section of this report.

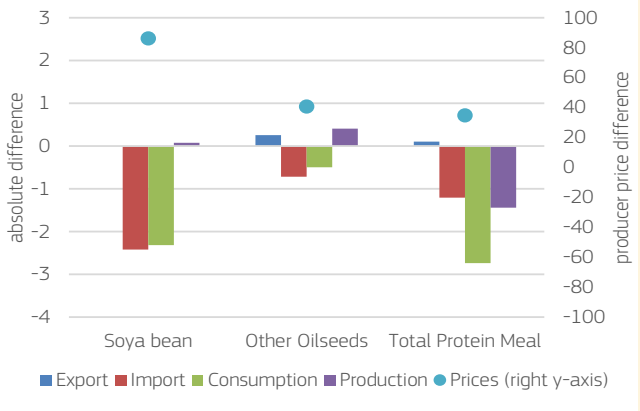
SCENARIO: STRESS-TESTING THE EU FEED SUPPLY CHAIN

GRAPH 1.20 EU meat balance in the extreme weather scenario in 2035 (% difference from the baseline)



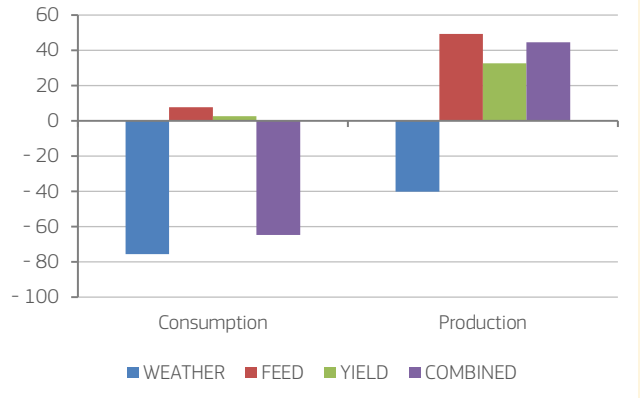
Source: Aglink-Cosimo model.

GRAPH 1.21 EU oilseeds and protein meal balance in the extreme weather scenario in 2035 (absolute difference from the baseline in million t and % price difference from the baseline)



Source: Aglink-Cosimo model.

GRAPH 1.22 EU meat production and consumption impacts in the weather extreme, increased feed efficiency, improved yields and combined scenarios (absolute difference from the baseline in thousands of tonnes) – 2035



Source: Aglink-Cosimo model.

This scenario analysis represents a stress test to assess the resilience of the EU livestock sector against a modelled yield shock, affecting oilseeds supply in main producing countries, caused by an extreme weather event happening in 2035 (Graphs 1.20 and 1.21), as the EU is not self-sufficient in oilseeds. Technologically driven increases in crop yields and feed efficiency are modelled as potential preparedness measures to mitigate the effects of the shock to EU livestock. More specifically the mitigation measures include:

- **Improved yields of EU-grown oilseeds:** the uptake of technologies and investments is assumed to gradually improve EU sunflower and soya beans yields towards a 20-40% increase in 2035, productivity levels similar to the top three world producers.
- **Increased EU feed efficiency** by gradually introducing productivity gains from innovation for non-ruminants (pork and poultry) to produce 2% to 4% more pork and/or poultry meat with the same amount of feed.

A **combined** scenario shows how much the assumed gradual yield and feed efficiency improvements can mitigate the impacts of the extreme weather shock affecting the major feed exporters in 2035 on EU meat markets.

Market impacts: resilience and adaptation

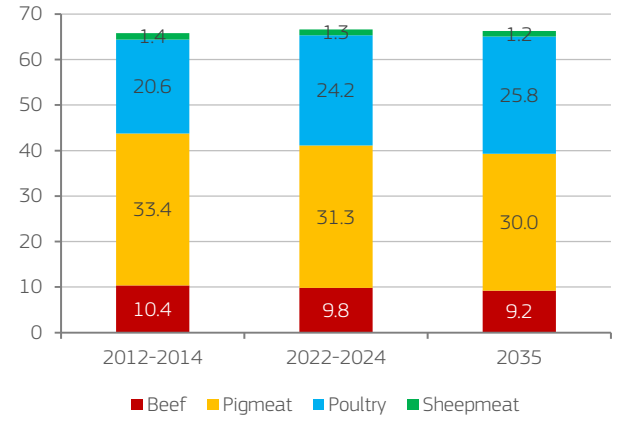
The simulated market impacts indicate that the extreme weather shock causes almost a near doubling of world soya bean prices and a 40% to 50% increase in other oilseed prices. Higher feed costs will result in increased meat prices, with pork and poultry producer prices rising by approximately 10% and beef and veal by 5%.

When the two mitigating measures are introduced, the EU produces more crops domestically and is now able to produce meat more efficiently, which in turn leads to a reduction in import feed demand. The combined effect of the two mitigation measures allows for an increase in meat production within the EU compared to the 2035 baseline with effects on its export potential (Graph 1.22).

This scenario analysis highlights the importance of considering addressing the EU dependency on imported protein feeds through yield crop and feed efficiency improvements. However, the results also show the limitations of these mitigation measures and demonstrate that tackling the dependencies of the EU livestock sector would require a more comprehensive, food systems' approach.

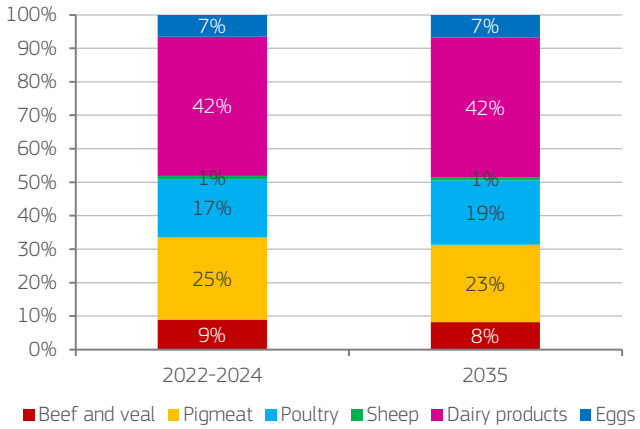
CHANGING DIETS

GRAPH 1.23 EU per capita meat consumption by meat type (kg)



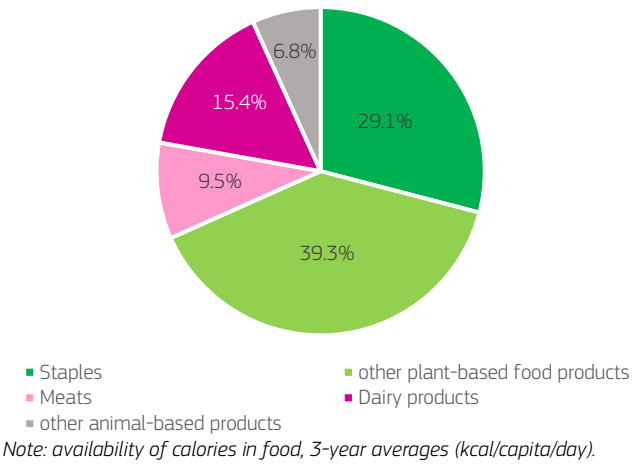
Note: Apparent consumption in retail weight.

GRAPH 1.24 Availability of animal proteins in food in the EU by type (%)



Note: protein availability in food, 3-year averages, measured in g/capita/day.

GRAPH 1.25 Distribution of calories available in food in the EU by source (%)



Note: availability of calories in food, 3-year averages (kcal/capita/day).

Sustained consumption of dairy products and a marginal decline in meat consumption

Animal products provide the main protein source for an average EU diet. In 2021, 64% of the available protein in food was of animal origin, while plant proteins covered the remaining 36%. While the market outlook does not change this overall picture, the composition of the animal protein sources is projected to shift. This is driven by changes in relative prices, changing eating habits and lifestyles, and by health and quality considerations from consumers associated with each protein source. The share of poultry meat within EU meat consumption continues increasing, due to its convenience for preparation, its relatively healthier image and relatively lower price compared to other meat types. Consumption of beef and pigmeat is expected to decrease, driven partly by consumers' perceptions on sustainability. A shift away from meats with a higher fat content could lead to a stronger decrease of pigmeat consumption.

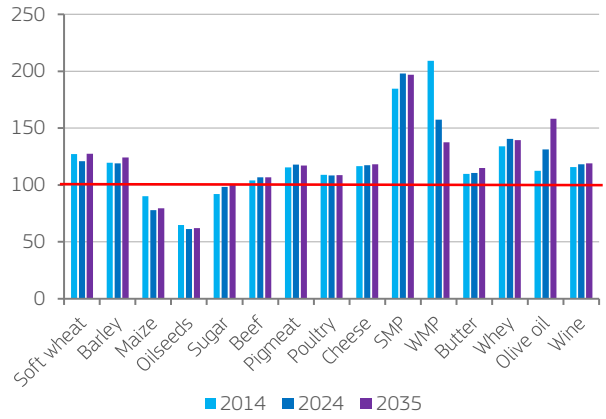
Total EU per capita meat consumption is projected to decrease marginally by 0.3 kg between now and 2035, while the per capita consumption of dairy products remains stable. Nevertheless, there are significant shifts within the category, likely favouring innovative, functional and fortified products, and the more extended use of dairy ingredients. Some more traditional dairy products (e.g. drinking milk) can lose their shares in EU diets due to changes in consumer preference (protein intake per capita from fresh dairy products decrease by 5.4% between now and 2035). Protein intake from cheese will likely further increase (+4.9%) due to multiple potential applications and diversified distribution channels (retail, foodservice, processing), while the processed food use of butter and milk powders can remain stable.

Increasing consumption of pulses and decreasing popularity of some wine types

In terms of caloric intake, staple food products (including cereals and protein crops) and other plant-based food products (including sugar) account for the largest share of EU diets (68% combined). Some gradual adjustments in the energy sources of EU diets are expected until 2035. Pulses, fruit and vegetables are likely gaining shares compared to staples. Consumption of fresh fruit and vegetables is expected to be stable or increase, driven by increasing consumer awareness of the benefits of adopting a diet rich in fruit and vegetables. The declining trend observed in olive oil consumption in recent years is expected to continue in the main producing countries, while consumption is projected to rise in the rest of the EU countries. A continued decline is projected in wine consumption. The growing popularity of fresher and easier-to-drink wines (including sparkling wines) can only partly counterbalance the impact of declining red wine consumption.

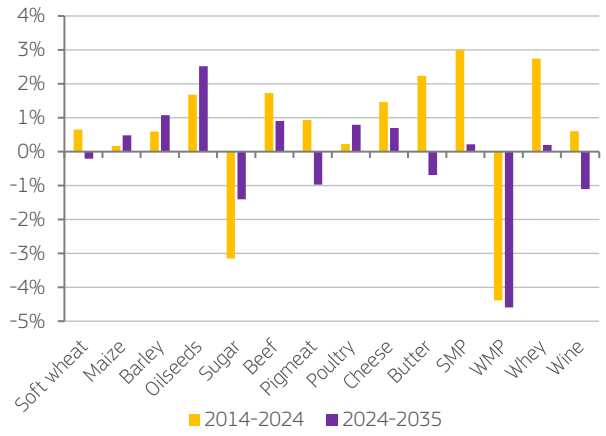
TRADE AND FOOD SECURITY

GRAPH 1.26 EU self-sufficiency rates for selected agricultural commodities (%)

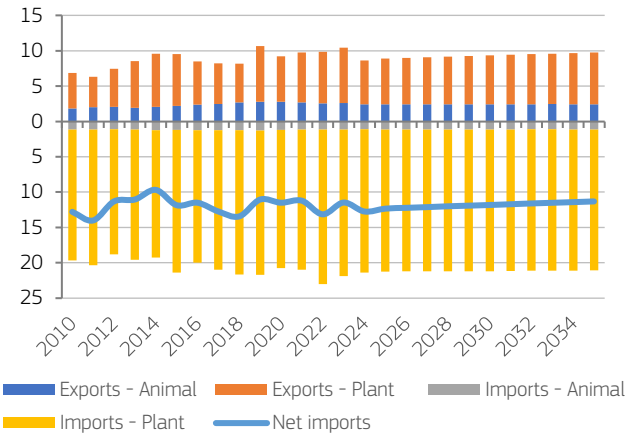


Note: Self-sufficiency rates are calculated as production/consumption. A value above 100 indicates the capacity to export.

GRAPH 1.27 Annual growth rates of EU exports for selected agricultural commodities (%)



GRAPH 1.28 EU agricultural trade balance (1000 t of crude protein)



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

EU continues to be a net agri-food exporter

Despite the outlook for reduced growth in EU agricultural production in the coming years, the EU will still be able to remain a net exporter for several agricultural products. This will also be partly due to changing consumption patterns in the EU (e.g. reduced meat consumption). As a result, the export capacity (expressed through self-sufficiency rates above 100%) could mostly be expected for animal products. The EU could even further improve its net exports of certain crops, in particular soft wheat, barley and olive oil.

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 down

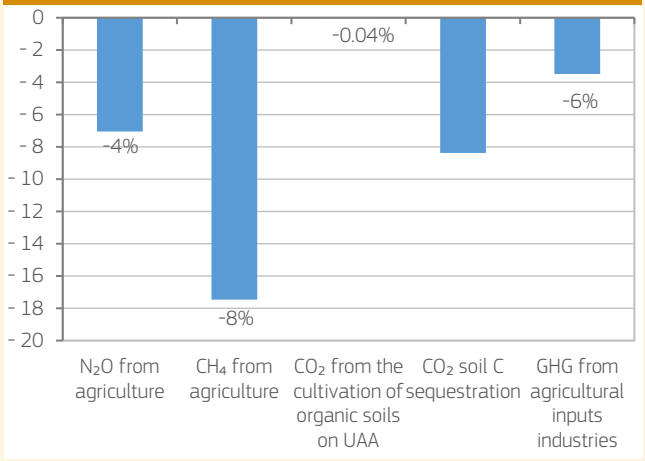
Throughout the outlook, growth rates for EU exports of agricultural products are expected to be lower than the average rate seen in the previous decade. This will mainly be due to increasing self-sufficiency rates in the main import-dependent countries, growing competition for EU products from products 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 high value products, in particular because of the EU quality and safety standards. Growth rates for exports of beef meat, and most dairy products could be reduced the most and could even become negative in the case of soft wheat, pigmeat, butter and wine, with China likely to be the strongest driver behind this reduced level of exports. The EU market share in world trade, in volume terms is projected to change from 32% in 2022-2024 to 29% in 2035 for pigmeat, remains stable at 12% for poultry, reduces from 16.6% in 2022-2024 to 14.2% for wheat, and from 25.9% in 2022-2024 to 22.6% in 2035 for dairy products in milk equivalent.

The EU is set to increase exports of proteins

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

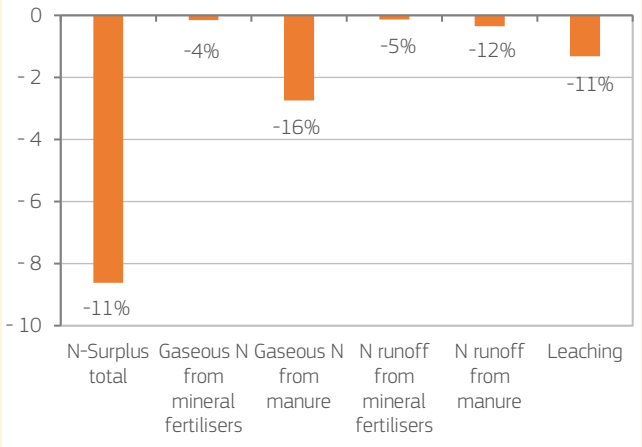
ENVIRONMENTAL ASPECTS

GRAPH 1.29 GHG emissions change 2017-2035 (absolute change in million t CO2 eq and percentage change)



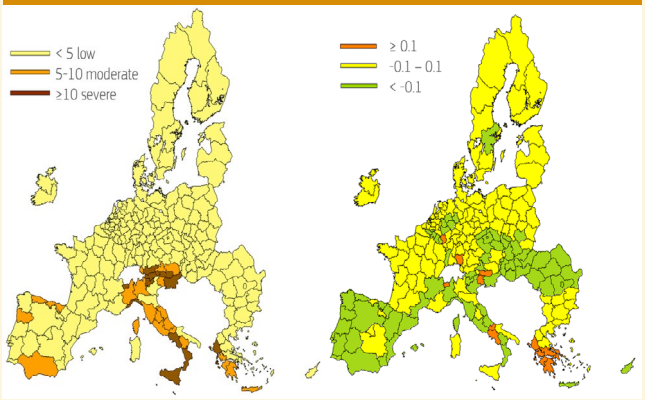
Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

GRAPH 1.30 Change in N surplus per hectare of UAA 2017-2035 (absolute change in kg N/ha and percentage change)



Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

GRAPH 1.31 Soil erosion in 2035 and change (t soil per hectare)



Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023) – Data for Croatia missing.

This box illustrates some of the main climate and environmental implications for 2035, with reference year 2017, derived from the baseline projections of the December 2023 Agricultural Outlook. This baseline includes the full range of payments under the CAP 2023-2027, reflecting projected changes in agricultural area, livestock numbers, and production, including the modelling of a limited set of farming practices. A full description of the environmental indicators is provided in Chapter 8.

GHG emissions and removals from agriculture projected to improve

Nitrous oxide (N_2O) emissions from agriculture are projected to decrease by 4%, while methane (CH_4) emissions decline by 8%, including a 10% reduction in CH_4 from enteric fermentation in ruminants. Greenhouse gases (GHG) emissions from fertilisers production are also reduced by 6%. Additionally, there is a significant contribution from carbon sequestration of over 8 million t CO_2 per year (reflected as a reduction of CO_2 emissions).

Nitrogen surplus, ammonia emissions, leaching and runoff projected to decline

Total Nitrogen (N) surplus is projected to decrease by 14% (-11% per hectare). Gaseous N losses (NH_3, N_2O and NO_X) from manure are reduced by 18% (-16% per hectare), and from mineral fertilisers by 6% (-4% per hectare). Total ammonia (NH_3) emissions decline by 17%, mainly due to reductions in emissions from manure (-20%), and to a lesser extent from mineral fertilisers (-6%). N runoff from manure decreases by 14% (-12% per hectare), and from mineral fertilisers by 8% (-5% per hectare), while N leaching is reduced by 16% (-11% per hectare).

Soil erosion reduces but impacts differ by region

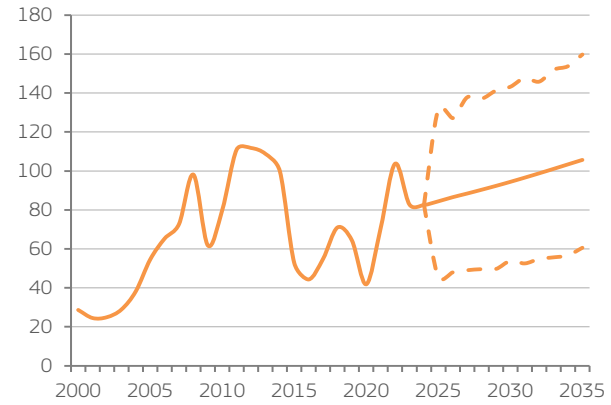
Potential soil erosion by water in agricultural areas is projected to decrease by 6% overall, 4% per hectare. In most regions, soil erosion is either unchanged or reduced, though a few regions may experience increases due to changes in crop distribution.

Drivers and caveats of the analysis

The main drivers for these changes include declines in animal numbers and reduction of utilised agricultural area over time, and the adoption of farming practices by EU farmers, such as more efficient application of fertilisers and enhancing soil management, significantly contributing to increased carbon sequestration and reduced soil erosion. The analysis does not include other important environmental or related aspects, like biodiversity and animal welfare. Moreover, only a limited number of farming practices supported in the CSPs could be modelled and linked to environmental indicators, accounting for less than 10% of the total payments under eco-schemes and environmental and climate measures.

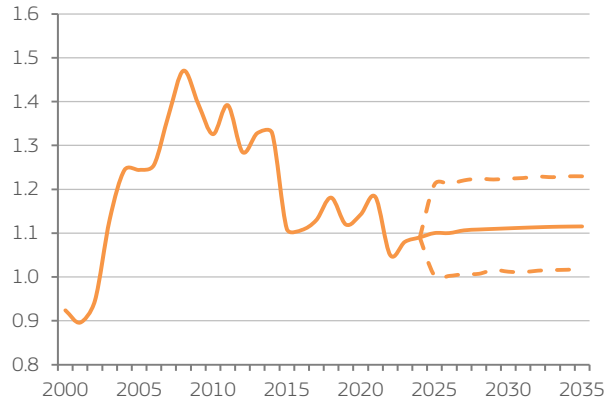
UNCERTAINTIES

GRAPH 1.32 Brent crude oil price projection (USD/bbl) and uncertainty range



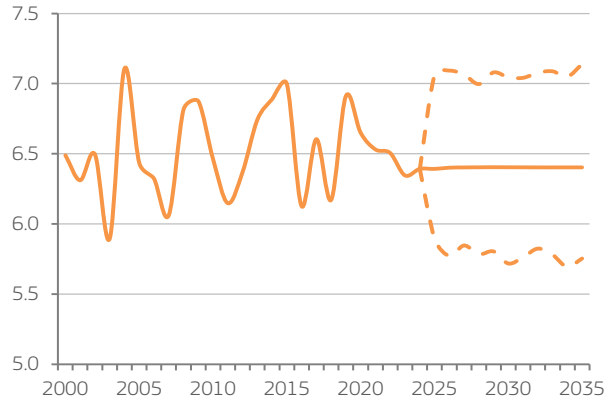
Source: DG JRC and DG Agriculture and Rural Development, based on OECD-FAO and S&P Global.

GRAPH 1.33 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 1.34 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 geopolitical conflicts such as the Russian invasion of Ukraine unexpectedly and unevenly impacted economic sectors and countries worldwide. These sectors and territories have also experienced varying recovery paths.

The outlook for EU agriculture presented in this report is based on a set of assumptions on various drivers and trends, and a consensus view of likely future market developments. As this 'baseline' projection represents just one of many possible trajectories, it is important to assess the probabilities of alternative trajectories and quantify the likely range of market outcomes around the baseline. These market outcomes could result from alternative assumptions on the various drivers and trends that underly the projections, including the economic environment, weather, animal or plant diseases, consumer preferences, and so on.

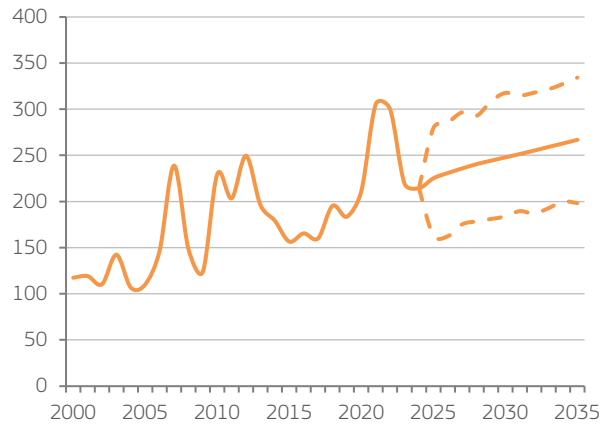
Certain drivers and trends are easier to quantify than others, and therefore this uncertainty analysis is based on generating a thousand stochastic simulations using alternative assumptions for macroeconomic conditions and yields, deviating from their baseline trajectories, creating uncertainty ranges based on the 97.5th and 2.5th percentiles of the generated values. Crop yields and macroeconomic variables are considered proxies for numerous drivers of market developments, including climate events (as they could impact yields) and geopolitical events (as they could affect the macroeconomic environment).

Oil prices and exchange rates

The baseline assumes that the crude oil price will be around USD 105 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.

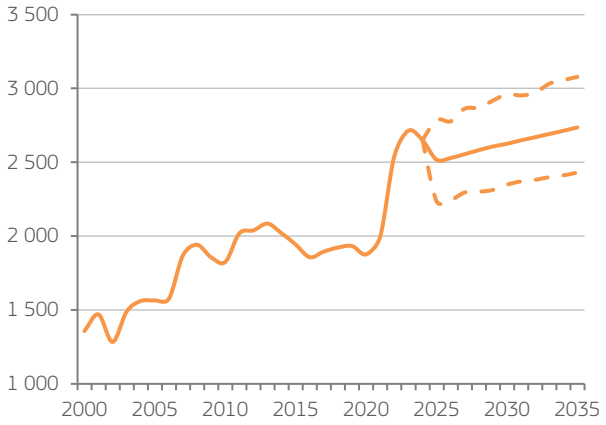
High oil prices, for example, drive up production costs (shifting the supply curve upward) and reduce the purchasing power of consumers (shifting the demand curve downward). High oil prices also reduce demand for fuel but increase the competitiveness of biofuels. The net effect on the demand for biofuel feedstocks also depends on market specifics and existing biofuel policies.

GRAPH 1.35 EU soft wheat price projection (EUR/t) and uncertainty range



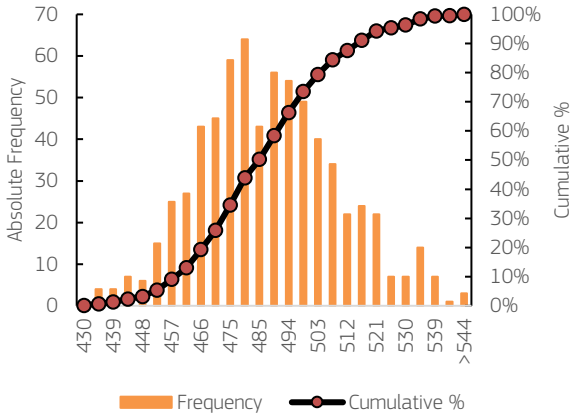
Source: DG JRC and DG Agriculture and Rural Development.

GRAPH 1.36 EU poultry price projection (EUR/t) and uncertainty range



Source: DG JRC and DG Agriculture and Rural Development.

GRAPH 1.37 Distribution of the EU raw milk price in 2035 across the stochastic distributions



Source: DG JRC and DG Agriculture and Rural Development

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 to the euro in 2024 to around USD 1.11 to the euro in 2035.

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 half of that used in the baseline 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, 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 weather 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. For example, EU soft wheat yields are projected to remain stable between now and 2035 at a value of around 6.4 t/ha. Based on the stochastic analysis, this value falls within the uncertainty band of between 5.8 and 7.1 t/ha.

Volatility of prices resulting from macroeconomic and yields uncertainty

Uncertainties related to the factors affecting supply and demand translates into volatility ranges about the agricultural commodity prices. Even if future market trends presented in the baseline lead to EU soft wheat prices that follow the central projection, this will probably not be the actual outcome as prices might vary. The uncertainty related to the development of oil prices, exchange rates, 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 uncertainty range, provided that the underlying assumptions on market trends turn out to correspond to reality. For example, future wheat price could end up being around EUR ±70/t higher or lower than the projected price. 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 poultry meat, for example, the uncertainty range around the projected price is approximately EUR ±320/t.

ARABLE CROPS

/2

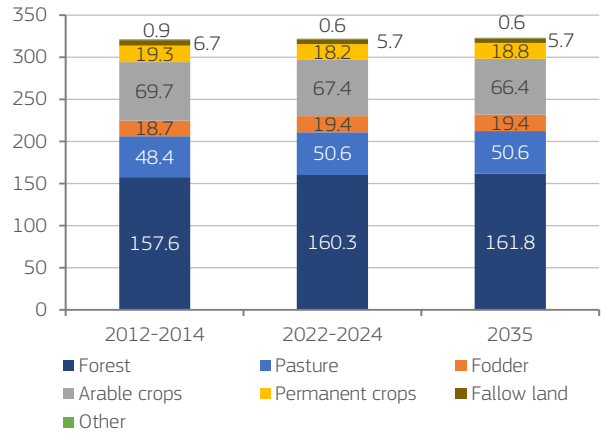
This chapter provides an outlook for arable crops, presenting production, consumption and trade trends for: (i) cereals (common wheat, durum wheat, barley, maize, rye, oats and other cereals); (ii) oilseeds and protein crops (rapeseed, sunflower seeds, soya beans and pulses); and (iii) several processed 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, especially rapeseed oil. Trade in arable crops follows production and use patterns, with the EU set to maintain its competitiveness as net global wheat exporter, while reducing imports of oilseeds.

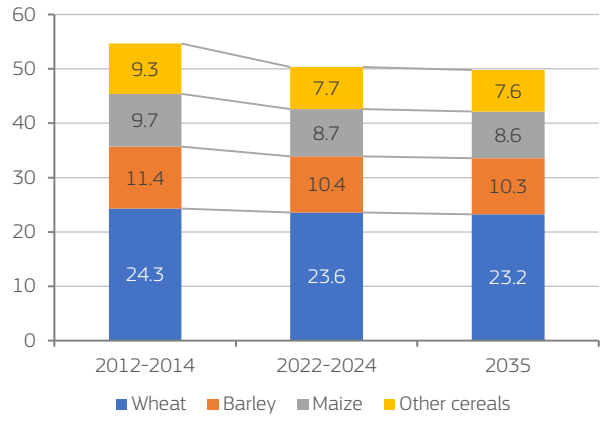
LAND USE

GRAPH 2.1 EU agricultural and forest area (million ha)

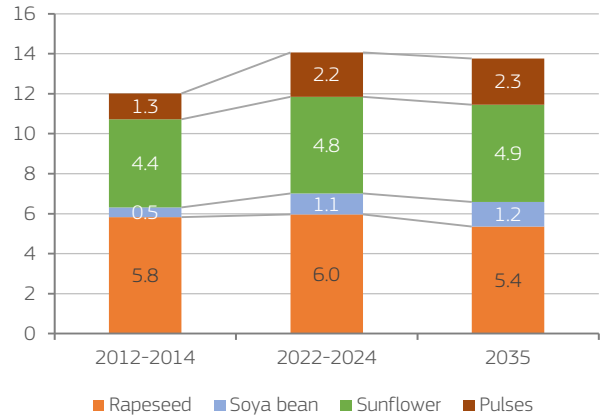


Note: Arable crops include cereals, oilseed, pulses and sugar beet.

GRAPH 2.2 EU cereal area (million ha)



GRAPH 2.3 EU oilseeds and pulses area (million ha)



Arable land set to decline marginally

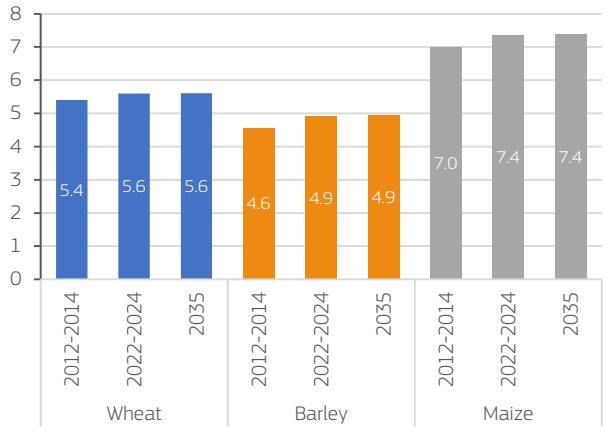
Land competition with urban area, transport, and renewable energy, does not significantly modify the land allocation to agriculture and forest, hence the overall amount of agricultural and forest land in the EU is projected to remain relatively stable at 323.2 million ha in 2035, compared to 2022-2024. Despite this overall stability, relative changes could occur in the share of land under different types of uses. The growing uncertainties due to extreme weather events and water scarcity, the volatility of input and energy prices affecting the competitiveness of EU arable crops, and the lower demand for feed and biofuels disincentivise any extension of arable area which slightly declines (-1.5% compared to 2022-2024). Pasture, fodder and fallow land area are assumed to remain stable, due to the greater flexibility given to EU member states in the CAP on permanent cover and fallow land that may remove minimum levels of these land uses, counterbalanced by the support in the CAP for agroecology practices for soil health, including set-aside and leguminous cover crops. The area of permanent crops is projected to increase (+3.6% compared to 2022-2024) due to the increasing consumer demand for healthy products such as nuts and fruits (excluding apples, peaches and nectarines), and the CAP support for innovation in this sector. Forest land is expected to increase marginally (+0.9% compared to 2022-2024) due to EU strategies supporting afforestation, reforestation and tree planting, such as the Nature Restoration Law.

Areas of soya beans and pulses set to increase

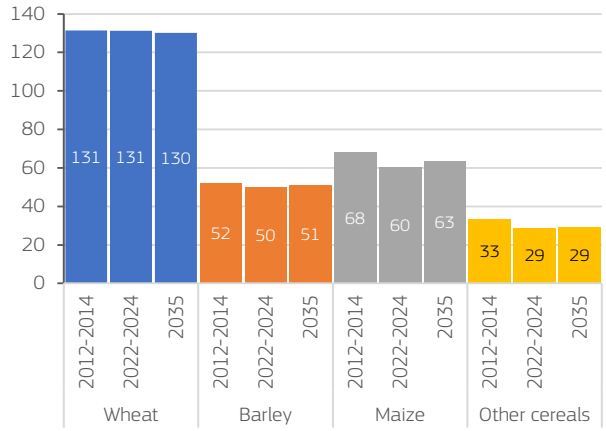
Within arable crops, cereals area is projected to slightly decline to 49.8 million ha in 2035 from 50.3 million ha in 2022-2024, due to lower demand for feed and to uncertainties that could disincentivize the cultivation of these crops (e.g. volatility of input and energy prices, increasing water scarcity). Both wheat and maize area decline by about 1.4%, other cereals (including rye, oats, sorghum and triticale) by about 1.2%, while barley declines only marginally by 0.1%. There could be a shift in the cultivated areas of some cereals (e.g. maize) from southern to northern EU countries to adjust to changes in climatic conditions. Oilseeds and pulses area increase, with the exception of rapeseed area which leads to a drop in total oilseed area. This is due to lifestyle changes leading to higher demand for vegetal proteins and to some EU policy incentives to support the production of protein crops. Pulses area is set to increase to 2.3 million ha in 2035 (+4.5% respect 2022-2024), soya beans area is projected to increase to 1.2 million ha in 2035 (compared with 1.1 million ha in 2022-2024), while sunflower area increase is only marginal (+0.6% respect 2022-2024). The area cultivated with rapeseed crops is projected to decline to 5.4 million ha in 2035 (from 6 million ha in 2022-2024), due to a decline in the use for biofuels.

CEREALS

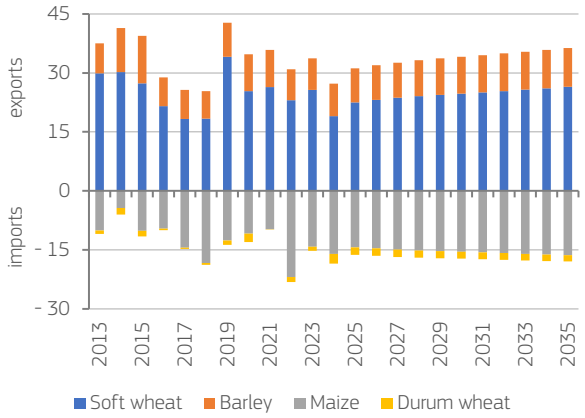
GRAPH 2.4 Cereal yields in the EU (t/ha)



GRAPH 2.5 EU cereal production (million t)



GRAPH 2.6 EU net trade of cereals (million t)



Marginal yield increase close to stability

EU cereal yields are projected to increase only marginally, remaining rather stable by 2035 compared to 2022-2024. Any negative effects on yields are assumed to come from changing weather patterns and more frequent extreme weather events, as well as from the volatility of input prices, often affected by energy price increases that might constrain their use (e.g. fertilisers). These factors would be counterbalanced by positive developments that boost yields, and by innovation improvements in sustainable intensification supported by policies (e.g. precision farming, regenerative agriculture, developing new varieties). Compared with the 2022-2024 average, wheat and maize yields could each slightly increase by 0.2% in 2035, while barley yields grow by 0.75% from an unusually low level in 2022-2024. Other positive yield developments by 2035, for wheat, barley and maize, could also derive from a decreasing yield gap between EU-13 and EU-14 countries.

Cereal production driven by maize and barley

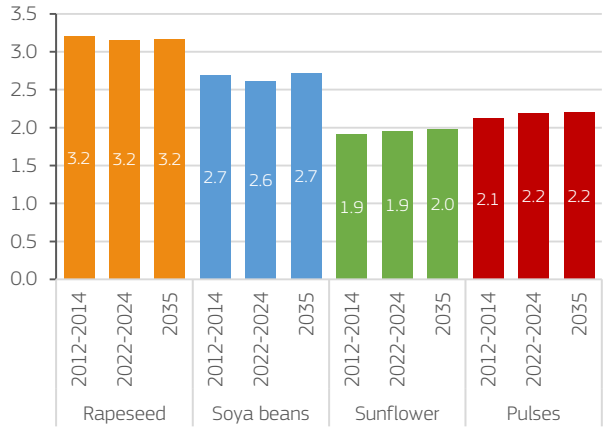
By 2035, the overall EU cereal production is projected to be 273.8 million t (1.1% above 2022-2024). Maize production is projected to 63.2 million t, while barley production is projected to 51 million t. The marginal improvement in maize and barley yields is likely to compensate for the slight area decrease. However, production of wheat is assumed to remain stable after picking up from the reduction of production in 2024, with yields improvements almost compensating for the slight area reduction. An increase in durum wheat production (2% above 2022-2024) production could partially compensate a slight decline in soft wheat production (-1% below 2022-2024).

Decreasing feed use and expanded trade

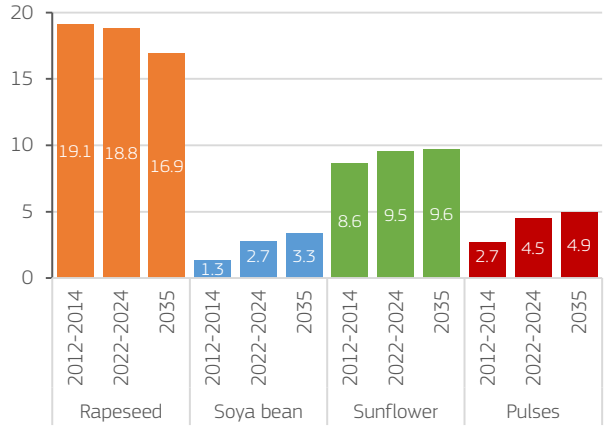
The EU's use of cereals in animal feed is projected to fall to 152.3 million t in 2035 (-1.7% compared with 2022-2024). At the same time, the overall human consumption of cereals is expected to remain stable at about 60.2 million t by 2035. In relation to trade, traded wheat, barley and maize could reach 54.3 million t in 2035 (+9.5% compared with 2022-2024). Net exports of soft wheat and barley are projected to maintain their competitive trends to 30.6 million t and 11.2 million t in 2035 respectively.

OILSEEDS AND PROTEIN CROPS

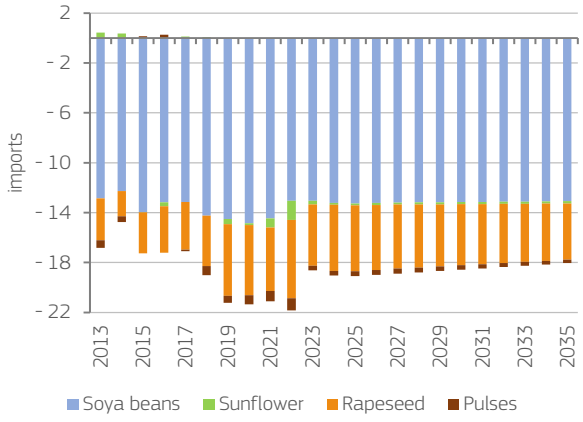
GRAPH 2.7 EU oilseed and protein crop yields (t/ha)



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



GRAPH 2.9 EU net trade of oilseeds (million t)



Stable yields despite climate change and fewer inputs

EU soya bean, sunflower, rapeseed and pulses yields are projected to increase only marginally by 2035 (up 3.9%, 1.4%, 0.1% and 0.4% compared to 2022-2024, respectively), especially considering the particularly low yields in 2022-2024. As for cereals, the possible negative effects on yields from changing weather patterns, constraints on fertiliser use due to price volatility, and lower availability of plant protection products (particularly for rapeseed), will be partially offset by positive effects from environmentally sustainable practices such as precision farming and improved soil health. Some new technological improvements will also be made available by 2035, including innovation in active substances for plant protection. Positive yields development could come also from a decreasing yield gap between EU countries which is projected to decrease for rapeseed, soya beans and sunflower.

Pulses and soya beans set to increase the most

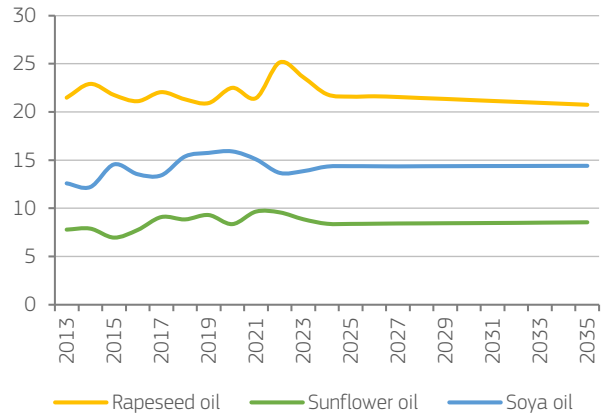
Production of oilseeds and protein crops is projected to increase to 34.9 million t by 2035 (+2.1% compared with 2022-2024). The reasons for this expansion include supportive EU policies for protein crops and increasing food demand for plant proteins which will be especially positive in boosting demand for pulses. The growth of oilseed production is expected to be driven by a 22% increase in soya bean production compared to 2022-2024 (mainly on larger area cultivated), propelled by a supportive EU policy and expectations of an increase in labelled products (GM-free). Sunflower seed production is projected to increase by 1% to 9.6 million t in 2035. The production of pulses is projected to expand by 9.9%, reaching 4.9 million t by 2035. Rapeseed production is projected to decline by -10% by 2035 (from 18.8 million t in 2022-2024), due to lower demand for biofuels. Producer prices of oilseed and protein crops are expected to decline after reaching a peak in 2022-2024, and to start growing again albeit at a much slower pace (1% per year) with respect the decade 2014-2024.

Imports of oilseeds and protein crops set to decline

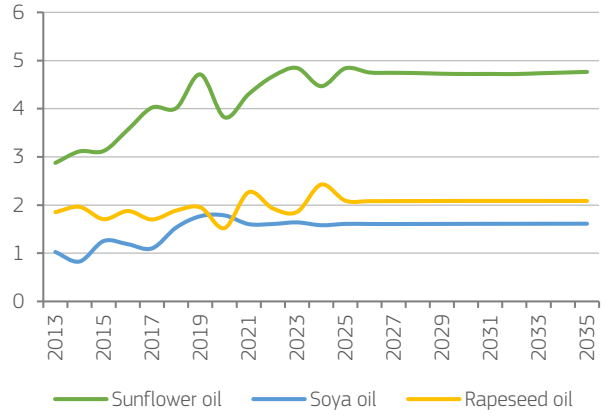
The EU is assumed to remain a net importer of oilseeds and protein crops through to 2035, although the volume of imports is projected to be lower due to increased domestic production and lower domestic demand. By 2035, net imports of oilseeds are projected to decline to 20.3 million t (-6.6% compared to 2022-2024), while imports of pulses are projected to decline to 0.9 million t (-27.7% compared to 2022-2024). Human consumption of pulses in the EU is expected to increase by 17 % compared to 2022-2024, although feed will remain the main use of pulses.

OILMEALS AND VEGETABLE OILS

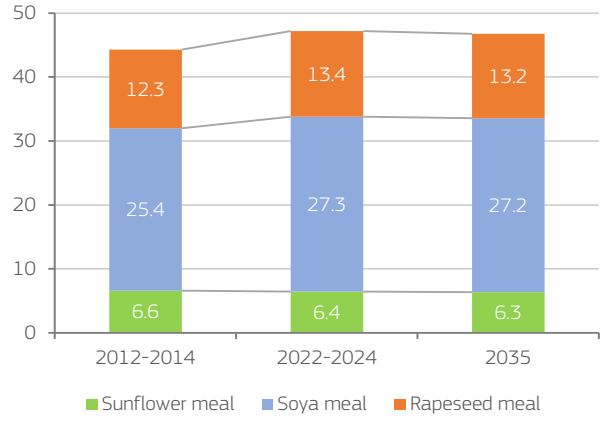
GRAPH 2.10 EU oilseed crushing (million t)



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



GRAPH 2.12 EU feed use of meals (million t)



Lower crushing rates due to less feed and biofuel demand

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 projected to decrease to 43.7 million t in 2035 (-6% compared with the historically high 2022-2024 average). Within the oilseeds category, the decline is driven by lower crushing of rapeseed to 20.7 million t in 2035 (-12% compared to 2022-2024) and sunflower seeds to 8.5 million t (-4.5% compared to 2022-2024), due to lower demand for both feed and biofuel. However, these declines are partially compensated by an increase in crushing of soya beans to 14.4 million t (+3.2% compared to 2022-2024). Lower imports of oilseeds could lead to more crushing of domestically produced oilseeds.

Stable use of oilseed oils for food but declining for biofuels

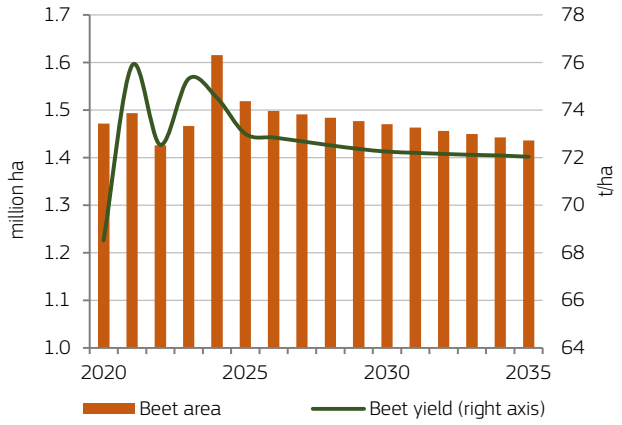
The total use of vegetable oils in the EU, including palm oil, is projected to decline from an average of 21.4 million t in 2022-2024, to 17.4 million t in 2035 (-19%). The decline is driven by the lower use for biofuels (-35.6% compared to 2022-2024), driven by decreasing palm oil and rapeseed use for biofuel (-68.6% and -34% compared to 2022-2024, respectively), while the use of oilseed oils for food (which accounts for about 57% of all uses) remains relatively stable. Within the oilseeds category, the use of sunflower oil in food is projected to increase (+2.2% compared to 2022-2024), while rapeseed and soya oils food use changes only marginally (+0.7% and +0.2% compared to 2022-2024, respectively). Further reduction in the use of palm oil is expected also for food (-4.8%).

Feed use of oilmeals to decline

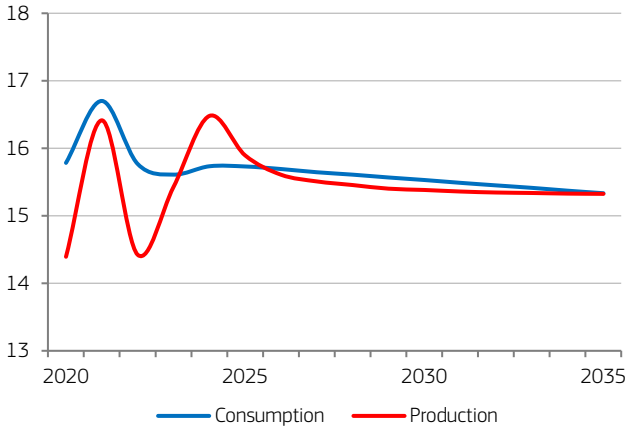
Because of lower demand for animal feed, the use of oilseed meals in the EU is projected to decrease to 46.8 million t by 2035 (-0.9% compared with 2022-2024). In addition to the assumed decline in animal production, this decline is also expected to be caused by advances in animal breeding, and reduced demand for high-protein feed in cases where organic livestock production replaces the conventional livestock production, especially for ruminants. The reduction is driven by sunflower and rapeseed meal (-1.6% and -1.5% compared with 2022-2024, respectively), while for soya meal the reduction is smaller (-0.5% compared with 2022-2024).

SUGAR

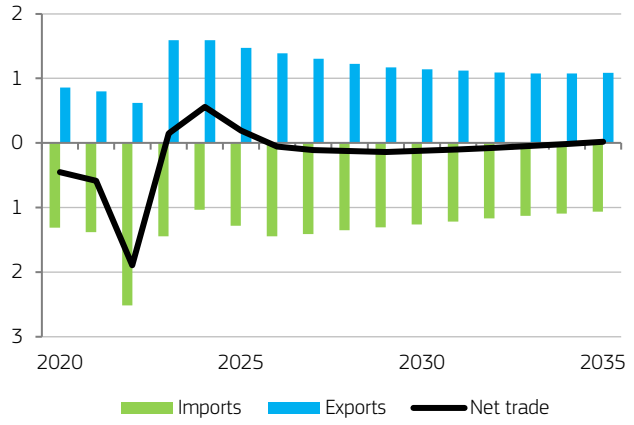
GRAPH 2.13 EU sugar beet area (million ha) and beet yield (t/ha)



GRAPH 2.14 EU sugar production and consumption (million t)



GRAPH 2.15 EU sugar trade (million t)



Decreasing prices increase pressure on beet area and limit sugar production

After a record increase in sugar prices in 2023, the EU sugar beet area reached a 6-year high in 2024/25 of over 1.6 million ha. These prices have started to come down and are projected to further decline, while the competition for land use by other crops is expected to increase, therefore the area of sugar beet is expected to slowly decrease to 1.44 million ha by 2035.

Sugar beet yields are expected to slowly decline due to more frequent negative weather events and reduced availability of plant-protection products. Later in the projection 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 projected to remain relatively stable, declining from an average of 15.4 million t in 2022-2024 to 15.3 million t in 2035.

The EU isoglucose production is also expected to change only slightly at 0.5 million t throughout the projection period. The demand for isoglucose is expected to be limited by reduced food demand and greater competition from other sweeteners.

Consumer preferences and declining population as main factors in declining consumption

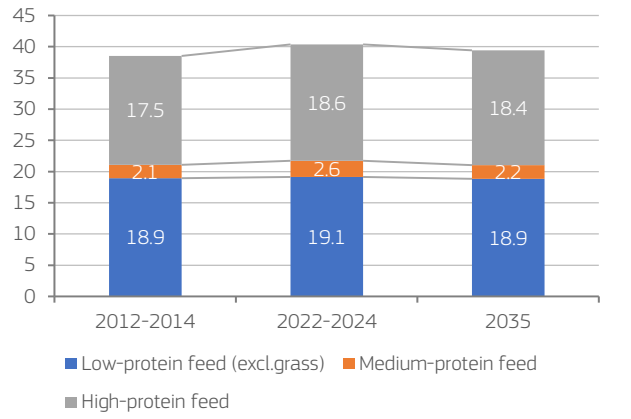
EU sugar consumption has been on a declining trend for many years, as consumers are shifting to diets with lower sugar intake, especially through reducing consumption of high sugar content products. Given the expected decline in the EU population and the sustained trend of declining per capita sugar consumption, the downward trend for EU sugar consumption is expected to continue. Therefore, EU sugar consumption is projected to decrease annually by 0.2 % and reach 15.3 million t in 2035.

EU sugar trade to remain largely balanced

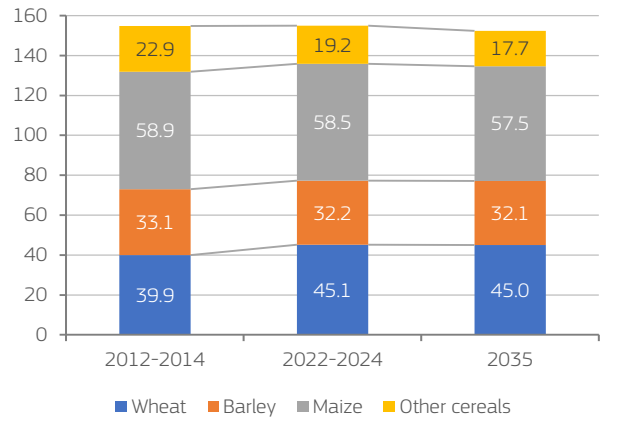
Soon after the decline in EU sugar production that followed the end of the production quota system, the EU became a net importer of sugar, until a recent production boost reversed the trend. For the projection period, EU sugar trade is expected to remain largely balanced. Exports have hit a multi-year high in 2023/24 but are projected to slowly decline with the decrease in sugar production. Sugar imports are expected to slowly decline towards 1 million t by the end of the projection period.

FEED

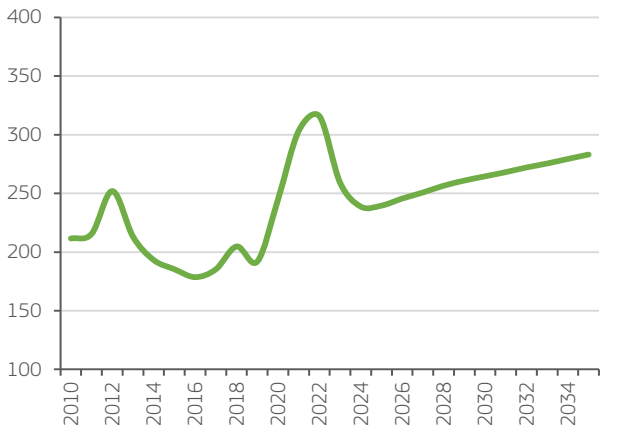
GRAPH 2.16 EU total feed demand (million t of protein equivalent)



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



GRAPH 2.18 EU nominal feed prices (EUR/t)



Lower feed demand with more efficient use

Overall demand for animal feed in the EU is projected to fall by 2.2% by 2035 compared to 2022-2024 (measured in million t of protein equivalent). This reduction is mainly due to the assumed decline in the EU's production of pigmeat and beef, and a slower growth of milk yields. This is partly offset by assumed growth in poultry and egg production. A drop in feed demand for cows and pigs is also expected due to a more efficient use via improvements in animal genetics, and more efficient and better-targeted feeding systems. By contrast, poultry feed demand could grow due to consumers demand for slow-growing chickens.

Use of medium-protein feed set to decline the most

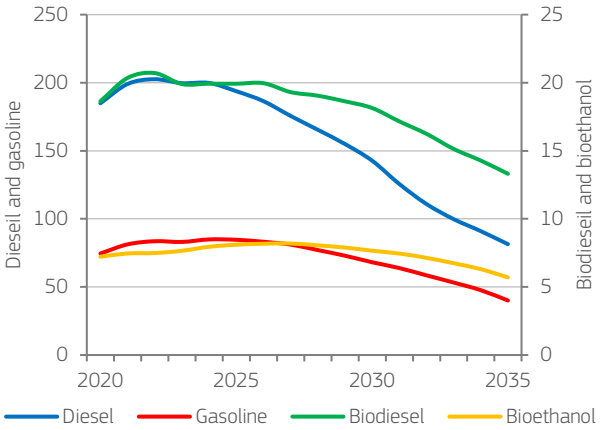
Medium-protein feed use, which contains corn gluten feed, dried distillers' grain and whey powder, is projected to decline the most (-15.7% by 2035). This combines with a higher demand for pulses for food consumption. Low-protein feed use (with less than 15% protein content), containing coarse grains, cereal brans, dried beet pulp, molasses, roots and tubers, is projected to decline by 1.5% by 2035 compared to 2022-2024. Its decline is due to the decreasing use of cereals in feed (demand for which is expected to fall by 2.6 million t by 2035), especially of other cereals such as oats and rye (7.7% compared to 2022-2024) and maize (1.7% compared to 2022-2024). High-protein feed use (over 30% protein content), containing oilseed meal, fish meal and skimmed milk powder, is projected to decline by 1.1% compared to 2022-2024. The reduction in use of high-protein feed is motivated by lower demand due to consumer concerns about both the environment and the climate more generally (such as concerns around imports of soya meals for use in feed).

Feed prices increase except for medium-protein feed

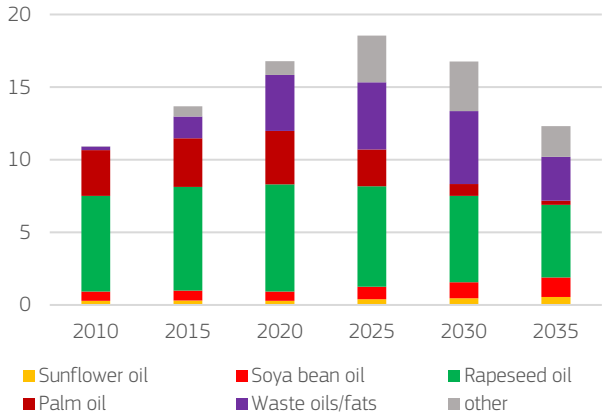
EU nominal feed prices are assumed to increase by 2035, in line with world nominal feed prices. As most cereal prices peaked in 2022, feed prices are assumed to decline in 2024 and to start growing again after 2025. The price of low-protein feed is projected to increase by about 1.4% annually due to lower EU cereals production. High-protein feed prices peaked in 2012 and again in 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. After 2025, prices of high-protein feed are projected to grow again at about 1.5% annually, in line with world's high-protein feed prices trends. By contrast, the price of medium-protein feed is expected to remain rather stable after 2025.

BIOFUELS

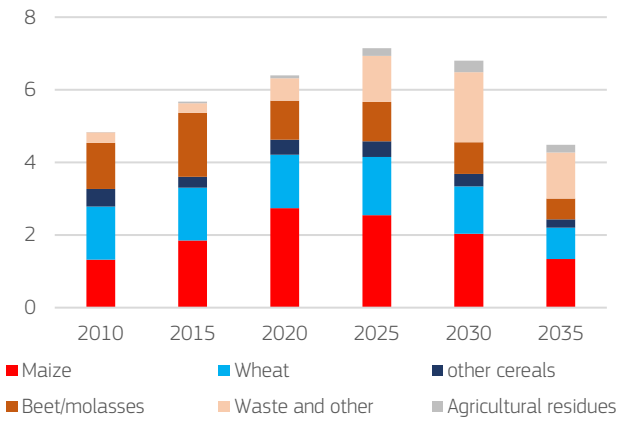
GRAPH 2.19 Use of EU conventional fuels and biofuels (billion l)



GRAPH 2.20 Use of EU biodiesel feedstock (billion l)



GRAPH 2.21 Use of EU ethanol feedstock (billion l)



New CO_2 emission reduction targets for trucks projected to weigh heavy on biodiesel demand

Assumptions for gasoline and diesel consumption are taken from a recent update of 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), the CO_2 reduction target for new cars and vans (-100% in 2035), as well as the new CO_2 reduction targets for heavy trucks (-65% in 2035). Projections for gasoline and diesel consumption in road transport are the result of the continuation of these polices and assumed trends in the improvements of autonomous efficiency.

Compared with the 2022-2024 average, the use of diesel in road and rail transport in the EU is expected to fall by 60% in 2035 to 81 billion l, and the use of gasoline by 52% to 40 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 20 billion l annually until 2026, after which the rate is expected to start declining and reach 13.3 billion l by 2035. Demand for bioethanol is also expected to peak at 8.2 billion l in 2027, before falling to 5.7 billion l by 2035.

Advanced biofuels to gain in share, but crop-based biofuels to retain the majority

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 19% in 2022-2024 to just 2% in 2035, as this feedstock is being phased out due to sustainability concerns. The use of other vegetable oils (primarily rapeseed oil) is expected to remain relatively stable at around 56% of biodiesel feedstock, while the share of advanced biodiesels is expected to grow from 36% in 2022-2024 to 42% in 2035. The share of waste oils and fats is also set to remain relatively stable over this period at around 25%, while the share of other advanced biodiesels is set to increase from 12 % to 17%.

For ethanol production, maize is projected to remain the principal feedstock, but its share is expected to fall from 39% in 2022-2024 to 30% in 2035, while the share of wheat is expected to decline from 21% to 19%. The total share of crops (cereals, sugar beet and molasses) in ethanol feedstocks is expected to fall from 82% in 2022-2024 to 67% by 2035. At the same time, the share of advanced biofuels, is expected to grow from 18% to 33%, with most feedstock coming from the municipal waste category.

MILK AND DAIRY PRODUCTS

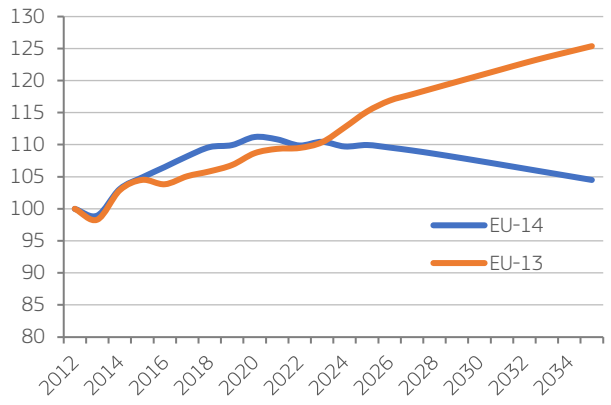
/3

This chapter presents projections for EU raw milk and dairy commodity markets and reviews the relevant drivers. The outlook takes into account the path to a more sustainable dairy sector and to more segmented dairy markets, both of which could increase the value added in domestic and global sales of EU dairy commodities.

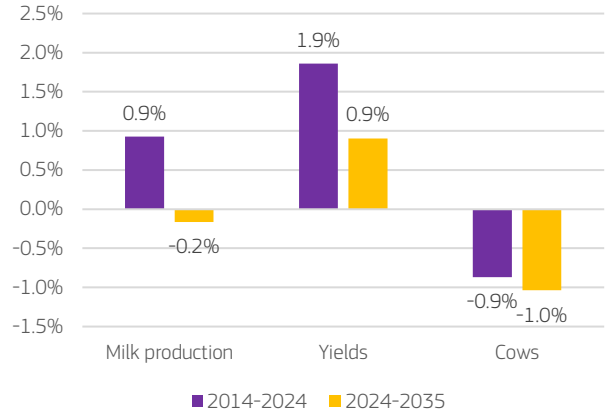
The outlook also reflects on the possible challenges farmers can face from increasing contributions of the dairy sector to more ambitious national and EU environmental policies and sustainability goals, which could contribute to a limited milk solids availability in the medium term. To cope with these challenges, a continued gradual shift is projected towards higher value-added dairy products in the EU export portfolio, while the raw milk price in the EU is likely to remain relatively high, supported by strong domestic and global demand for milk fats.

MILK

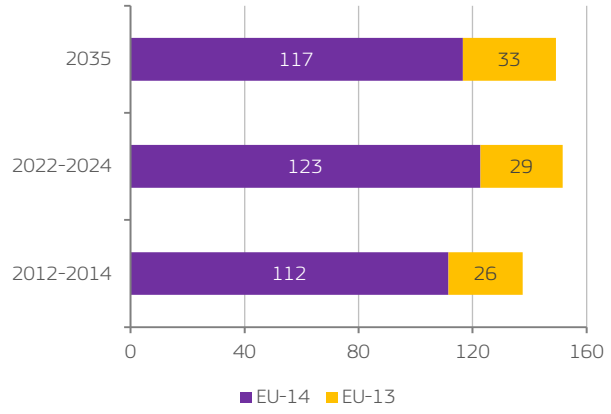
GRAPH 3.1 Evolution of EU cow's milk production (index 100 = average 2012-14)



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)



EU milk pool limited by decreasing cow herd

EU milk deliveries have steadily increased in the last decade (+0.9% per year) due to increasing productivity of the sector. This provided a stable milk pool for the EU dairy industry, which preserved its leading position on global dairy markets. Although EU milk yields are to further increase, the EU milk production is about to reach a turning point in the coming years, where the continuous decline in the dairy cow herd is not anymore counterbalanced with increasing milk yields, leading to a prospect of decrease in the milk pool (-0.2% per year) and the milk solids availability.

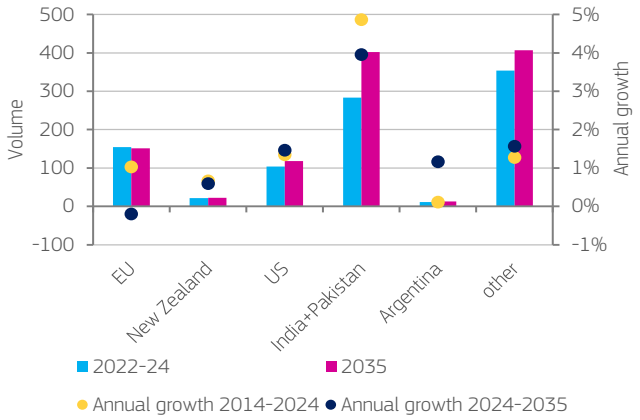
The regional differences in the development of EU milk production are substantial. In some eastern EU countries, there is still a potential to continue the increasing milk production trend of the past years (e.g. Poland). Many other countries that drove the increase in EU milk production in the past are to reach the limits of further rapid gains in productivity, and also face constraints to contribute to more ambitious environmental objectives (for example in the Netherlands, Belgium, and Denmark).

EU milk production to contribute more to environmental sustainability objectives

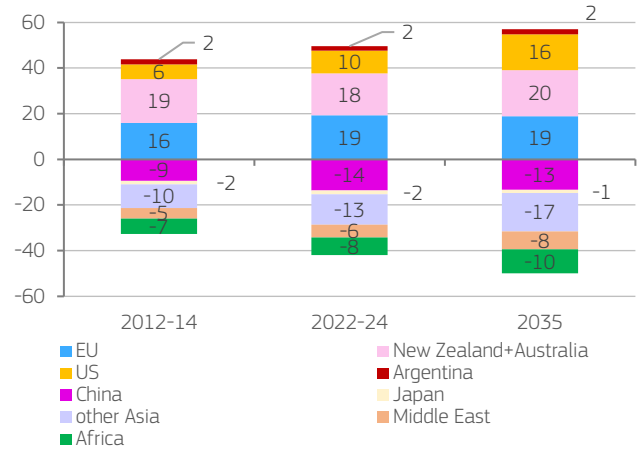
EU milk production will continue to be driven by increasing contributions from the sector towards more environmentally sustainable agricultural and food systems in the coming years. On the one hand, this can generate more added value and stability in the sector through price markups on products under high quality and sustainability standards, and due to diversified production systems (e.g. organic, quality schemes). On the other hand, already announced stricter national environmental policies (e.g. policies aiming to reduce excessive nitrogen emissions) may further accentuate the shrinking of the EU dairy herd (-11% by 2035 compared with the 2022-2024 average). Together with a prospect of a slowdown in the growth of milk yields, the milk pool available for dairy processing remains limited.

Milk yields can increase by 0.9% per year by 2035, slowing down to half of the growth rate seen in the past decade. While social sustainability considerations (increased animal welfare and thus better animal health and well-being), could still contribute to increasing yields, some past drivers of productivity gains (e.g. closing productivity gap due to structural differences between EU countries) are gradually becoming less impactful.

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

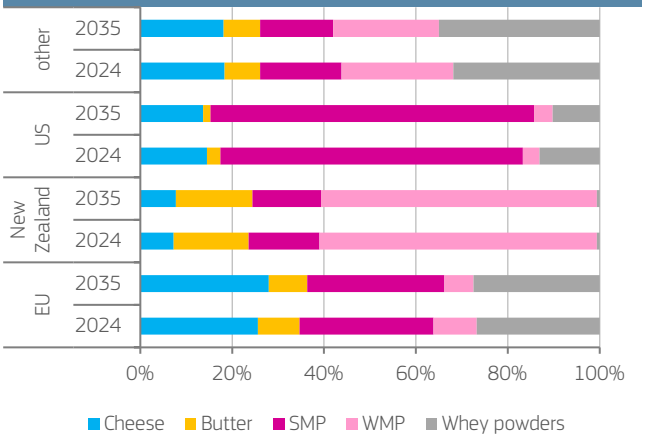


GRAPH 3.5 Milk surplus and deficit in selected countries and regions (million t of milk equivalent)



Note: surplus and deficit is calculated as domestic consumption minus domestic production

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



Global milk production continues to increase

The global dairy market will continue to expand, with global milk production increasing at a similar rate as in the last decade (+1.8% per year). However, this growth will be driven less by the traditional exporting countries, and more by some larger consumer countries that are set to increase their efforts to become more self-sufficient. India and Pakistan continue to be a powerhouse of global milk supply, while some Asian and north African countries are also expected to increase their production. Nevertheless, the additional production capacities in Africa and Asia will be mostly absorbed by domestic markets, and thus global dairy trade will still play a crucial role to satisfy global demand (around 8% of the milk remains traded). The dynamic increase in Asian dairy consumption in the future will increasingly be driven by South-East Asia, while China's import demand is expected to stop increasing due to increased domestic production, the slowdown of its economic growth and its ageing population.

EU keeps its position on global export markets

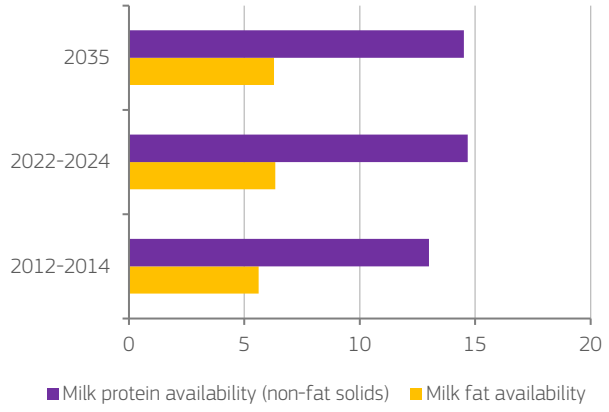
Global dairy imports are to further increase, but the growth rate is expected to slow down somewhat to 1.3% per year between 2024 and 2035 (measured in milk equivalent volumes), compared with 1.7% in the past decade. The EU and New Zealand will remain the world's top two exporters of dairy products, accounting for around 46% of global exports by 2035, and together with the US accounting for around 65%. The EU is expected to orient its portfolio of exported commodities towards higher added value products. With this shift, EU export volumes are unlikely to increase (-0.2% per year until 2035), although an increase in value terms is still possible (+0.4% per year). Further prospects for increasing milk production in New Zealand remain limited, due to constraints to the growth potential in milk yields in grassland-based production systems, and to environmental considerations not favouring an increasing cow herd. US production, facing less strict environmental policy constraints, can increase its share of global exports (20% share of global exports in 2035, compared with 15% in 2022-2024). Argentina will likely strengthen its position as important exporter in South America.

Differentiation of global imports set to support EU trade

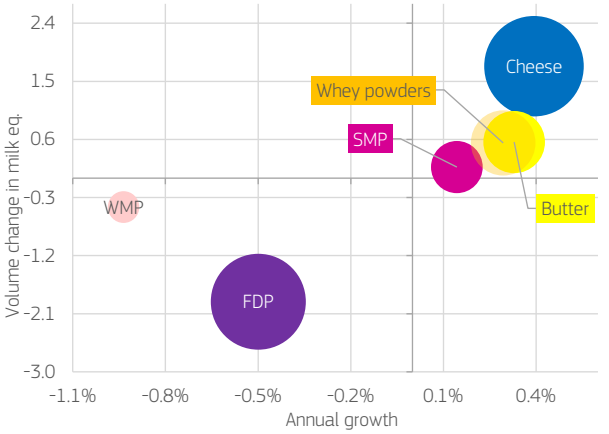
The increasing domestic production capacities in China will likely slow down the strong import growth achieved in the past for skimmed and whole milk powders. The expected strong demand for milk powders in North Africa, the Middle East and South-East Asia will only partly compensate for this decline. Therefore, the slowdown of global import growth of dairy products will mostly impact milk powders. By contrast, exports of cheese, whey and butter could grow at a similar rate as in the last decade (+1.3%, +1.4% and +0.7% annual growth in global exports). The profile of EU dairy exports will likely adapt to these market developments by shifting towards higher value-added goods.

DAIRY PRODUCTS

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

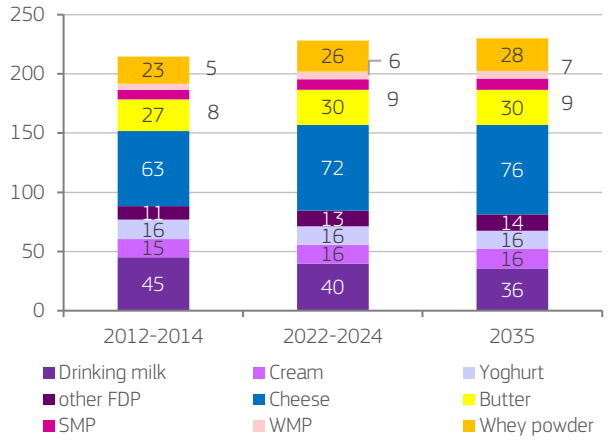


GRAPH 3.8 EU production of selected dairy products change (million t of milk equivalent) and annual growth (%) in 2024-2035



Note: sizes of circles correspond to the volume of milk (in milk equivalent) used for their production in 2022-2024

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



Limited future milk solids availability

Average milk solids content of EU raw milk production is to still improve by the adoption of better feeding strategies and adjusted herd structure (e.g. more dairy cow breeds offering more butterfat and protein content). However, the growth rate of the past decade is expected to slow down, as a similar increase is no longer possible in the EU countries driving the past development (e.g. Austria, Denmark and Ireland). Climate change can increase the likelihood of adverse weather events in some regions, with a potentially negative impact on grasslands and on animals (e.g. via heat stress). Nevertheless, the impact of climate change on milk yields is ambiguous and hard to quantify, due to its locally different implications. The slower growth in milk solids content, combined with a reduction in EU raw milk deliveries, would lead to a 1% decrease both in milk fat and non-fat solids over the period from 2024 to 2035.

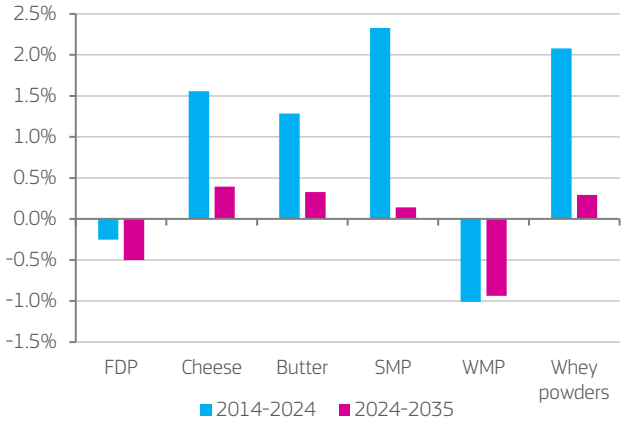
Cheese and whey absorb a higher share of the milk solids pool

EU dairy processing is expected to adjust to the decreasing milk solids pool, combined with changes in consumer preferences, competition with other global suppliers on export markets, and increasing processing costs, which may make processors to opt for producing more dairy ingredients with higher value added. These drivers combined will likely favour the cheese and whey production stream, which is expected to absorb around 46% of the EU milk pool by 2035, compared to 44% in the period 2022-2024. In parallel, butter production could only achieve a limited growth (+0.3% annual increase), and skimmed milk powder (SMP) production could remain stable. Whole milk powder (WMP) production is expected to decline (-0.9% per year), also due to limited EU competitiveness on global markets The consumption of drinking milk is likely to continue its long-term declining trend, leading to decreasing production for fresh dairy products (FDP).

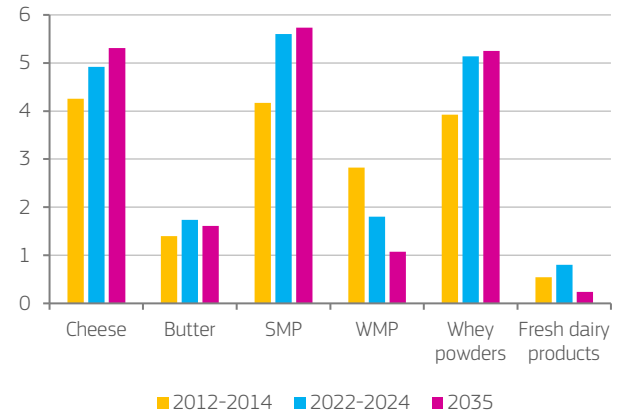
Strong EU domestic demand for dairy products

Strong domestic consumption will continue to be a stable outlet for the EU dairy industry. Consumption per capita of EU dairy products will likely remain robust, with a yearly increase of 2 kg per capita for those commodities analysed in this report. Changing consumer preferences will continue affecting demand, with more consumers opting for dairy products with lower fat and sugar content or products addressing food intolerances (e.g. lactose intolerance). Lifestyle and health-related choices will likely further increase demand for fortified (with vitamins and minerals) and functional products (geared towards specific nutritional content). While the market segment for plant-based alternatives has steadily grown, its impact on the dairy commodities demand will likely remain limited.

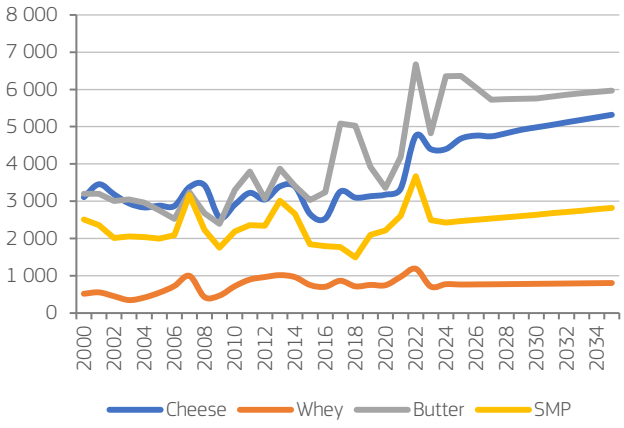
GRAPH 3.10 Annual change in use of selected dairy products in the EU (%)



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



GRAPH 3.12 Dairy commodity prices in the EU (EUR/t)



Cheese market set to continue growing

Strong domestic demand and increasing import demand will support a further increase in EU cheese production. Cheese is to remain the EU's flagship export product of the dairy industry (+0.8% yearly increase in exports until 2035). Although recent food price inflation has somewhat slowed down the increase in EU cheese consumption, it still can increase by 0.4% per year. Within the fresh dairy products (FDP) category, drinking milk consumption is set to continue its declining path also in the coming decade. In parallel, the consumption of yoghurt could remain stable, while cream consumption can even slightly increase. While FDP consumption in the EU is to decline by a similar rate as in the previous decade (-0.5% per year), EU exports will likely decrease at an even higher rate, in part due to decreasing demand in China. EU consumption and exports of butter are expected to remain relatively stable (slightly decreasing only due to exceptionally high exports in 2024).

More value added from EU whey derivatives

Global demand for whey products is to remain strong, driven by increasing food use and new product lines covering nutritional or health functions. Supported by this export opportunity, EU whey production could increase by 0.3% per year in the next decade, while EU whey exports could increase by 0.2% per year over the same period. EU production and exports of SMP are expected to remain stable (can even increase slightly compared to already strong levels in 2022-24) despite increasing global competition. Domestic use of SMP can still increase but at a slower rate than in the past decade (+0.4% per year, compared with +1.1% per year in the past). WMP production is set to further decline at a similar rate to the past decade (-0.9% per year), due to both reduced global demand and low EU competitiveness. As global import demand for WMP will likely not recover, EU exports are expected to experience an even larger decrease (-5% per year), while EU domestic use could remain stable, supported by food processing. Overall, while the total volume of EU dairy exports is projected to slightly decrease by 0.2% per year, exports are still expected to increase in value (+0.4% per year). This is due to a shift towards more value-added products in the EU export portfolio, and relatively high world market prices.

EU raw milk price reaching a new, higher, equilibrium

EU raw milk price is expected to remain well above pre-2022 levels in the next decade, but still below the historical high of 2021/22. This development will largely be driven by the inflationary effect, remaining rather flat in real terms. Dairy commodity prices can take different paths of development. EU cheese prices are expected to steadily increase, driven by strong demand for milk fat with tight EU supply. Butter prices are to somewhat decrease after current record high levels (as butter could face greater competition from other fats at relatively high prices), but they are expected to stay at high levels and on an increasing path until 2035. At the same time, SMP prices could only slightly increase, while whey prices will likely remain flat.

MEAT PRODUCTS

/4

This chapter presents the drivers of the EU's meat markets, and introduces projections for beef and veal, pigmeat, poultry, and sheep and goat meat.

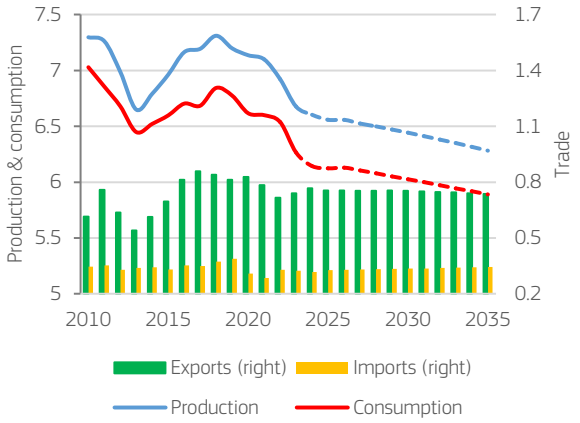
Sustainability concerns look set to take a more prominent role in shaping the production and consumption of meat in the EU. In this context, the most important outcomes that could be expected by 2035 include (i) a lower per capita meat consumption, and (ii) lower production based on more extensive and environmentally friendly systems, along with fewer animals or lower density. Poultry will be the only sector to expand in terms of production and consumption.

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. While world consumption and import demand are expected to expand (except for pigmeat), opportunities for EU export growth should mostly benefit the poultry sector.

EU prices for meat products will generally be increasing and continue to reflect increasing production costs, lower supply, and changes in world prices.

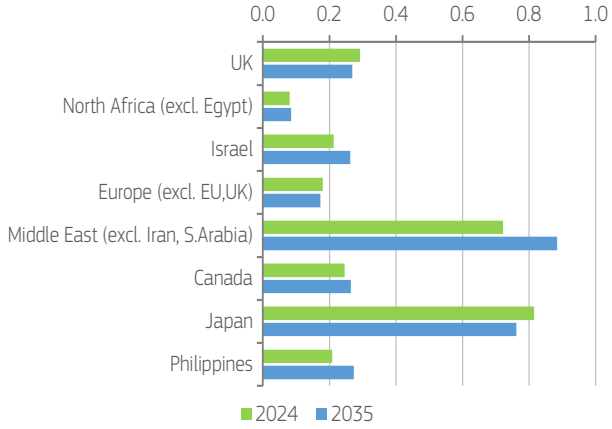
BEEF AND VEAL

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

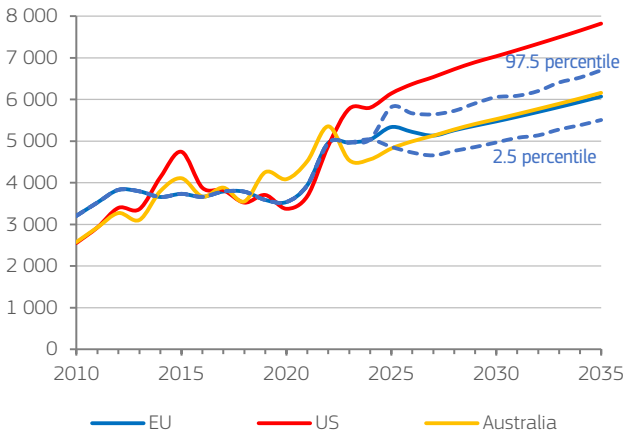


Note: Production corresponds to gross indigenous production; trade includes live animals.

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 projected to continue declining and fall by 450 000 t to 6.3 million t by 2035 (-6.7% compared to the 2022-2024 average). At the same time, the EU cow herd is set to decrease by 2.9 million heads over this period (-9.6%). The dairy herd should decline progressively (see dairy chapter) while the suckler cow herd is projected to decrease to 9.5 million heads by 2035 (-770 000 heads or -7.5% compared with 2022-2024), due to low profitability and the prospects of a stricter regulatory framework on sustainability aspects. However, this decline hides opposing developments in some 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. 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 2024 because of tight EU supply, high prices, and 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 9.8 kg per year to 9.2 kg per year (-5.9%).

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

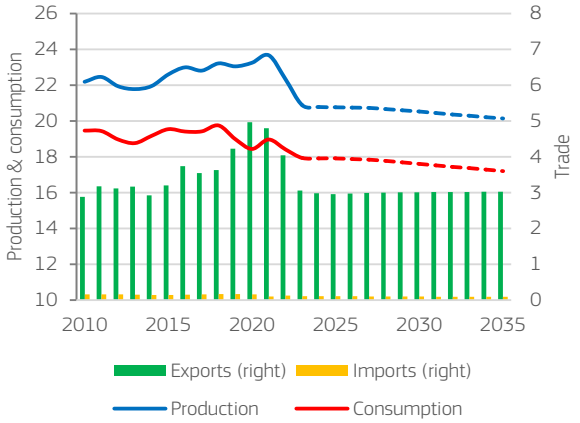
EU exports of live animals are expected to decline gradually by 3.2% per year between 2022-2024 and 2035 due to increased competition, less animals available for exports, and concerns about animal welfare in long-distance transport. However, EU meat exports are due to continue growing by 2035 (+0.9% per year), mainly due to continued or rising demand from trade partners and a partial substitution of live exports for meat. The EU will continue exporting mainly to markets in neighbouring countries (UK, Türkiye, the Balkans, the Middle East, and North Africa). EU beef imports declined in 2024 due to limited supply from Brazil finding more rewarding markets in other parts of the world. In the coming years, beef imports into the EU could increase only slowly (+0.6% per year) and reach 343 000 t by 2035 influenced by limited EU supply, a reduction in consumption, but sustained demand for certain cuts.

Beef prices expected to reach around EUR 6 000/t

After a period of high EU beef prices in 2022-2024, prices are expected to slightly 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 beef output may result in prices settling at a higher level than in the past, reaching around EUR 6 000/t by 2035.

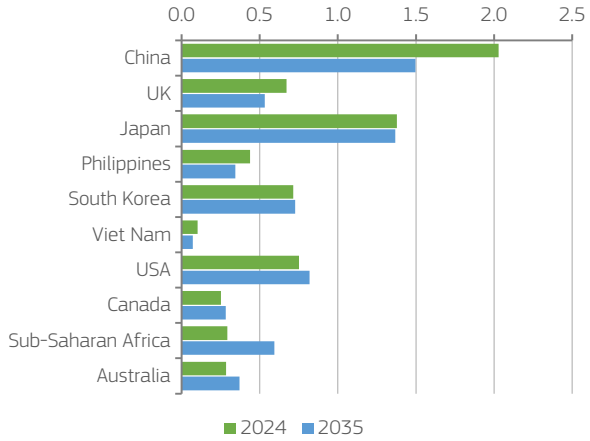
PIGMEAT

GRAPH 4.4 EU pigmeat market balance (million t)



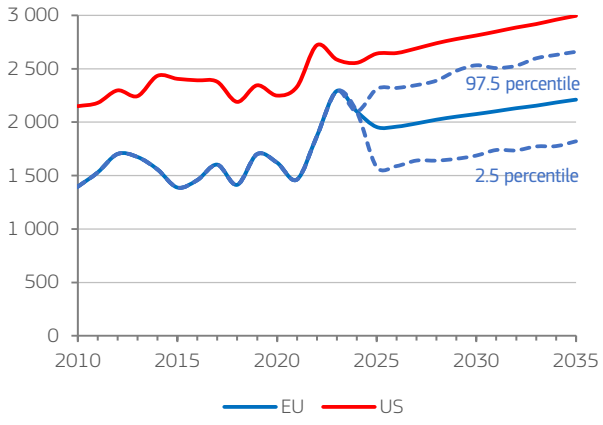
Note: Production corresponds to gross indigenous production.

GRAPH 4.5 Pigmeat imports of main EU partners (million t)



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 implementation of stricter laws in certain EU countries and declining export opportunities, these trends are expected to reduce production. Therefore, EU pigmeat production for meat is projected to fall by 0.5% per year between the 2022-2024 average and 2035 (or around 1.2 million t compared with 2022-2024).

In the EU, environmental and societal concerns will continue to negatively affect consumer preferences for pigmeat. Additionally, the relatively higher fat content compared to other meat types may be viewed less favourably by some consumers. Therefore, EU per capita consumption is projected to decrease by 0.4% per year, falling to 30 kg in 2035 (a drop of 5% compared with the already lower levels recorded between 2022 and 2024 compared to pre-2021 levels).

Pigmeat exports set to decrease while Asian production recovers

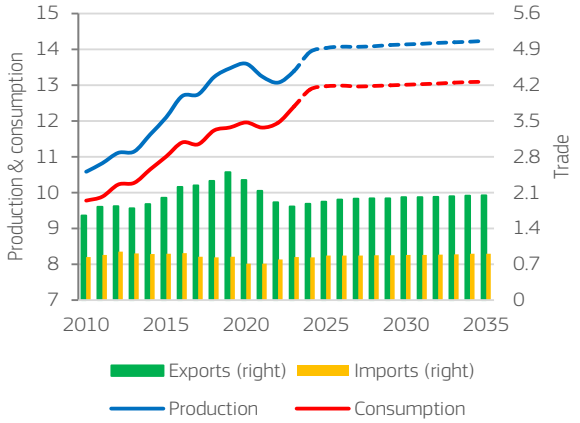
Production capacity in China, the Philippines and Viet Nam is expected to recover, leading to lower import demand, despite the expected continuation of ASF outbreaks. In contrast, there could be increased demand for imports in the US, Australia, Sub-Saharan Africa, Switzerland and some other Asian regions. Over the coming decade, the UK could become the largest single export destination for EU pigmeat (replacing China) even though UK demand is expected to decrease over the projection period. EU exports could decrease by 1% per year between the last 3-year average and 2035 (-338 000 t between 2022-2024 average and 2035) considering the high exports volumes in 2022 to China. Accounting EU export volumes from 2024, they are projected to remain almost stable until 2035. The EU will need to strengthen and diversify its pigmeat export portfolio in the coming years. Pigmeat imports to the EU are projected to remain low with a decrease of 2.2% annually between the 2022–2024 average and 2035, mainly because the UK is focusing on its domestic market, while significant increases in imports from other countries are not likely.

Pigmeat prices expected to remain higher

After the price spike in 2022-2023, EU pigmeat prices declined in 2024 and production costs are expected to remain low in the short term. However, it is uncertain to which level they will fall back. It is expected that, in the medium term, prices could stay higher than the levels seen in the past due to increased costs and a tighter EU supply, reaching EUR 2 210/t by 2035.

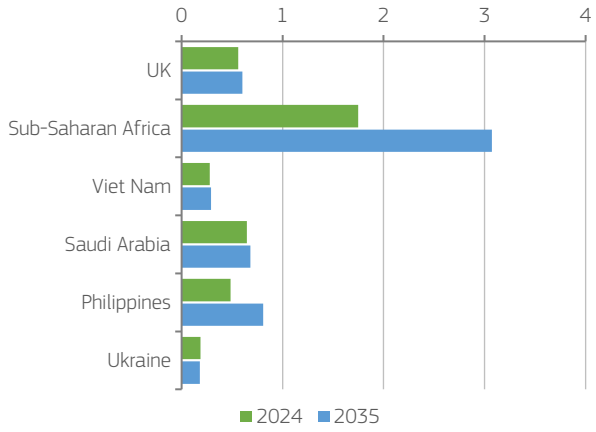
POULTRY MEAT

GRAPH 4.7 EU poultry meat market balance (million t)

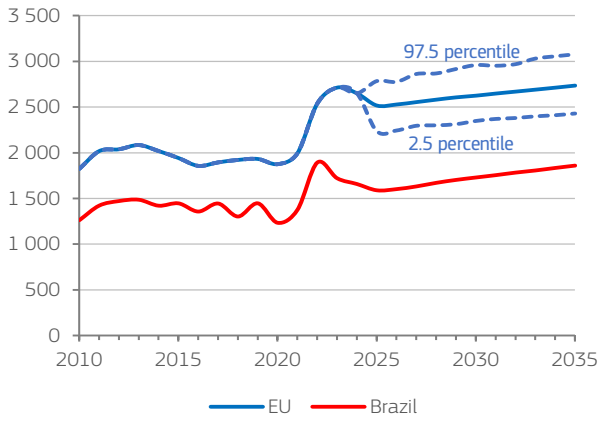


Note: Production corresponds to gross indigenous production.

GRAPH 4.8 Poultry imports of main EU partners (million t)



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



Poultry production and consumption set to increase further

In 2024, EU poultry production has continued to increase against the backdrop of a constrained growth in the previous year, stable demand as well as favourable feed costs and output prices. Changes in the consumption patterns in the EU together with growing export opportunities are set to increase EU poultry production by 770 000 t between now and 2035 (+0.5 % per year between the 2022-2024 average and 2035). A stricter environmental legislative framework and a shift to less intensive production systems will mean that production 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 and will challenge the poultry sector, and more particularly free-range production systems in the EU in the coming years. Thanks to a change in consumption patterns, EU poultry consumption is projected to increase by 0.5% per year between the 2022-2024 average and 2035. This translates into an increase in annual per capita consumption from 24.2 kg to 25.8 kg.

EU poultry trade expected to increase

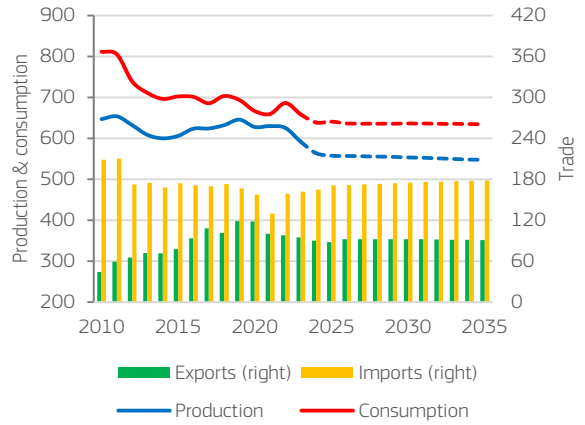
After some decline in recent years, EU poultry exports are expected to regain momentum in the coming years. In line with increased production, exports will grow slowly by 0.8% per year between last 3-year average and 2035, reaching a level of more than 2 million t. EU exports are expected to remain strong to the UK and thanks to increasing demand from Sub-Saharan Africa and some Asian countries. The EU is expecting rising demand for foodservice supply and food processing from poultry imports. In addition, the duty-free quota-free agreement with Ukraine (valid until June 2025) has led to a significant increase in imports. By 2035, imports are likely to have increased by a magnitude of 0.9% per year compared to last 3-year average, to a level of 904 000 t.

Poultry prices set to increase further

EU poultry prices are expected to decrease slightly when the current inflationary context stabilises. However, they are projected to gradually increase to around EUR 2 730/t by 2035, mainly due 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.

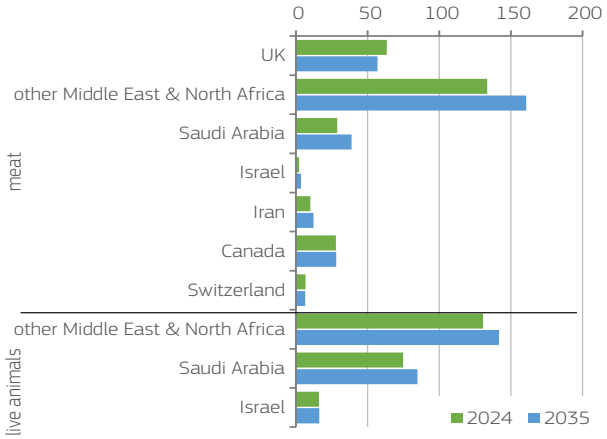
SHEEP AND GOAT MEAT

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

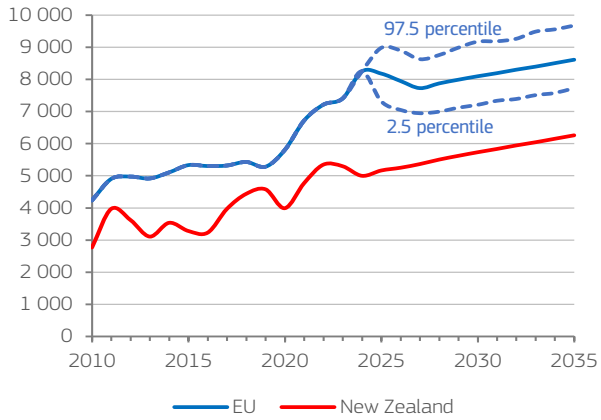


Note: Production corresponds to gross indigenous production; trade includes live animals.

GRAPH 4.11 Sheep imports of key EU partners (1 000 t)



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



Production set to decline, but consumption sustained

EU production of sheep and goat meat is projected to decrease, falling by 0.7% per year until 2035 to 547 000 t. This is mainly driven by the continued production decline in the EU-14 (-1.3% per year), although production may increase by 0.9% per year in the EU-13. However, animal disease outbreaks could have an impact on production levels over the outlook. Between 2010 and 2024, the EU recorded a decline in the sheep and goat herd of around 9.5 million heads (-12 %). This significant structural decline is expected to soften, with coupled income support in place and favourable prices remaining. Production will remain concentrated in a few EU countries, with slaughterings in Spain, Greece, France, Ireland, and Romania representing almost 75% of the total EU production in 2024.

EU per capita consumption is expected to remain relatively stable by 2035 at around 1.2 kg per year, mainly due to the sustained consumption patterns related to religious traditions. In general, sheep meat consumption is less price sensitive than other meats and very affected by peaks in seasonal demand.

Imports expected to grow while meat exports to the Middle East will likely continue

EU exports of live animals are projected to decline to 45 000 t by 2035 (-18.7% compared with the 2022-2024 average). This will mainly be due to animal welfare concerns in long-distance transport and financial risks associated with certain destinations. After two years of lower exports in 2023 and 2024 and high domestic prices, EU exports of sheep and goat meat are projected to reach 45 700 t by 2035 (+17.8% compared with 2022-2024) based on a consolidation and expansion in the Middle East, though export destinations remain uncertain and may vary while quantities remain volatile. EU sheep and goat meat exports to the UK could decline following the trade agreement between the UK and New Zealand, and could lead to more exports from the UK to the EU. In addition, the EU-New Zealand trade agreement is expected to increase EU imports of sheep and goat meat due to high EU prices. Therefore, imports are set to further increase to 175 000 t by 2035 (+10.1% compared with 2022-2024).

Sheep meat prices to remain high

After four years of very high prices, EU prices for sheep and goat meat are expected to decline somewhat before trending upwards and reach around EUR 8 600/t by 2035. The price level in the future is likely to remain above 2020-levels due to tight supply and inelastic EU demand. The gap between the EU and prices in New Zealand and Australia will remain, reflecting differences in production and labour costs.

WHAT IF SCENARIO

/5

This chapter presents the results of a 'what if' simulation carried out with the Aglink-Cosimo model, to simulate the resilience of the EU livestock sector against a modelled yield shock on oilseeds production in main producing countries, since the EU is heavily reliant on protein feed imports.

Against an assumed weather shock in 2035, the simulation assesses the potential mitigating effects of technological change-driven improvements in crop yields and feed efficiency, as potential preparedness measures to cushion the effects of the shock to EU livestock.

The results of this 'stress test' demonstrate the exposure of the EU meat sector to global feed price shocks, due to its high dependency on imported protein feed, and indicate that the mitigation effects from higher EU crop yields and/or improved feed efficiency could partly cushion the impacts. These results demonstrate that addressing the vulnerability of the EU meat sector, but also the EU protein sector in general, would require a more comprehensive food systems approach.

SCENARIO: STRESS-TESTING THE EU FEED SUPPLY CHAIN

Europe's quality of life depends on having a secure and affordable supply of food. Recent global crises have significantly tested EU agricultural resilience: COVID-19 pandemic, the Russian invasion of Ukraine, more frequent and severe weather events driven by climate change, to mention the most obvious examples. These shocks have affected global agricultural markets, with impacts on production and trade, as well as on consumer demand. EU agriculture and the food system demonstrated resilience to these events, albeit high food-price inflation affected food affordability for low-income households. The EU livestock sector felt both direct and indirect economic impacts from these challenges, sustaining high input costs on one side and reduced consumer demand on the other.

The availability and affordability of high-quality feed is of paramount importance for maintaining the competitiveness of the EU livestock sector, as feed represents a large share in input costs of livestock farms. Feed costs vary significantly among EU regions and by farm typology. The EU is a net importer of oilseeds for animal feed, since agro-climatic conditions are either not suitable/optimal in all regions, and/or non-EU countries have substantial comparative advantage in producing them. Moreover, a larger production in the EU would be constrained by land availability issues, and to the detriment of producing crops where the EU has comparative advantage and better profitability for farmers. As such, importing these feed crops to the EU is often more economically profitable than producing them domestically. However, the dependency on imported feed makes the EU livestock sector more vulnerable to events on global markets – caused by climate (e.g. weather-related), market (e.g. price volatility) or geopolitical (e.g. conflicts, trade disruptions) factors.

There are ongoing efforts to make the EU livestock sector more resilient to such external shocks by promoting the domestic production of feed crops (especially oilseed and protein crops), and by improving the efficiency of crops and livestock production. These efforts take place in a context of limiting the environmental and climate impact of the EU agri-food sector.

As the EU is not self-sufficient in oilseeds, this scenario represents a stress test to analyse the resilience of the EU livestock sector against a hypothetical yield shock in 2035, affecting oilseeds production in main producing countries (triggered by an assumed extreme weather event). Technologically driven increases in crop yields and feed efficiency improvements are modelled as potential preparedness measures to mitigate the effects of the shock to the EU livestock sector.

More specifically, the assumed extreme weather shock is simulated by applying an unexpected 15% to 20% yield reduction to the production of soya beans, rapeseed and sunflower in the US, Canada, Brazil, Argentina, Russia, Ukraine and Kazakhstan at the end of the baseline period (year 2035).

The two mitigating pathways to build resilience of the EU livestock sector are as follows:

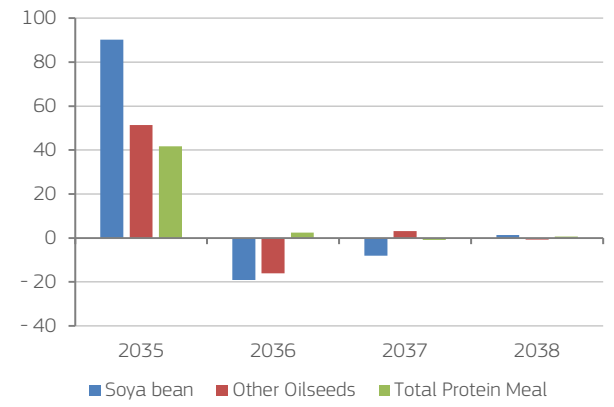
- **Improved yields of EU-grown oilseeds:** the first mitigating measure simulates the assumed adoption of technologies and investments to gradually improve EU sunflower and soya bean yields towards a 20%-40% increase by 2035, to have productivity levels similar to the top three world producers.
- **Increased EU feed efficiency:** the second mitigating measure gradually introduces further productivity gains from innovation for non-ruminants (pork and poultry), with the purpose of gradually increasing feed efficiency up to a level similar to that of the most feed-efficient global producers in 2035. Accordingly, EU farms would be able to produce 2% to 4% more pork and/or poultry meat for the same amount of feed input per kg of meat produced in 2035 compared to the baseline.

A combined scenario is simulated to present the extent to which the gradual yield and feed efficiency improvements can mitigate the assumed extreme weather shock.

Extreme weather scenario impact on global markets

This section illustrates the modelled market impacts caused by the assumed adverse weather event affecting foreign producers of oilseeds in 2035. This scenario results in a reduction of almost 15% in global soya bean production in 2035. Production of other oilseeds such as rapeseed and sunflower seeds is down by 5%, while total protein meal production falls by 7%.

GRAPH 5.1 World oilseeds and protein meal prices in the extreme weather scenario (% difference from the baseline)

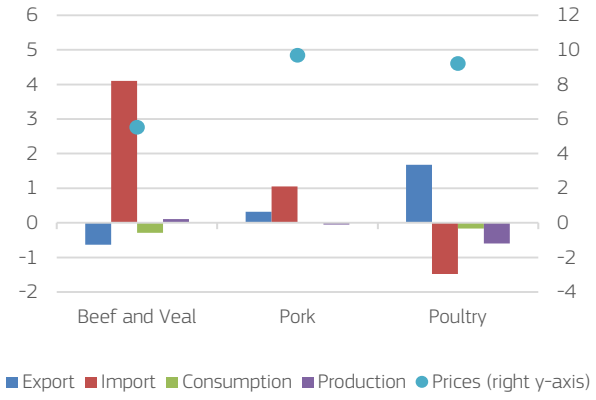


Source: Aglink-Cosimo model.

GRAPH 5.2 EU oilseeds and protein meal market balance in the extreme weather scenario in 2035 (absolute difference in million t and % producer price difference from the baseline)

Source: Aglink-Cosimo model.

GRAPH 5.3 EU meat market balance in the extreme weather scenario in 2035 (% difference from the baseline)



Source: Aglink-Cosimo model.

Extreme weather scenario impact on EU markets

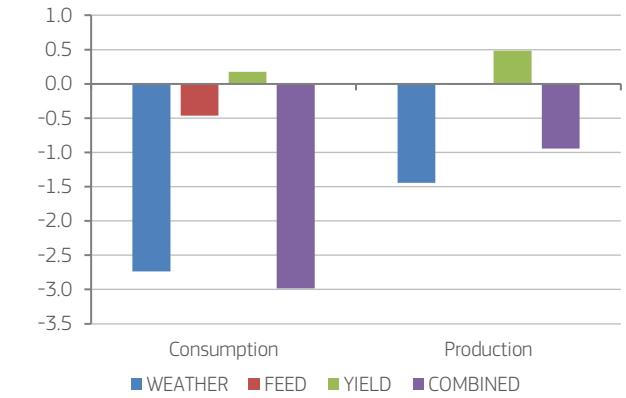
Graph 5.1 shows the significant impact of this disruptive scenario on global commodity prices, presented as percentage differences from the baseline following the shock (in 2035) until 2038. The results indicate an increase of almost 90% of the soya bean producer price in comparison to the baseline in 2035, along with a 40-50% increase in the price of other oilseeds and total protein yield. As a single weather shock is modelled in 2035, in 2036 there is an opposing (rebound) effect on production and prices, converging towards stabilisation in 2038. In a year in which weather conditions result in lower yields, leading to reduced production, prices tend to rise. This provides an incentive for farmers to increase plantings, leading to increased production the following year and drive a subsequent decline in prices.

The impact on production results in trade disruptions, which are expected to have an impact on the availability of protein meals, given that the EU imports a significant volume of these commodities to produce protein meals.

Graph 5.2 and Graph 5.3 illustrate the impacts of the assumed extreme weather scenario on the EU oilseeds, protein meal and meat markets in 2035. The price effects shown in these graphs are expressed as percentage changes from the baseline, while the impacts on volume produced, consumed and traded are expressed as absolute deviations in million tonnes. In this situation, the higher prices of protein feeds result in higher input costs, which in turn lead to higher meat prices. Pork and poultry producer prices increase by approximately 10% in the year 2035 compared to the baseline due to the adverse weather conditions affecting the global oilseeds producers, while beef and veal prices rise by 5%. This suggests that the pork and poultry sectors are more susceptible in the model to fluctuations in the price of protein feed, than the beef and veal sector.

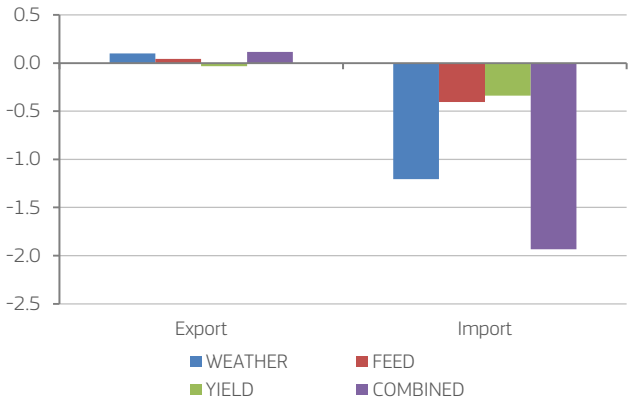
A decline in poultry consumption of approximately 70 000 t is projected by 2035. This represents less than 1% of the total poultry consumption. This is made possible by the fact that food consumption is generally quite inelastic in the model. Therefore, the price transmission effects in the model produce a price increase for consumers, and consequently an impact on consumption, which is lower than the increase in producer prices. For instance, the 10% increase in pork and poultry producers' prices seen in Graph 5.3 translates into a 3% increase in pork consumer prices and a 4% increase in poultry consumer prices.

GRAPH 5.4 EU protein meal production and consumption in the weather extreme, increased feed efficiency, improved yields and combined scenarios (difference from the baseline in million t) -2035



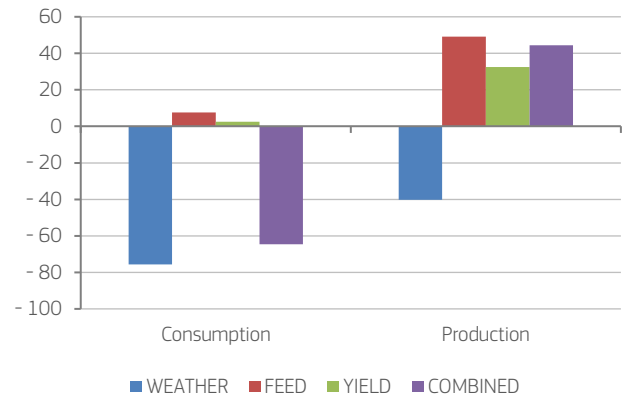
Source: Aglink-Cosimo model.

GRAPH 5.5 EU protein meal exports and imports in the weather extreme, increased feed efficiency, improved yields and combined scenarios. (difference from the baseline in million t) -2035



Source: Aglink-Cosimo model.

GRAPH 5.6 EU meat production and consumption in the weather extreme, increased feed efficiency, improved yields and combined scenarios (difference from the baseline in 1000 t) -2035



Source: Aglink-Cosimo model.

Impacts on EU markets of the weather shock with the combined effect of mitigating measures

This section presents the results of the combined scenario, which includes the weather shock (in 2035) as well as the two mitigating measures assumed for this stress test: gradual increase of EU oilseeds yields and improved feed efficiency over the outlook. Graph 5.4 shows that the combined scenario returns a reduction in feed consumption that is only partially offset by higher yields and to some extent by increased feed efficiency.

Looking at the combined impacts on the EU meat sector (Graph 5.5), the weather shock has the effect of increasing meat imports only to a slight degree compared to the 2035 baseline. However, when the other two mitigating measures are introduced, a reduction in imports is expected as the EU is now able to produce meat more efficiently, which in turn leads to a reduction in import feed demand.

Looking at Graph 5.6, the weather shock results in lower production of meat products compared to the baseline, but the combined effect of the two mitigation measures allows for an increase in meat production within the EU compared to the 2035 baseline, while consumption remains lower than the baseline even after the mitigating measures.

Conclusions

This hypothetical 'what if' scenario presents the impacts of an assumed supply chain disruption on global feed supply - consequently affecting EU meat markets - and assesses the potential to which medium-term improvements in crop yields and feed efficiency can mitigate this impact, to build resilience for the EU meat sector in view of its reliance on imported protein feed.

Results demonstrate the risks stemming from the exposure of the EU meat sector to global feed markets, due to its high dependency on imported protein feed, and reveal that the mitigation effects from higher EU crop-yields and/or improved feed-efficiency could only partly cushion the impacts. Results imply that investment in higher feed efficiency and protein crop yields, while desirable, would not fully improve the resilience of the EU livestock sector.

As such, these results demonstrate that tackling the dependencies of the EU livestock sector, but also the EU protein sector in general, would require a more comprehensive, food systems approach, accounting as well for maintaining food affordable for consumers.

SPECIALISED CROPS

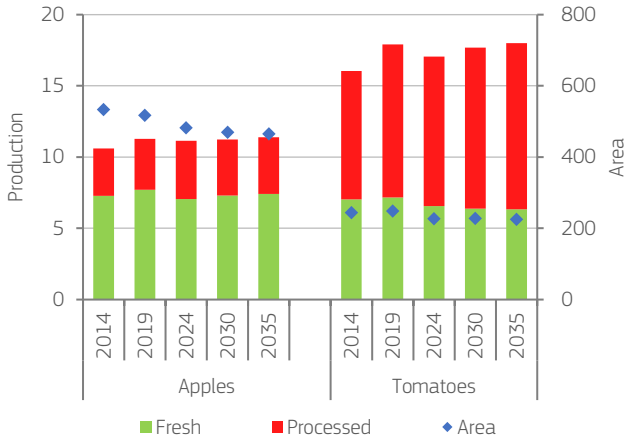
/6

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.

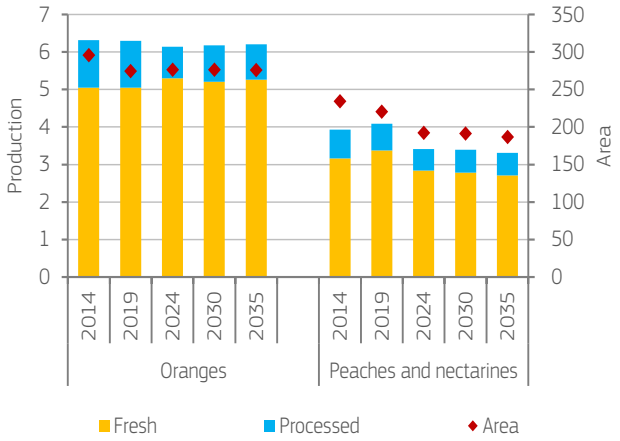
For apples, tomatoes, peaches and nectarines, the two production streams are analysed (for both fresh consumption and processing). For olive oil and table olives, the analyses are conducted for selected EU countries using the AGMEMOD model.

FRUIT AND VEGETABLES

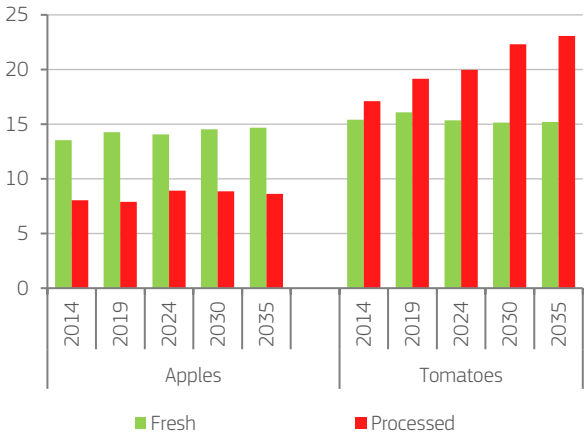
GRAPH 6.1 EU apples and tomatoes production (million t) and area (1 000 ha)



GRAPH 6.2 EU oranges, peaches and nectarines production (million t) and area (1 000 ha)



GRAPH 6.3 Consumption per capita of apples and tomatoes (kg)



EU production of fruit and vegetables for fresh consumption: different evolution trends

By 2035, the production of both fresh tomatoes, and peaches and nectarines for fresh consumption is projected to decline. The decrease in tomato production is mainly driven by the drop of winter production and a shift to small-sized tomatoes which have lower volume but higher value added. For peaches and nectarines, production is expected to drop due to the continuing area decline for both fruit destined for fresh consumption and for processing.

Total usable EU apple production is expected to remain stable in the outlook period at 11.4 million t. This is the result of decreasing area under cultivation as well as increasing yields, driven by both the introduction of new, high-yielding varieties, and improved agronomic management. By 2035, it is projected that 7.4 million t of apples will be consumed fresh, while 4 million t could be used for processing.

The production of tomatoes for processing is expected to increase to around 11.6 million t, driven by higher demand for processed products. Production is shifting from highly concentrated products, such as tomato paste, to less concentrated such as canned tomatoes, passata, tomato sauces and to higher value-added products such as organic products.

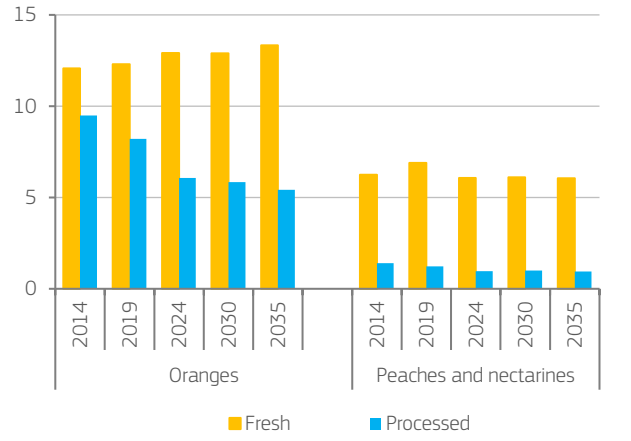
The production of oranges is also projected to increase slightly, driven by increase in production for fresh consumption.

EU consumption projected to increase for fresh fruit and processed tomatoes

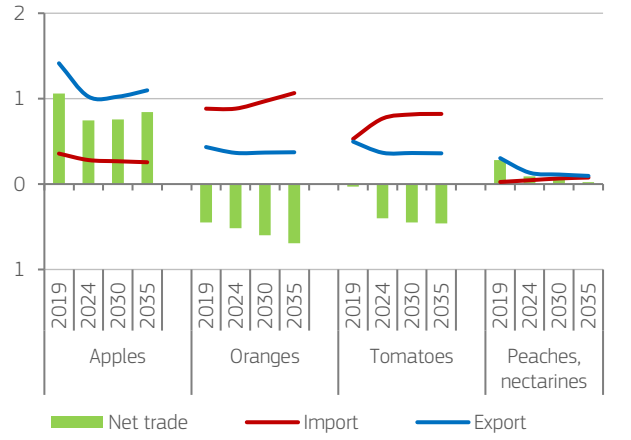
By 2035, the EU consumption of fresh fruit and vegetables is expected to be stable or increase, compared to the trimmed average 2020-2024, driven by increasing consumer awareness for the benefits of diets rich in fruit and vegetables, as well as public promotion initiatives.

However, there are significant differences across sectors and EU countries. By 2035, the EU consumption of fresh oranges is expected to increase to 13.3 kg/capita (+0.3% per year), driven by the positive health image of oranges. Over the same projection period, the EU consumption of fresh apples is expected to also increase to 14.7 kg/capita (+0.4% per year) driven by new apple varieties that better reflect consumers' preferences. By contrast, the consumption of fresh peaches and nectarines is projected to be relatively stable at around 6.1 kg per capita.

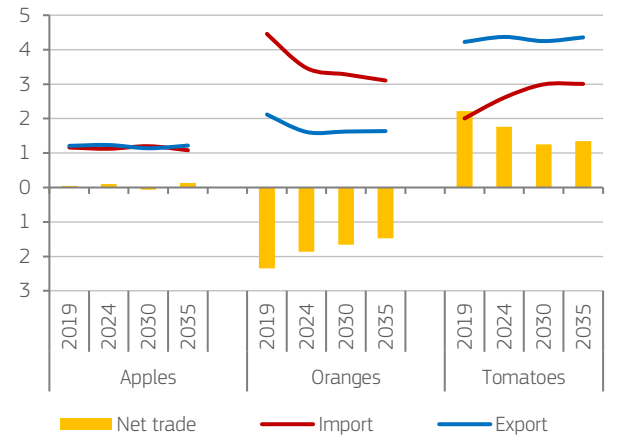
GRAPH 6.4 Consumption per capita of oranges, peaches and nectarines (kg)



GRAPH 6.5 EU trade of fresh fruit and vegetables (million t)



GRAPH 6.6 EU trade of processed fruit and vegetables (million t)



By 2035, the per capita consumption of fresh tomatoes is expected to remain stable at 15.2 kg, with consumption of average sized tomatoes pushing the consumption down while more 'snacking' of tomatoes is expected to push demand up.

In contrast to the increasing consumption of fresh fruit and vegetables, the EU consumption of processed fruit is expected to continue its decline, due to lower interest in juices, which take up the largest part of processed fruit. Per capita consumption of processed oranges (mainly orange juice) is projected to be impacted the most by the end of the projection period (-1% per year). Consumption of processed apples (mainly juice), peaches and nectarines (mainly canned peaches) is projected to decline by 0.3% and 0.2% per year, respectively.

By contrast, EU consumption of processed tomatoes is projected to increase by 1.2% per year to over 23 kg per capita by 2035. This is due to increasing demand for processed food, where products like tomato paste and sauces have a significant share of the market.

EU imports of fresh fruit and vegetables to increase and exports to decline – except for apples

EU exports of fresh apples are expected to increase by 0.6% per year to 1.1 million t in 2035, driven by new varieties that are better focused on the tastes of global consumers. By contrast, exports of fresh tomatoes, and peaches and nectarines are expected to decline (-0.2% and -2.9% per year, respectively) while exports of oranges are projected to be stable.

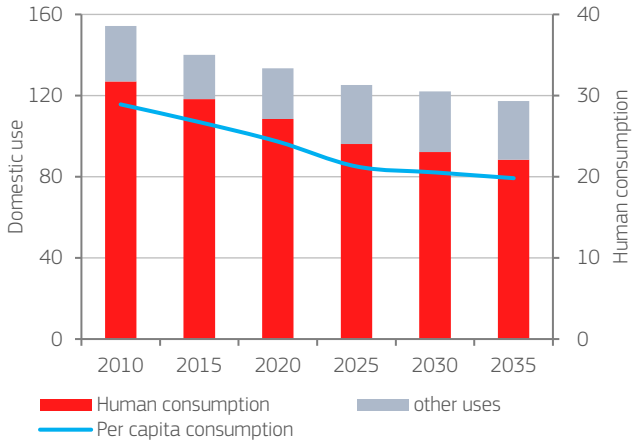
At the same time, EU imports of fresh apples are expected to decline (-0.9% per year compared to the trimmed average 2020-2024). This decline is driven by the increased domestic availability of new varieties of high quality apples.

By contrast, EU imports of other fresh fruit and vegetables are projected to increase. For example, fresh tomatoes are expected to continue to increase by 0.6% per year, with Morocco expected to remain the main supplier. Imports of fresh oranges are expected to grow by 1.5% per year (mainly in the off season), and peaches and nectarines by 5% per year (albeit from a low base).

EU exports of processed tomatoes are expected to remain relatively stable, driven by strong global demand, while imports are projected to increase by 1.3% per year due to the production increase of the main EU competitors. Exports of processed oranges, and peaches and nectarines are also expected to grow by 2.3% and 1.4% per year, respectively.

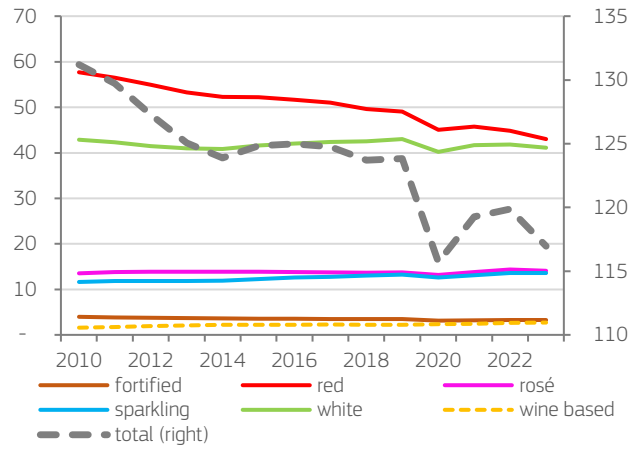
WINE

GRAPH 6.7 EU wine domestic use (million hl) and human per capita consumption (l)



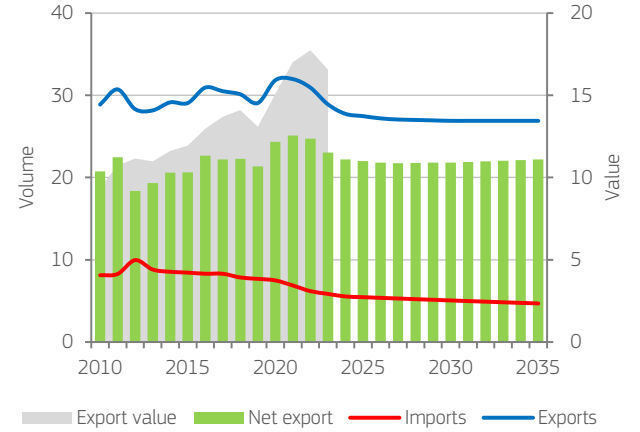
Source: DG Agriculture and Rural Development, based on Eurostat and MS notifications.

GRAPH 6.8 EU wine sales by wine colour (million hl)



Source: Euromonitor International, Alcoholic Drinks 2024 industry edition.

GRAPH 6.9 EU wine trade in volume (million hl) and value (billion EUR)



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

EU wine consumption to decline further

EU wine consumption continues to decline as, in general, younger generations drink less alcohol and tend to prefer other beverages. The main driver for the reduction is health concerns from both consumers and governments. Other contributing factors are shifting habits on drinking occasions and demographic changes. Shifts differ from country to country, with significant consumption decreases in some of the main wine-consuming countries (e.g. France, Germany), while consumption has risen in countries where wine consumption is less traditional (e.g. Czechia, Poland and Sweden).

Along with the shrinking wine consumption, there is a clear shift in consumer patterns, with a general decline in red wines, and a rise for fresher and easier-to-drink wines, particularly sparkling wines. There are increasing sales for wine-based drinks, including non-alcoholic wines, but volumes remain small.

EU wine production to follow consumption trend

Human wine consumption in the EU is expected to decline by around 1% per year between now and 2035, to around 19.8 l per capita (from the average 22.3 l in 2020-2024), while 'other uses' could stay relatively stable at around 30 million hl (e.g. distillation or transformation into processed products).

Human consumption is the largest outlet for the EU wine sector (66% in 2020-2024), whereas 20% is exported. Given that some of the main EU export markets are starting to experience similar consumption trends as the main EU wine producers, the consumption decline is likely to lead to a decrease in EU wine production (0.7% per year to 140 million hl by 2035). Assuming stable weather conditions, the reduction will be driven by area contraction.

Shrinking EU wine trade

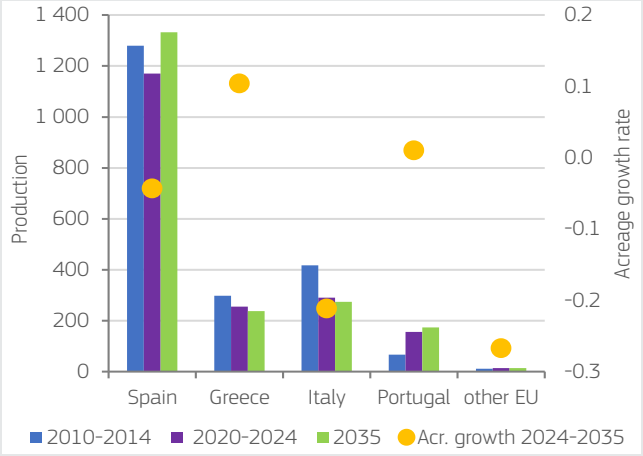
After the fall in the COVID-19 year 2020, EU wine exports rebounded to record levels in the campaigns of 2020/21 and 2021/22. After that, due to the shifting consumption trends and overstock in some main export destinations (e.g. US), export levels have been declining and are expected to continue decreasing.

Due to ample supply in the EU, imports are expected to continue declining during the projection period.

Overall, exports would decrease by 1.2% per year by the end of the projection period, and imports by 2.7%.

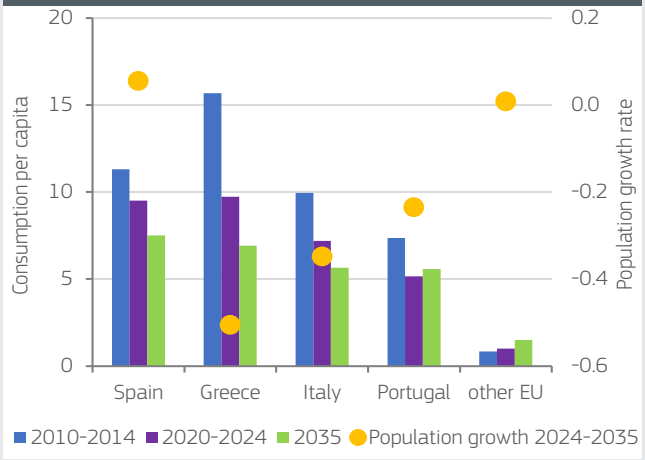
SPOTLIGHT ON OLIVE OIL

GRAPH 6.10 Olive oil production (1 000 t) and annual changes in acreage of olives for oil (%)



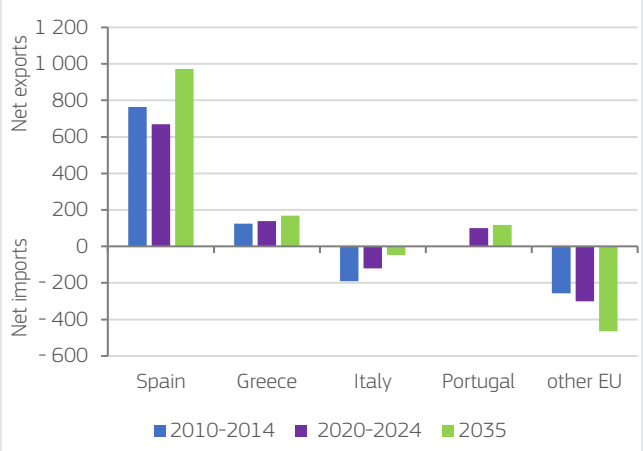
Source: AGMEMOD simulation.

GRAPH 6.11 Olive oil consumption per capita (kg) and annual population growth (%)



Source: AGMEMOD simulation.

GRAPH 6.12 Olive oil net trade developments (1 000 t)



Source: AGMEMOD simulation.

Divergent production developments across the EU in a challenging context

The olive sector has faced two consecutive campaigns with low production in 2022/23 and 2023/24, especially affecting Iberian olive growers. The future profitability of the EU olive oil sector depends on the successful transformation of productive systems, i.e. from extensive orchards to intensive and highly mechanised plantations. For some time now, the sector has been facing challenges such as unusual climatic conditions and water scarcity. Investments are already taking place in Spain and Portugal, including planting olive groves in non-traditional areas, however some time is required to achieve its full potential. Annual average production increases of around 1.2% and 1% are expected for Spain and Portugal, reflecting yield increases of 0.7% and 1.4% per year respectively. The impacts of diseases (i.e. *Xylella fastidiosa*, *Euphyllura olivine*, etc.), as well as the lack of labour and increasing costs, are additional challenges that olive growers might face in the coming years.

Declining consumption trend in selected EU countries continues

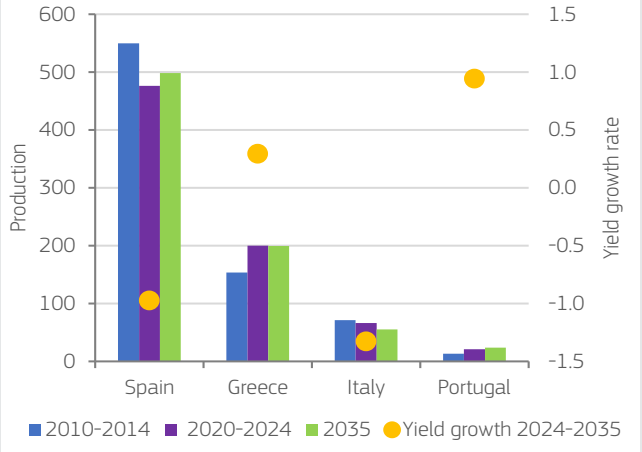
The declining trend observed in olive oil apparent consumption in recent years is expected to continue, reflecting the new consumption patterns of younger generations. High prices and the potential substitution with other vegetable oils, mainly in countries lacking a strong tradition in olive oil consumption, add to demand uncertainty. More specifically, declines of around 2-3 % per year are projected for Spain, Italy and Greece. Following availability increases, per capita consumption is expected to increase in Portugal, reaching 5.6 kg by 2035. Starting from a low level, per capita consumption in the rest of EU is expected to increase annually by 3.7% over the projection period.

Trade position expected to remain as in the past

Increases in net exports are expected in Spain, Portugal and Greece, when comparing 2035 to the period 2020-2024. This outcome reflects both the changes in consumption and production developments. Specifically, over the period 2024-2035, net exports are expected to increase by 3.5%, 1.8% and 1.5% per year in Spain, Greece and Portugal respectively, while in Italy net imports are projected to decline annually by 8.2%, also reflecting lower per capita consumption levels. By contrast, in the rest of the EU net imports are expected to grow annually by 4%. The EU is expected to retain its exporting position, with net exports reaching almost 750 000 t by 2035. In recent years, Tunisia has increased exports to the EU, benefiting from existing trade agreements. Product differentiation could help to curb the impact of increasing price competition in the global market.

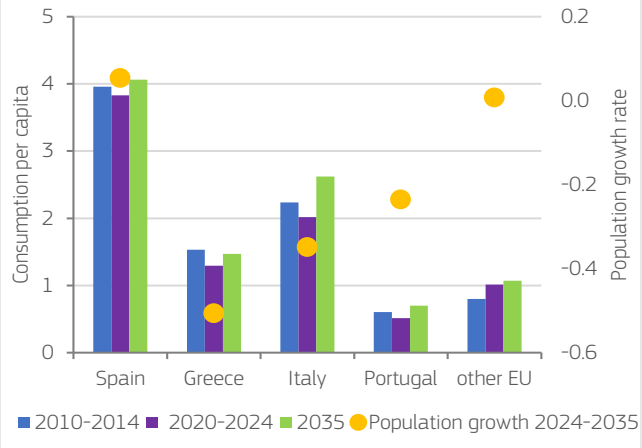
SPOTLIGHT ON TABLE OLIVES

GRAPH 6.13 Production of table olives (1 000 t) and changes in annual yield (%)



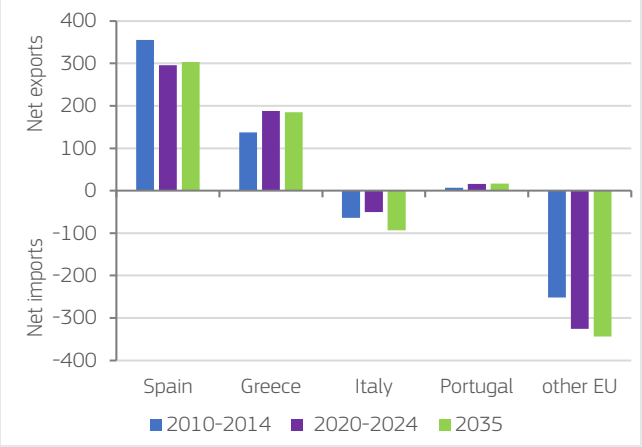
Source: AGMEMOD simulation. Note: Production in other EU countries is not covered by the current version of the AGMEMOD model.

GRAPH 6.14 Table olives consumption per capita (kg) and annual population growth (%)



Source: AGMEMOD simulation.

GRAPH 6.15 Table olives net trade developments (1 000 t)



Source: AGMEMOD simulation.

Climatic conditions pose challenging context to EU table olive growers

The EU production of table olives is expected to face similar challenges as olive oil production, mainly climatic conditions and water shortages. Investments to modernise olive orchards are key to ensuring the economic profitability of the sector in the coming decades. In addition, proper water management supported by a well-designed water policy could favour yield increases, with Portugal being a good example. Looking at the expected yield and production developments, a mixed picture arises. Compared to 2020-2024, yearly production increases of 0.4% and 1.1% are expected in Spain and Portugal. In Italy and Greece, a yearly decline of around 0.3% in cultivated areas results in a pessimistic prospect for production. In Italy, this trend is reinforced by yearly yield declines of around 1.3%. By 2035, production could reach almost 200 000 t and 56 000 t in Greece and Italy respectively.

Increasing EU consumption of table olives

Compared to 2020-2024, EU per capita consumption of table olives is expected to slightly increase in the coming decade. In Spain, annual consumption increases of around 0.5% are expected, reaching per capita consumption levels of around 4.1 kg by 2035. Stronger annual increases are expected in Greece, Italy and Portugal (with yearly increases in the range of 1.2-2.8 %), as well as in the rest of the EU, although at a slower pace (0.5% per year). The beneficial properties of olive consumption and increasing health concerns regarding dietary habits support this expansion.

EU expected to retain its exporting position

Over the period 2024-2035, positive developments for net exports are expected mainly in Spain and Portugal, with annual growth average rates of around 0.2-0.3 %. Greece is also expected to remain a net exporter of table olives, although a slight decline is projected (-0.1% per year). In Italy, imports of table olives are expected to increase, with net imports at around 94 000 t by 2035. Looking at the rest of the EU, the increasing trend of net imports is expected to continue in the coming decade, although at a slower pace. The EU is expected to remain a net exporter, although it is also a key importer at the global level. Potential market uncertainties are labour costs or the implementation of trade barriers in third countries.

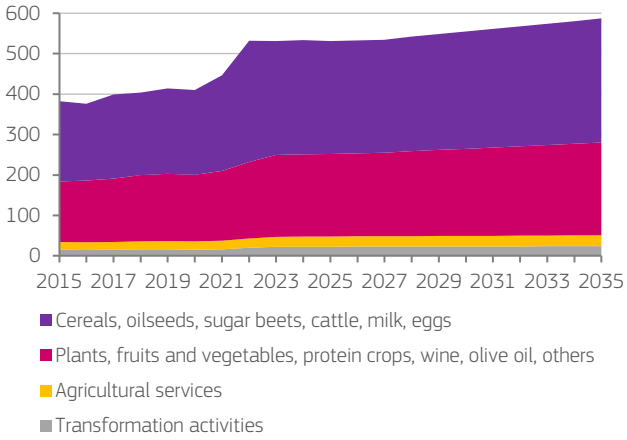
AGRICULTURAL INCOME AND LABOUR

/7

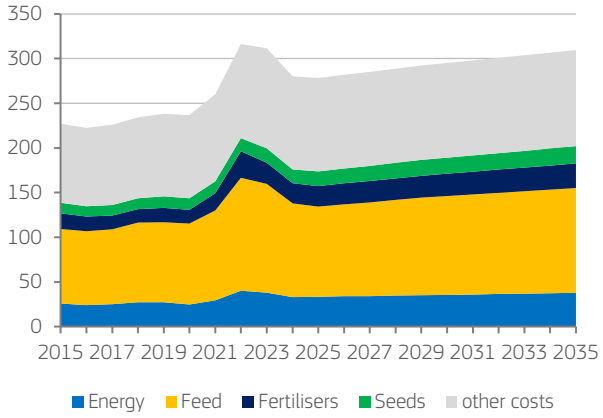
This chapter analyses how changes in agricultural markets over the next decade will affect the value of agricultural production, and potentially also farmers' income. The analysis shows one of possible developments, based on several assumptions – including about agricultural sectors not explicitly covered by this outlook report – using the data from Eurostat's Economic Accounts for Agriculture. It also includes projections on labour trends, driven by the extrapolation on past farm structure changes in the outlook period and deriving conclusions on their implications in terms of agricultural employment.

FARM INCOME

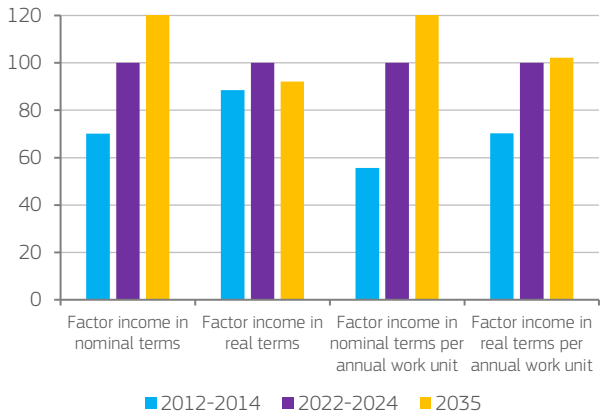
GRAPH 7.1 Value of EU agricultural output (billion EUR)



GRAPH 7.2 Intermediate costs per category (billion EUR)



GRAPH 7.3 Farm income at nominal and real 2010 terms – total and per annual work unit (average 2022-2024 = 100)



Value of agricultural output on upward pathway

Putting together the production and price developments from the sectoral projections of previous chapters, the resulting value of EU agricultural production in nominal terms is projected to reach EUR 586 billion in 2035, growing at a rate of 1% per year after 2025. Agricultural commodities such as cereals, oilseeds, sugar beet, milk, eggs and animals will continue to account for 52% of the output by 2035. Other products such as forage plants, fruit and vegetables, protein crops, potatoes, wine and olive oil are set to account for 39% of agricultural production by 2035. Processing activities performed within farms (i.e. transformation), as well as agricultural services such as agritourism and rural recreation are projected to account for 4% and 5% respectively, thus maintaining a relatively marginal share.

Input costs to stabilise at higher value than historical levels

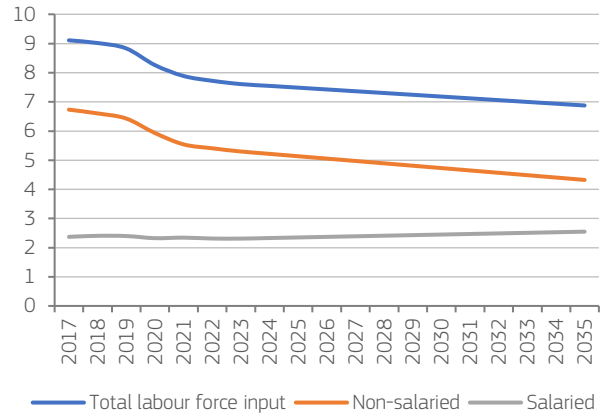
In the medium term, intermediate input costs such as energy, seeds, feed and fertilisers are projected to stabilise at a higher level than pre-2021 levels. Total agricultural costs are expected to increase by 1.1% per year after 2025. Despite the expected reduction of numbers of animals, feed will remain the largest cost element, amounting to 38% of the total. Other costs, including plant protection products, advisory services, veterinary expenses, maintenance of buildings are projected to account for 35% by 2035. Finally, the shares of energy and fertiliser costs are expected to grow to 12% and 9% respectively.

Real income per farmer will be close to average levels

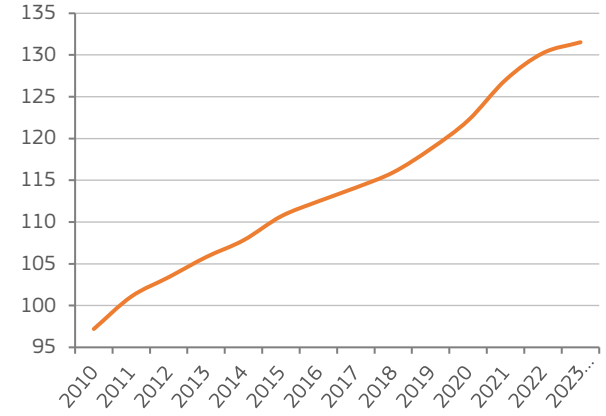
By deducting from the agricultural output, the intermediate costs, depreciation and taxes on production, and adding subsidies on production, the result is factor income, an indicator of agricultural income. After a stabilisation period between 2024 and 2027, factor income in nominal terms is expected to increase from 2028 onwards at a rate of 1.4% per year until 2035. However, in real terms (factoring in inflation), the resulting value would decrease at an average annual rate of 0.6% from 2028 to 2035 as inflation creates a gap between nominal and real monetary values. The picture is however more nuanced when looking at factor income per annual work unit (AWU), as a measure of income per agricultural worker, considering above-mentioned projections. In this case, nominal factor income per AWU increases at a faster rate from 2028 to 2035 (+2.2%) while in real 2010 terms it increases at a lower rate (+0.2%) over the same period.

AGRICULTURAL LABOUR

GRAPH 7.4 Projected annual work units in EU agricultural sector by labour type (millions)



GRAPH 7.5 Evolution of labour productivity (agricultural output per annual work unit) – index 2010 =100



Source: Analytical Brief N°5: Measuring agricultural productivity: Insights into yields and total factor productivity in the EU. DG Agriculture and Rural Development, 2024 (link)

Agricultural labour projected to decline, with an increase of the relative share of salaried workforce

The labour trends consist of an extrapolation of the historical trend about the number of farms in the EU by economic size (derived from Eurostat Integrated Farm Surveys) as smaller farms are significantly reduced in number while the number of bigger farms slightly increase over time. Larger farms tend to employ more people than smaller farms and are more likely to employ salaried workforce rather than non-salaried workforce (unpaid family workers). Combining data from the Farm Accounting Data Network in the extrapolation, it is projected that the EU agricultural labour force (measured in annual work units) in 2035 could amount to 6.9 million AWU, compared to 7.6 million AWU in 2023, of which 37% would be salaried and 63% non-salaried. The respective shares in 2023 were 30% and 70%.

Risks of labour shortages in agriculture on the horizon

For this outlook exercise, it is assumed that through modernisation and improvements in labour productivity, the EU farming sector could still maintain its production capacity despite the downward trend in labour. Improvements in labour productivity in EU agriculture have been very significant in the last decade, also driven by investments in better machinery and equipment (Graph 7.5). But as farmers grow older and agricultural innovations require more sophisticated skills to reap the benefits of digitalisation and automation, labour shortages in agriculture could become more significant in the medium term. Ensuring generational renewal is a key challenge for the future of EU agriculture: Average age of farmers is 57 years, and only 12% of farmers are under 40 in 2020, including just 2.5% women. This outlook does not model risks of labour shortages in its market trends, but the mix of skills in agriculture is changing, with a trend towards skill upgrading. While technological investment could replace manual labour to a certain extent, future EU agriculture would still need skilled manual workers for operating farms, as well as skilled farm managers to deploy advanced technological solutions. Along with labour competition with other sectors of the EU economy, these trends can amplify replacement challenges when farmers will retire.

ENVIRONMENTAL ASPECTS

/8

This chapter looks at the climate and environmental implications of the EU agricultural outlook in 2035, compared to a reference year 2017. The analysis employs the CAPRI model, with the baseline aligned to the 2023 EU Agricultural Outlook. This baseline includes the full range of payments under the CAP after 2023, and reflects projected changes in area, livestock numbers, and production, alongside a limited set of farming practices.

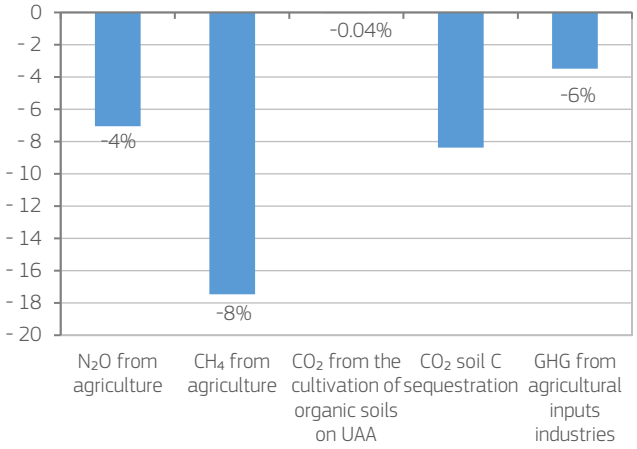
Overall, the baseline for 2035, relative to 2017, shows an improvement across all environmental and climate indicators included in the analysis, with a projected reduction in GHG and ammonia emissions, and nitrogen surplus. Enhanced soil management farming practices contribute significantly to increased carbon sequestration and reduced soil erosion.

Other important environmental aspects, such as biodiversity are missing in the analysis. Moreover, only a limited subset of farming practices supported in the CSPs could be directly linked to environmental indicators. Therefore, the impacts of many important farming practices, such as organic farming, landscape features (except buffer strips), grassland management, and animal welfare practices, are not captured in this modelling exercise.

GREENHOUSE GAS EMISSIONS ANALYSIS

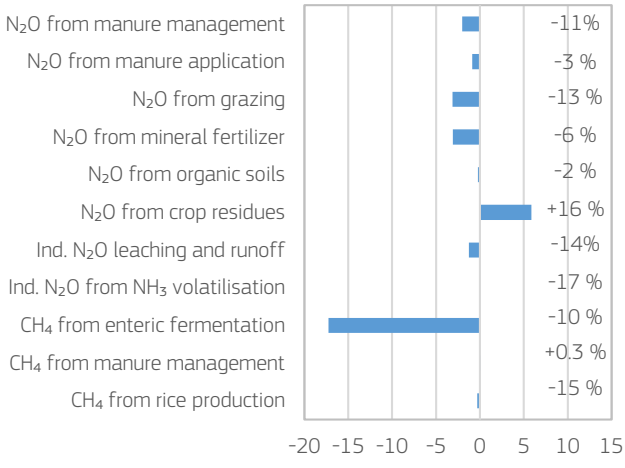
This chapter illustrates the climate and environmental implications of the EU Agricultural Outlook (baseline) in 2035, compared to the reference year 2017. The baseline is run with the CAPRI model calibrated to the 2023 EU Agricultural Outlook. In particular, the baseline includes the full payments for the CAP 2023-2027 and reflects changes in area, livestock numbers, and production, as well as a limited set of farming practices.

GRAPH 8.1 GHG emissions change 2017-2035 (absolute change in million t CO_2 eq and percentage change)



Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

GRAPH 8.2 CH_4 and N_2O emissions detailed change 2017-2035 by emissions source (absolute change in million t CO_2 eq and percentage change)



Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

Methodology

Due to the unavailability of farming practices data in the model for the 2017 base year, a direct comparison with the projection year 2035 was not possible. Therefore, a two-step approach was adopted. Firstly, the impacts of the changes in crop areas, animal numbers and production were assessed relative to 2017. Secondly, the impacts of selected farming practices were analysed. Implementation levels of farming practices have been assumed to fit the expected implementation levels of Planned Unit Amounts and Interventions reported in the CAP Strategic Plans (CSPs). These practices were compared to default implementation levels, which are either set to zero, based on statistics, or derived from legal requirements. The zero-implementation level was used for farming practices such as better timing for fertiliser and manure application, nitrification inhibitors, fallowing and rewetting of organic soils, peatland restoration, and variable rate technology. A default implementation level derived from statistics was applied to no-tillage, conservation tillage and winter cover crops. For buffer strips, the level applied was aligned to the minimum requirements established in the GAECs outside Nitrate Vulnerable Zones, and in the Nitrates Directive for Nitrate Vulnerable Zones. For high- and low-efficient ammonia (NH_3) application, reference adoption levels come from the GAINS model database (obtained from expert judgement). The set of modelled farming practices accounts for less than 10% of the total payments under eco-schemes and agri-environment-climate measures, the rest being included in the model as a lump-sum payment.

GHG emissions projected to decrease

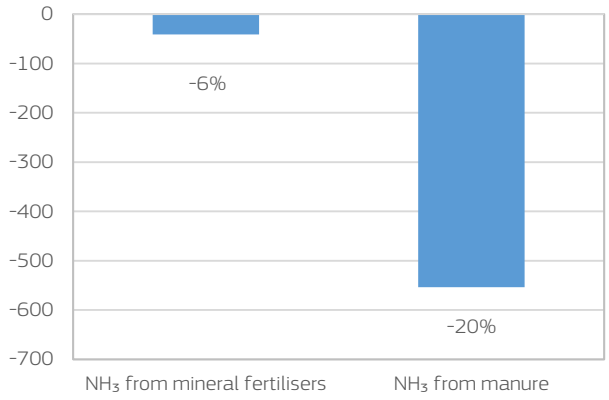
Nitrous oxide (N_2O) emissions from agriculture decrease by 4% and methane (CH_4) emissions by 8%. CH_4 emissions from enteric fermentation (ruminant digestion) decrease by 10%, which is the largest change among individual emission categories. The main driver for these changes is the projected decrease in animal numbers in 2035 compared to 2017, with almost 12% in dairy cattle, 5% in other cattle and 6% in pigs, despite a 5% increase in poultry. Manure excretion decreases by 11%. Other drivers include a decline of 2.6% in utilised agricultural area (UAA) and a decrease in the use of mineral fertilisers of 6.7%. This also has an impact on GHG emissions from fertiliser production, which decline by 6%. There is a significant increase in carbon sequestration exceeding 8 million t CO_2 per year (shown in the graph as a reduction of CO_2 emissions). A large part of this (68%) is due to winter cover crops and buffer strips area. There is also a minor effect on CO_2 from the cultivation of organic soils due to 7 400 ha of peatland restoration in Germany, the only intervention on peatland restoration clearly indicated in CSPs.

AMMONIA EMISSIONS ANALYSIS

Ammonia emissions also projected to decrease

The baseline returns a total decrease of almost 600 000 t in ammonia (NH_3) emissions compared to the base year 2017, corresponding to a reduction of approximately 17%. Most of the decrease can be attributed to emissions from manure, which decline by 20%, while NH_3 from mineral fertilisers decrease by 6%.

GRAPH 8.3 Total ammonia emissions change 2017-2035 (absolute change in 1000 t NH_3 and percentage change)

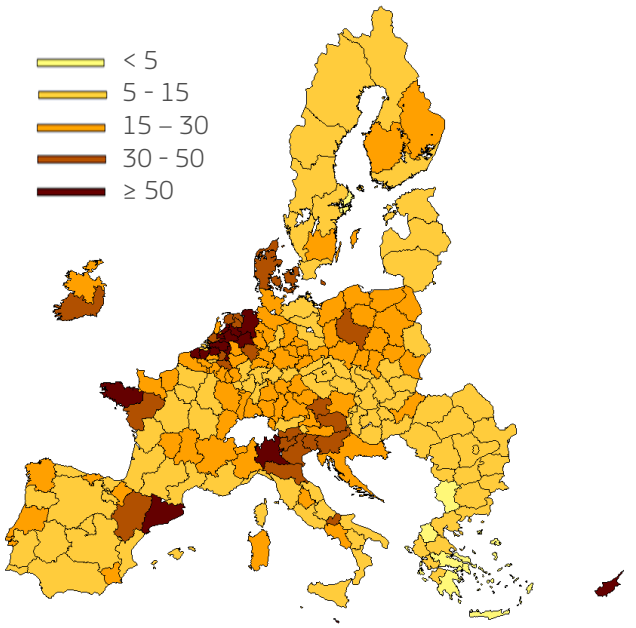


Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

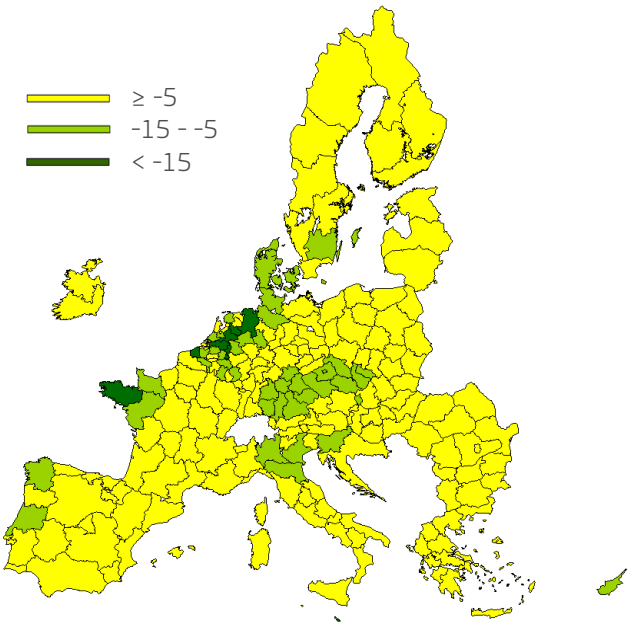
As like GHG emissions, the main drivers for these changes are the reductions in animal numbers and in hectares of UAA, and in the lower use of mineral fertilisers. Farming practices instead lead to contrasting effects on NH_3 emissions. Some of them decrease NH_3 emissions like high- and low-efficient ammonia application techniques, while other techniques targeting N_2O emissions tend to increase NH_3 emissions like better timing of fertiliser application and nitrification inhibitors.

The projected average emissions per hectare of UAA in the EU amount to 17 kg/ha NH_3 in 2035 (-3 kg/ha compared to 2017), with important differences between regions. Hotspots with more than 50 kg per hectare are primarily regions with high animal production. The projected regional absolute changes show reductions in numerous regions across the EU, with highest reductions in hotspots in north-western Europe (more than 15 kg/ha reductions).

GRAPH 8.4 Ammonia emissions in 2035 (kg NH_3/ha)



GRAPH 8.5 Changes in ammonia emissions 2017-2035 (kg NH_3/ha)



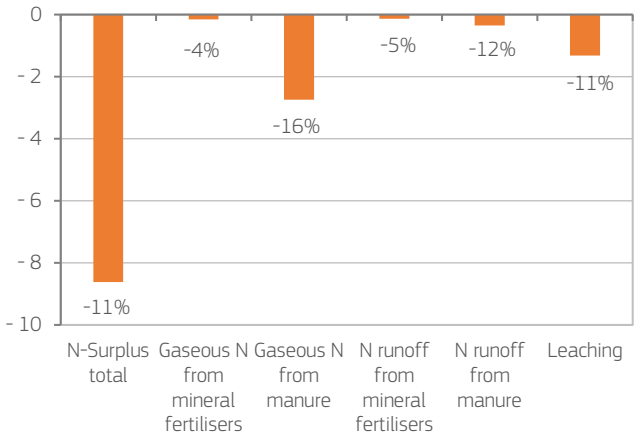
Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

NITROGEN SURPLUS, LEACHING AND RUNOFF OVERVIEW

Nitrogen surplus projected to decrease as well, but with different regional patterns

Nitrogen (N) surplus is calculated as the difference between N inputs to the land (manure, mineral fertilisers, atmospheric deposition, and biological fixation) and outputs (exports of crop products without crop residues returned to the soil). Over the projection period, N surplus is reduced by 14% and N surplus per hectare by 11%. A decline in gaseous N losses (N_2O, NH_3 and NO_x) from manure (-18%, -16% per hectare) and N run-off from manure (-14%, -12% per hectare) is also projected, while changes from mineral fertilisers are smaller (-6% and -8% respectively, -4% and -5% per hectare). Leaching is reduced by 16% (-11% per hectare).

GRAPH 8.6 Change in N surplus per hectare of UAA 2017-2035 (absolute change in kg N/ha and percentage change)

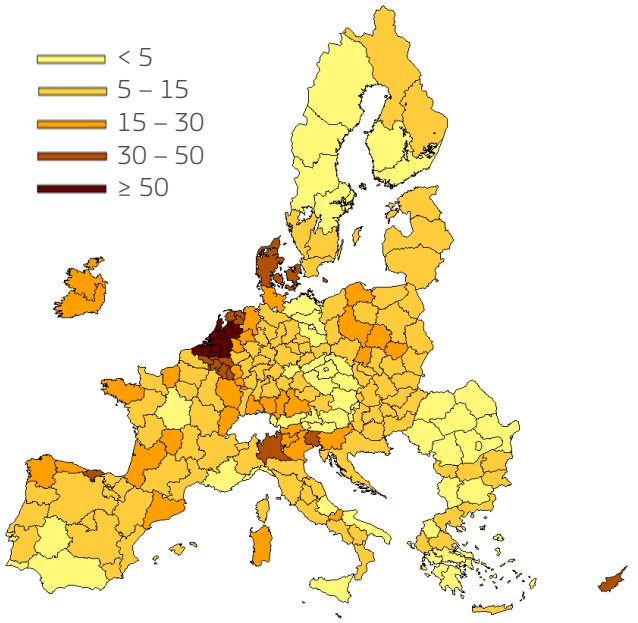


Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023)

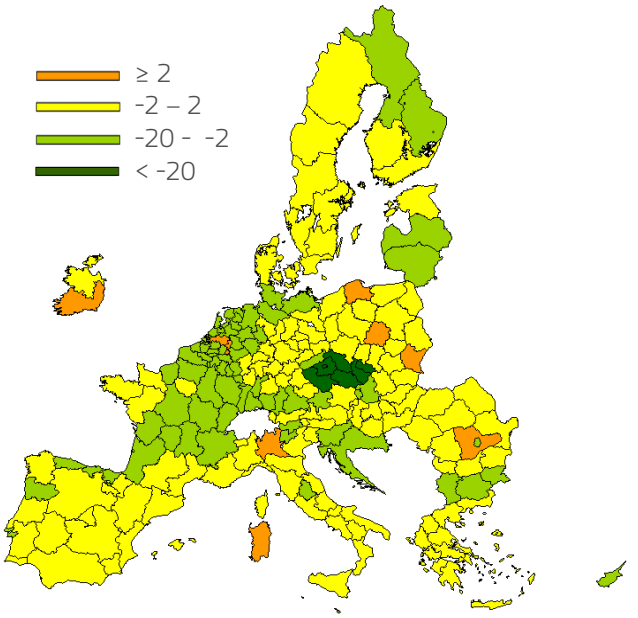
These changes are driven by the decrease in manure excretion due to lower livestock numbers and less use of mineral fertilisers. The adoption of farming practices lead only to minor effects: winter cover and buffer strips decrease N leaching and runoff, but winter cover in some cases can also lead to a higher N surplus if nitrogen fixing crops are used, and other fertilisation is not reduced by the same amount. This is actually happening in the modelled baseline as it is assumed that 50% of cover crops are leguminous crops, and the additional nutrient provision from winter cover does not fully translate into a reduction of mineral fertiliser use.

Graph 8.7 and Graph 8.8 show the regional distribution of N losses to water (which is the sum of leaching to groundwater and surface runoff) and amounts to 12 kg N/ha at the EU average. The most important hotspots in 2035 are still around the Netherlands and Belgium, with values of more than 50 kg N/ha. The average absolute per hectare change in the EU is -2 kg N/ha (-12%). The highest reductions of more than 20 kg N/ha are projected for Czechia (mostly due to a strong decrease in mineral fertiliser use and a shift from crops to permanent grassland and fallow land), followed by decreases of more than 15 kg N/ha in hotspots regions.

GRAPH 8.7 N leaching and runoff in 2035 (kg N/ha)



GRAPH 8.8 Change in N leaching and runoff 2017-2035 (kg N/ha)



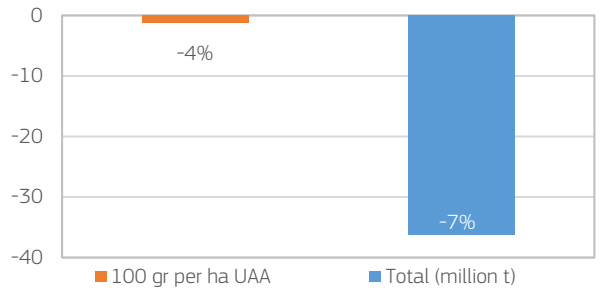
Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023).

SOIL EROSION

Soil erosion improvements across southern and eastern European regions

The CAPRI model projects the average potential soil erosion by water to decrease by 7%, which corresponds to a total amount of 36 million t of soil. The decrease per hectare amounts to 4%, due to the decrease in UAA. The main drivers for the decline in soil erosion, apart from the decline in UAA, are soil management practices, specifically tillage practices, winter cover crops and buffer strips. The type of crop has also an effect on soil erosion, with land uses covering the soil for several years providing the highest protection against erosion (e.g. permanent grasslands, temporary grasslands and fodder crops). Hotspots of soil erosion are mainly located in Mediterranean regions. According to the results shown in Graph 8.11, the most visible improvements are observed in southern and eastern European regions, except for a few regions where soil erosion increases due to changes in the crop distribution (e.g. increase in maize, decrease in temporary grasslands and decrease in winter cereals).

GRAPH 8.9 Soil erosion change 2017-2035 (absolute and percentage changes)

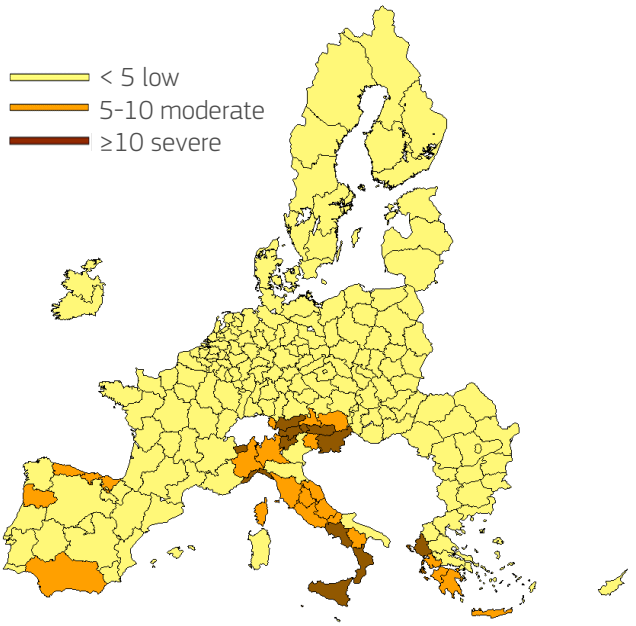


Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023) – Data for Croatia missing.

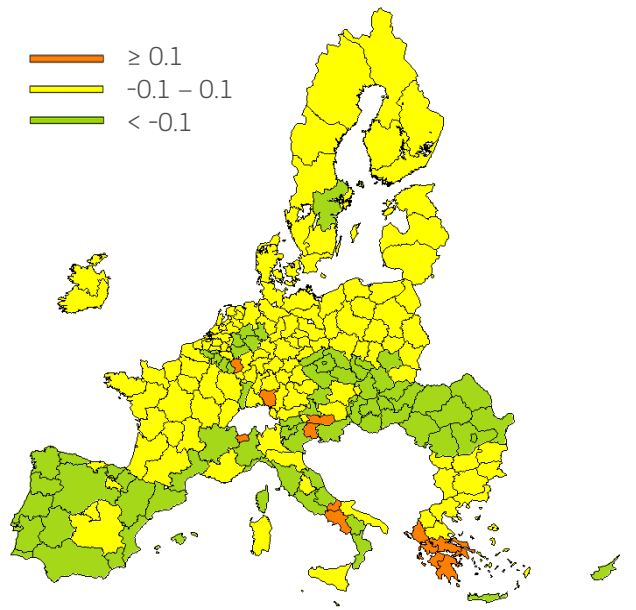
Concluding remarks and caveats of the analysis

Overall, the 2035 CAPRI baseline compared to the 2017 reference year, shows an improvement in all the environmental and climate indicators analysed. There is a projected decrease in GHG emissions, NH_3 emissions, and N surplus. The main drivers for these changes include declines in animal numbers and reduction of utilised agricultural area over time and the adoption of farming practices by EU farmers, such as more efficient application of fertilisers and enhancing soil management, contributing significantly to increased carbon sequestration and reduced soil erosion. Many of these practices are driven and supported through the national strategic plans under the Common Agricultural Policy. However, other important environmental aspects such as biodiversity, animal welfare, etc., are not included in the analysis. Moreover, only a limited number of farming practices supported in the CSPs could be linked to environmental indicators, accounting for less than 10% of total payments under eco-schemes and environmental and climate measures. Therefore, the effects of many other important farming practices, such as organic farming, landscape features (except buffer strips), grassland management, animal welfare practices, and agroforestry, are missing in the modelling exercise. Their contribution to carbon sequestration, to the decrease of leaching, and runoff might be considerable, while the impact on NH_3 and GHG emissions abatement overall is likely to be limited.

GRAPH 8.10 Soil erosion in 2035 (t of soil per hectare)



GRAPH 8.11 Soil erosion change 2017-2035 (t of soil per hectare)



Source: JRC, based on the 2024 CAPRI MTO baseline [2035; MTO 2023], EC (2023) – Data for Croatia missing

ANNEX /9

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 2024 (2022-2024) in most balances.

In the case of specialised crops, Olympic averages are used instead for the period 2020-2024 to take into account stronger inter-annual variations in production.

MARKET OUTLOOK DATA

TABLE 9.1 Baseline assumptions on key macroeconomic variables

	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Population growth (EU)	0.3%	0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.2%	-0.2%	-0.2%
Real GDP growth (EU)	1.6%	1.5%	1.6%	1.6%	1.6%	1.6%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Inflation (Consumer Price Index) EU-14	5.6%	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	9.7%	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)	1.07	1.10	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)	90	84	87	88	90	92	94	97	99	101	103	106

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

TABLE 9.2 EU agricultural area (million ha)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Cereals	**50.3**	**49.6**	**49.7**	**49.7**	**49.7**	**49.7**	**49.7**	**49.7**	**49.7**	**49.7**	**49.8**	**49.8**	**-0.8%**	**-0.1%**
Soft wheat	21.4	20.5	20.6	20.7	20.7	20.8	20.8	20.9	20.9	21.0	21.0	21.1	-0.2%	-0.1%
Durum wheat	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	-1.1%	-0.1%
Barley	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.3	-0.9%	0.0%
Maize	8.7	8.8	8.8	8.8	8.8	8.7	8.7	8.7	8.6	8.6	8.6	8.6	-1.1%	-0.1%
Rye	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	-2.9%	-0.3%
Other cereals	6.0	6.0	6.0	6.0	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	-1.4%	0.0%
Rice	**0.3**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**-2.3%**	**0.2%**
Oilseeds	**11.9**	**11.7**	**11.7**	**11.6**	**11.6**	**11.6**	**11.6**	**11.5**	**11.5**	**11.5**	**11.5**	**11.4**	**1.0%**	**-0.3%**
Rapeseed	6.0	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	0.2%	-1.0%
Sunseed	4.8	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	1.0%	0.1%
Soyabeans	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	8.0%	1.4%
Sugar beet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	0.0%	-0.4%
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	-0.9%	-0.8%
Pulses	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	5.5%	0.4%
other arable crops	6.4	9.7	9.6	9.7	9.8	9.9	10.0	10.2	10.4	10.1	10.2	10.3	-2.2%	4.4%
Fodder (green maize, temp. grassland etc.)	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	0.3%	0.0%
Utilised arable area	**93.5**	**95.8**	**95.7**	**95.8**	**95.9**	**96.0**	**96.1**	**96.3**	**96.4**	**96.1**	**96.2**	**96.4**	**-0.4%**	**0.3%**
set-aside and fallow land	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	-1.7%	0.0%
Share of fallow land	*0.1*	*6.0%*	*6.0%*	*6.0%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	-1.3%	-0.3%
Total arable area	99.2	101.5	101.4	101.5	101.6	101.7	101.8	102.0	102.1	101.8	101.9	102.1	-	-
Permanent grassland	50.6	49.9	50.0	50.0	50.1	50.2	50.2	50.3	50.4	50.5	50.5	50.6	0.4%	0.0%
Share of permanent grassland in UAA	*0.3*	*30.9%*	*30.9%*	*31.0%*	*31.0%*	*31.1%*	*31.1%*	*31.2%*	*31.2%*	*31.2%*	*31.3%*	*31.3%*	0.6%	0.0%
Orchards and others	12.0	10.2	10.2	10.0	9.9	9.7	9.5	9.2	9.0	9.2	9.0	8.8	0.3%	-2.8%
Total utilised agricultural area	161.7	161.6	161.6	161.6	161.6	161.5	161.5	161.5	161.5	161.5	161.5	161.5	-	-

Note: total arable land area includes also a small fraction classified as "other land" which does not fall under the other uses already indicated in the table.

TABLE 9.3 EU cereals market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**270.9**	**271.5**	**272.3**	**272.6**	**272.9**	**273.1**	**273.2**	**273.3**	**273.4**	**273.5**	**273.6**	**273.8**	**-0.5%**	**0.1%**
Imports	35.0	28.3	28.2	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.1	7.0%	-1.7%
Exports	46.6	43.3	43.7	44.4	44.9	45.4	45.8	46.1	46.5	46.9	47.3	47.7	0.5%	0.2%
Domestic use	**260.7**	**256.8**	**256.8**	**256.7**	**256.5**	**256.3**	**256.1**	**255.9**	**255.8**	**255.6**	**255.4**	**255.2**	**0.1%**	**-0.2%**
of which food and industrial	93.2	87.7	89.9	90.3	91.0	91.6	92.4	93.1	93.8	94.6	95.3	96.4	0.1%	0.3%
of which feed	155.0	156.9	155.0	154.8	154.5	154.2	154.0	153.6	153.3	153.0	152.7	152.3	0.0%	-0.2%
of which bioenergy	12.5	12.2	11.9	11.6	10.9	10.4	9.8	9.2	8.6	8.1	7.4	6.4	2.1%	-5.9%
Beginning stocks	46.0	40.0	39.8	39.8	39.7	39.8	39.8	39.9	39.9	39.9	39.9	39.8	4.7%	-1.3%
Ending stocks	44.6	39.8	39.8	39.7	39.8	39.8	39.9	39.9	39.9	39.9	39.8	39.8	4.2%	-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	-	-
Stock-to-use ratio	0.2	15.5%	15.5%	15.5%	15.5%	15.5%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	4.1%	-0.8%

Note: cereals marketing year is July/June. (
Annual growth based on 3-year averages.

TABLE 9.4 EU wheat market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**131.3**	**126.4**	**127.2**	**127.7**	**128.1**	**128.5**	**128.7**	**129.0**	**129.3**	**129.6**	**129.9**	**130.2**	**0.0%**	**-0.1%**
Imports	11.3	7.6	7.2	7.2	7.1	7.1	7.1	7.1	7.1	7.0	7.0	7.0	7.8%	-4.3%
Exports	32.3	28.1	28.5	29.0	29.4	29.7	30.0	30.4	30.7	31.1	31.4	31.8	0.5%	-0.1%
Domestic use	**111.8**	**105.1**	**105.9**	**105.8**	**105.8**	**105.8**	**105.8**	**105.7**	**105.6**	**105.5**	**105.5**	**105.4**	**0.6%**	**-0.5%**
of which food and industrial	62.8	56.0	56.8	56.9	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.2	0.2%	-0.7%
of which feed	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.0	45.0	45.0	1.2%	0.0%
of which bioenergy	3.8	4.1	4.0	3.9	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.2	-0.7%	-4.9%
Beginning stocks	18.4	12.5	13.2	13.2	13.3	13.3	13.4	13.4	13.4	13.4	13.4	13.4	6.3%	-2.9%
Ending stocks	17.0	13.2	13.2	13.3	13.3	13.4	13.4	13.4	13.4	13.4	13.4	13.4	5.2%	-2.1%
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 9.5 EU coarse grains market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**139.6**	**145.1**	**145.1**	**144.9**	**144.8**	**144.6**	**144.5**	**144.3**	**144.1**	**143.9**	**143.8**	**143.6**	**-0.9%**	**0.3%**
Imports	23.7	20.8	21.0	21.2	21.4	21.5	21.6	21.7	21.8	21.9	22.0	22.2	6.6%	-0.6%
Exports	14.3	15.1	15.2	15.4	15.5	15.7	15.7	15.8	15.8	15.8	15.9	16.0	0.4%	1.0%
Domestic use	**148.9**	**151.7**	**150.9**	**150.9**	**150.7**	**150.5**	**150.3**	**150.2**	**150.1**	**150.0**	**149.9**	**149.8**	**-0.2%**	**0.1%**
of which food and industrial	30.3	31.7	33.1	33.4	34.0	34.4	35.0	35.6	36.2	36.8	37.4	38.2	-0.1%	2.1%
of which feed	109.9	111.8	109.9	109.7	109.5	109.1	108.8	108.5	108.2	107.9	107.6	107.4	-0.4%	-0.2%
of which bioenergy	8.7	8.1	7.9	7.7	7.3	6.9	6.5	6.1	5.7	5.3	4.9	4.3	3.7%	-6.3%
Beginning stocks	27.5	27.5	26.6	26.6	26.5	26.5	26.5	26.5	26.5	26.5	26.4	26.4	3.7%	-0.4%
Ending stocks	27.6	26.6	26.6	26.5	26.5	26.5	26.5	26.5	26.5	26.4	26.4	26.4	3.5%	-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	-	-

Note: the coarse grains marketing year is July/June.

TABLE 9.6 EU common wheat market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**124.0**	**119.0**	**119.8**	**120.3**	**120.7**	**121.0**	**121.3**	**121.6**	**121.8**	**122.1**	**122.4**	**122.7**	**0.1%**	**-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**	**0.3%**	**0.0%**
Imports	8.7	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	10.8%	-6.5%
Exports	31.3	27.0	27.6	28.0	28.4	28.7	29.0	29.3	29.6	29.9	30.3	30.6	0.6%	-0.2%
Domestic use	**102.7**	**95.8**	**96.6**	**96.6**	**96.6**	**96.6**	**96.5**	**96.5**	**96.5**	**96.4**	**96.3**	**96.3**	**0.6%**	**-0.6%**
of which food and industrial	53.9	46.9	47.7	47.8	48.0	48.1	48.3	48.5	48.6	48.8	49.0	49.3	0.2%	-0.8%
of which feed	44.9	44.9	44.9	44.9	44.9	44.9	44.9	45.0	44.9	44.9	44.9	44.8	1.2%	0.0%
of which bioenergy	3.8	4.1	4.0	3.9	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.2	-0.7%	-4.9%
Beginning stocks	17.6	11.7	12.4	12.4	12.5	12.5	12.6	12.6	12.6	12.6	12.6	12.6	7.1%	-3.0%
Ending stocks	16.3	12.4	12.4	12.5	12.5	12.6	12.6	12.6	12.6	12.6	12.6	12.6	6.2%	-2.3%
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	245	225	231	236	240	244	248	251	255	259	263	267	1.6%	0.8%
EU intervention price in EUR/t	101	101	101	101	101	101	101	101	101	101	101	101	-	-

Note: the common wheat marketing year is July/June.

TABLE 9.7 EU durum wheat market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**7.3**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.5**	**7.5**	**7.5**	**7.5**	**-1.0%**	**0.2%**
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%**	**0.3%**
Imports	2.5	3.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.6%	1.0%
Exports	1.0	1.2	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	-3.3%	1.9%
Domestic use	**9.1**	**9.3**	**9.3**	**9.3**	**9.3**	**9.2**	**9.2**	**9.2**	**9.2**	**9.2**	**9.1**	**9.1**	**0.3%**	**0.0%**
of which food and industrial	8.9	9.1	9.1	9.1	9.1	9.1	9.0	9.2	9.2	9.2	9.2	9.2	0.3%	0.3%
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	5.1%	-0.5%
Beginning stocks	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-3.0%	-0.4%
Ending stocks	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-6.4%	1.9%

Note: the durum wheat marketing year is July/June.

TABLE 9.8 EU barley market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**50.3**	**51.1**	**51.1**	**51.1**	**51.1**	**51.2**	**51.2**	**51.1**	**51.1**	**51.1**	**51.1**	**51.0**	**-0.3%**	**0.1%**
Yield (t/ha)	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**0.6%**	**0.1%**
Imports	1.9	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	11.6%	-3.3%
Exports	10.0	9.9	10.1	10.3	10.4	10.6	10.7	10.8	10.9	11.0	11.1	11.2	0.6%	1.1%
Domestic use	**42.2**	**41.7**	**42.4**	**42.2**	**42.0**	**41.8**	**41.7**	**41.6**	**41.5**	**41.4**	**41.2**	**41.1**	**-0.3%**	**-0.2%**
of which food and industrial	9.5	8.5	9.2	9.2	9.1	9.0	8.9	8.9	8.8	8.8	8.7	8.7	-0.6%	-0.9%
of which feed	32.2	32.6	32.6	32.5	32.4	32.4	32.3	32.3	32.3	32.2	32.2	32.1	-0.3%	0.0%
of which bioenergy	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	4.0%	-5.4%
Beginning stocks	4.6	4.1	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0	-1.7%	0.7%
Ending stocks	4.6	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0	5.0	-1.2%	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	-	-
EU price in EUR/t	220	190	195	200	205	208	211	214	217	220	223	227	1.7%	0.3%

Note: the barley marketing year is July/June.

TABLE 9.9 EU maize market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**60.5**	**65.0**	**64.9**	**64.8**	**64.6**	**64.4**	**64.2**	**64.0**	**63.8**	**63.6**	**63.4**	**63.2**	**-1.2%**	**0.4%**
Yield (t/ha)	**7.0**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**7.4**	**-0.1%**	**0.5%**
Imports	21.4	19.1	19.4	19.6	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	6.5%	-0.4%
Exports	4.0	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.3	4.3	4.2	0.2%	0.5%
Domestic use	**77.6**	**79.5**	**79.6**	**79.8**	**79.8**	**79.8**	**79.7**	**79.7**	**79.7**	**79.7**	**79.7**	**79.6**	**0.3%**	**0.2%**
of which food and industrial	12.3	14.6	14.8	15.1	15.6	15.9	16.4	16.8	17.3	17.7	18.2	18.8	0.3%	4.0%
of which feed	58.5	58.6	58.7	58.7	58.6	58.5	58.3	58.1	58.0	57.8	57.7	57.5	-0.1%	-0.2%
of which bioenergy	6.9	6.3	6.1	6.0	5.6	5.4	5.0	4.7	4.4	4.1	3.8	3.3	3.7%	-6.4%
Beginning stocks	20.5	20.9	20.8	20.7	20.6	20.6	20.5	20.4	20.3	20.3	20.2	20.1	7.7%	-0.2%
Ending stocks	20.8	20.8	20.7	20.6	20.6	20.5	20.4	20.3	20.3	20.2	20.1	20.0	7.9%	-0.3%
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	243	200	205	209	213	216	218	221	223	226	229	232	2.5%	-0.4%

Note: the maize marketing year is July/June.

TABLE 9.10 EU other cereals* market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**28.8**	**29.0**	**29.0**	**29.1**	**29.1**	**29.1**	**29.1**	**29.2**	**29.2**	**29.2**	**29.3**	**29.3**	**-1.4%**	**0.2%**
Yield (t/ha)	**3.7**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**3.8**	**0.4%**	**0.3%**
Imports	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-0.6%	-3.6%
Exports	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-2.7%	3.9%
Domestic use	**29.1**	**30.4**	**28.9**	**28.9**	**28.9**	**28.8**	**28.9**	**28.9**	**28.9**	**29.0**	**29.0**	**29.0**	**-1.1%**	**0.0%**
of which food and industrial	8.6	8.6	9.1	9.2	9.3	9.5	9.7	9.9	10.1	10.3	10.5	10.7	-0.1%	2.0%
of which feed	19.2	20.6	18.6	18.5	18.4	18.3	18.2	18.0	17.9	17.9	17.8	17.7	-1.7%	-0.7%
of which bioenergy	1.3	1.3	1.2	1.2	1.1	1.1	1.0	0.9	0.9	0.8	0.7	0.7	3.6%	-6.1%
Beginning stocks	2.4	2.5	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.4	-4.5%	-5.1%
Ending stocks	2.3	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	-6.9%	-4.3%

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

TABLE 9.11 EU rice balance (million t milled equivalent)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**-2.2%**	**0.2%**
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**	**0.1%**	**0.0%**
Imports	2.5	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	5.8%	1.7%
Exports	0.4	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.7%	5.1%
Consumption	**3.5**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**3.7**	**2.2%**	**0.5%**
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	1.7%	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	2.1%	0.2%
EU price in EUR/t	652	616	613	626	641	652	661	670	680	688	697	705	1.5%	0.7%

Note: the rice marketing year is September/August.

TABLE 9.12 EU oilseed* (grains and beans) market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Yield (t/ha)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapeseed	3.2	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.2	-0.4%	0.0%
Sunflower seed	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.1%	0.0%
Soya bean	2.6	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	-0.3%	0.3%
Production	**31.1**	**29.8**	**29.7**	**29.7**	**29.8**	**29.8**	**29.8**	**29.8**	**29.8**	**29.9**	**29.9**	**29.9**	**0.7%**	**-0.4%**
Rapeseed	18.8	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.2	-0.2%	-1.0%
Sunflower seed	9.5	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.1%	0.1%
Soya bean	2.7	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	7.4%	1.8%
Imports	21.2	20.6	20.6	20.5	20.4	20.4	20.3	20.3	20.2	20.2	20.1	20.1	2.5%	-0.5%
Exports	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7%	2.5%
Domestic use	**50.8**	**48.9**	**48.9**	**48.8**	**48.7**	**48.7**	**48.6**	**48.5**	**48.5**	**48.4**	**48.3**	**48.3**	**1.3%**	**-0.5%**
of which crushing	46.5	44.4	44.4	44.4	44.3	44.2	44.1	44.0	44.0	43.9	43.8	43.7	1.3%	-0.5%
Beginning stocks	2.7	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	-0.1%	1.6%
Ending stocks	2.9	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	1.1%	1.2%
EU price in EUR/t (rapeseed)	479	434	459	466	480	488	496	505	514	522	532	541	1.7%	1.1%

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

TABLE 9.13 EU oilseed meal* market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**29.0**	**28.2**	**28.3**	**28.3**	**28.4**	**28.5**	**28.6**	**28.6**	**28.7**	**28.8**	**28.9**	**29.0**	**1.2%**	**0.0%**
Imports	20.7	20.4	20.5	20.5	20.4	20.4	20.4	20.3	20.3	20.2	20.2	20.1	0.0%	-0.2%
Exports	2.5	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2%	-0.6%
Domestic use	**47.2**	**46.7**	**46.7**	**46.7**	**46.7**	**46.8**	**46.8**	**46.8**	**46.8**	**46.8**	**46.8**	**46.8**	**0.6%**	**-0.1%**
Beginning stocks	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2%	-1.7%
Ending stocks	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.7%	-1.7%
EU price in EUR/t (soya bean meal)	565	488	503	516	530	542	550	558	567	573	581	588	3.2%	0.4%

** Tables include rapeseed, soya bean, sunflower and groundnuts*
Note: the oilseed meal marketing year is July/June.

TABLE 9.14 EU oilseed oil* market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**16.5**	**16.2**	**16.2**	**16.2**	**16.1**	**16.1**	**16.1**	**16.0**	**16.0**	**16.0**	**15.9**	**15.9**	**1.4%**	**-0.4%**
Imports	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.3	7.4%	0.0%
Exports	1.9	2.5	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.9	-1.0%	3.9%
Domestic use	**17.7**	**17.6**	**17.4**	**17.2**	**17.1**	**17.0**	**16.9**	**16.8**	**16.6**	**16.5**	**16.4**	**16.3**	**2.6%**	**-0.7%**
Beginning stocks	2.4	2.7	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	7.3%	-3.9%
Ending stocks	2.5	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	7.1%	-4.8%
EU price in EUR/t (rapeseed oil)	1 024	1 109	1 171	1 189	1 213	1 227	1 241	1 259	1 279	1 305	1 332	1 358	2.9%	2.6%

** Tables include rapeseed, soya bean, sunflower and groundnuts.*
Note: the oilseed oil marketing year is July/June.

TABLE 9.15 EU vegetable oil* market balance (million t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**16.6**	**16.3**	**16.3**	**16.3**	**16.2**	**16.2**	**16.1**	**16.1**	**16.1**	**16.0**	**16.0**	**16.0**	**1.4%**	**-0.3%**
Imports	10.0	9.6	9.5	9.4	9.2	9.1	8.9	8.8	8.7	8.5	8.4	8.3	0.7%	-1.7%
Exports	2.2	3.3	2.9	3.0	3.2	3.4	3.6	3.7	3.8	3.8	3.8	3.8	-0.5%	4.9%
Domestic use	**24.2**	**23.3**	**22.9**	**22.6**	**22.3**	**21.9**	**21.6**	**21.3**	**21.0**	**20.8**	**20.7**	**20.5**	**1.3%**	**-1.5%**
of which food	10.0	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	1.9%	0.1%
of which other uses	2.7	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.3%	0.9%
of which bioenergy	11.5	10.2	9.9	9.5	9.2	8.8	8.5	8.2	7.9	7.7	7.6	7.4	1.1%	-3.9%
Beginning stocks	2.6	2.9	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.7	5.2%	-3.6%
Ending stocks	2.7	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.7	1.7	5.0%	-4.4%

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

TABLE 9.16 EU sugar market balance (million t white sugar equivalent)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Sugar beet production (million tonnes)	**111.4**	**110.9**	**109.2**	**108.4**	**107.6**	**106.9**	**106.2**	**105.7**	**105.1**	**104.6**	**104.0**	**103.5**	**0.2%**	**-0.7%**
of which for ethanol	8.5	9.7	9.5	9.3	8.8	8.4	7.8	7.4	6.9	6.4	5.9	5.1	2.3%	-4.5%
of which processed for sugar	102.9	101.2	99.6	99.1	98.9	98.5	98.4	98.3	98.2	98.1	98.1	98.3	0.0%	-0.4%
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**	**72.0**	**0.2%**	**-0.3%**
Sugar production*	**15.4**	**15.9**	**15.6**	**15.5**	**15.5**	**15.4**	**15.4**	**15.4**	**15.3**	**15.3**	**15.3**	**15.3**	**-0.5%**	**-0.1%**
Imports	1.5	1.2	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.0	-5.7%	-4.0%
Exports	1.3	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	-3.2%	-1.4%
Domestic use	**15.7**	**15.7**	**15.7**	**15.6**	**15.6**	**15.6**	**15.5**	**15.5**	**15.4**	**15.4**	**15.4**	**15.3**	**-1.1%**	**-0.2%**
Beginning stocks**	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	-4.1%	-0.6%
Ending stocks**	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	-5.2%	-1.4%
EU white sugar price in EUR/t	768	659	625	600	600	608	618	627	639	647	655	665	2.7%	-1.3%

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

TABLE 9.17 EU isoglucose market balance (million t white sugar equivalent)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Isoglucose production	**476.1**	**505.2**	**505.6**	**506.1**	**506.5**	**506.9**	**507.2**	**507.4**	**507.5**	**507.7**	**507.8**	**507.9**	**-4.0%**	**0.6%**
Isoglucose consumption	*434.8*	*468.1*	*467.9*	*467.9*	*467.9*	*468.0*	*468.0*	*468.0*	*468.1*	*468.1*	*468.1*	*468.1*	-4.7%	0.7%
Imports	*3.2*	*3.9*	*4.2*	*4.2*	*4.2*	*4.1*	*4.0*	*4.0*	*4.0*	*4.0*	*4.0*	*4.0*	-13.2%	2.2%
Exports	*44.5*	*41.0*	*41.9*	*42.4*	*42.8*	*43.0*	*43.2*	*43.4*	*43.5*	*43.6*	*43.7*	*43.8*	5.5%	-0.1%

Note: the isoglucose marketing year is October/September.

TABLE 9.18 EU biofuels market balance (million t oil equivalent)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**18.8**	**18.2**	**18.1**	**18.0**	**17.7**	**17.2**	**16.6**	**15.7**	**14.8**	**13.9**	**13.0**	**12.0**	**3.8%**	**-4.0%**
Ethanol	3.6	3.6	3.6	3.6	3.6	3.5	3.4	3.2	3.0	2.8	2.6	2.2	2.0%	-4.1%
...based on wheat	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	-0.7%	-4.9%
...based on maize	1.4	1.3	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.8	0.8	0.7	3.7%	-6.4%
...based on other cereals	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	3.7%	-5.9%
...based on sugar beet and molasses	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	-4.2%	-5.9%
...advanced	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	8.6%	1.5%
Biodiesel	15.2	14.6	14.5	14.3	14.1	13.7	13.2	12.5	11.8	11.1	10.4	9.7	4.3%	-4.0%
...based on rape oils	6.0	5.4	5.3	5.2	5.0	4.8	4.7	4.5	4.4	4.2	4.1	3.9	0.9%	-3.7%
...based on palm oils	2.9	2.0	1.6	1.3	1.0	0.8	0.7	0.5	0.4	0.3	0.3	0.2	1.2%	-21.0%
...based on other vegetable oils	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	2.4%	4.0%
...based on waste oils	3.6	3.7	3.8	3.8	3.9	3.9	4.0	3.6	3.3	3.0	2.7	2.4	14.3%	-3.7%
...other advanced	1.8	2.5	2.7	2.9	3.1	2.9	2.7	2.5	2.3	2.1	1.9	1.7	22.2%	-0.8%
Net trade	- 2.0	- 1.5	- 1.3	- 1.3	- 1.3	- 1.3	- 1.3	- 1.2	- 1.2	- 1.2	- 1.1	- 1.0	7.7%	-5.6%
Ethanol imports	*0.8*	*0.7*	*0.7*	*0.7*	*0.7*	*0.7*	*0.6*	*0.6*	*0.6*	*0.5*	*0.5*	*0.5*	7.8%	-5.3%
Ethanol exports	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.1*	*0.1*	*0.1*	-3.7%	-2.6%
Biodiesel imports	*2.3*	*1.9*	*1.8*	*1.8*	*1.8*	*1.8*	*1.8*	*1.7*	*1.7*	*1.6*	*1.6*	*1.5*	5.3%	-3.7%
Biodiesel exports	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*0.9*	*0.9*	*0.9*	*0.9*	*0.8*	*0.8*	5.5%	-2.0%
Domestic use	**19.8**	**19.8**	**19.8**	**19.3**	**19.1**	**18.6**	**18.1**	**17.3**	**16.4**	**15.3**	**14.4**	**13.4**	**3.7%**	**-3.5%**
Ethanol for fuel	2.7	2.9	3.0	3.0	2.9	2.8	2.7	2.6	2.5	2.3	2.0	1.7	2.9%	-4.1%
non fuel use of ethanol	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.7%	0.0%
Biodiesel	15.9	14.6	14.5	14.3	14.1	13.7	13.2	12.5	11.8	11.1	10.4	9.7	4.1%	-3.7%
Gasoline consumption	64.0	64.6	63.5	61.9	58.9	55.7	52.0	48.8	44.7	40.7	36.4	30.6	-0.3%	-6.5%
Diesel consumption	172.6	166.7	160.4	151.0	142.3	133.3	122.7	108.0	95.3	85.7	78.2	69.9	0.4%	-7.9%
Biofuels energy share (% RED counting)	**10.5**	**11.1**	**11.7**	**12.2**	**13.0**	**13.6**	**14.3**	**15.0**	**15.7**	**16.1**	**16.5**	**17.0**	**5.6%**	**4.5%**
Energy share: 1st-generation	5.3	5.1	5.1	5.0	5.0	5.1	5.3	5.7	6.2	6.5	6.9	7.4	0.7%	3.1%
Energy share: based on waste oils	2.5	3.0	3.2	3.6	3.9	4.1	4.4	4.5	4.7	4.7	4.7	4.7	16.1%	5.7%
Energy share: other advanced	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	31.8%	9.7%
Energy share: Ethanol in Gasoline	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.5	5.6	5.7	5.7	5.8	3.2%	2.6%
Energy share: Biodiesel in Diesel	9.2	9.3	9.6	9.7	10.1	10.4	10.8	11.4	12.0	12.2	12.3	12.4	3.6%	2.7%
Ethanol producer price in EUR/hl	77	60	61	62	63	64	65	65	66	66	67	67	2.9%	-1.2%
Biodiesel producer price in EUR/hl	142	127	131	133	136	138	141	144	147	150	154	157	5.5%	1.0%

TABLE 9.19 EU milk market balance

	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Dairy cows (million heads)	**19.5**	**19.3**	**19.1**	**18.9**	**18.7**	**18.6**	**18.4**	**18.2**	**18.0**	**17.8**	**17.6**	**17.4**	**-0.9%**	**-1.0%**
Milk yield (kg/cow)	**7759**	**7918**	**7987**	**8048**	**8111**	**8174**	**8237**	**8302**	**8366**	**8433**	**8499**	**8566**	**1.9%**	**0.9%**
Dairy cow milk production (million t)	**151.6**	**152.6**	**152.6**	**152.4**	**152.1**	**151.7**	**151.3**	**150.9**	**150.5**	**150.1**	**149.7**	**149.2**	**1.0%**	**-0.1%**
Total cow milk production (million t)	**154.1**	**155.0**	**155.0**	**154.7**	**154.4**	**154.0**	**153.6**	**153.1**	**152.7**	**152.3**	**151.8**	**151.3**	**0.9%**	**-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	4.2	0.3%	0.1%
Non-fat solid content of milk (%)	9.5	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	0.3%	0.1%
Delivered to dairies (million t)	**145.2**	**146.5**	**146.6**	**146.5**	**146.3**	**146.0**	**145.8**	**145.5**	**145.2**	**144.8**	**144.5**	**144.1**	**1.2%**	**-0.1%**
Delivery ratio (%)	*94.3*	*94.5*	*94.6*	*94.7*	*94.8*	*94.8*	*94.9*	*95.0*	*95.1*	*95.1*	*95.2*	*95.2*	0.2%	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%	-1.9%
EU Milk producer price in EUR/t (real fat content)	485	471	461	450	453	457	460	465	470	475	479	484	3.4%	0.0%

TABLE 9.20 EU fresh dairy products market balance (1 000 t)

	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Production	**37 216**	**37 926**	**37 225**	**36 255**	**36 010**	**35 770**	**35 529**	**35 293**	**35 056**	**34 826**	**34 594**	**34 361**	**-0.4%**	**-0.7%**
of which fresh milk	22 802	22 832	22 513	22 198	21 887	21 581	21 280	20 982	20 689	20 400	20 116	19 835	-0.8%	-1.3%
of which cream	2 497	2 463	2 488	2 513	2 538	2 563	2 589	2 615	2 641	2 667	2 694	2 721	0.9%	0.8%
of which yogurt	7 635	7 566	7 569	7 572	7 576	7 579	7 582	7 585	7 588	7 591	7 595	7 598	-0.2%	0.0%
Net trade	800	1 494	1 041	332	316	304	291	280	267	260	248	235	3.9%	-10.5%
Consumption	**36 416**	**36 433**	**36 184**	**35 923**	**35 694**	**35 466**	**35 239**	**35 013**	**34 789**	**34 566**	**34 345**	**34 126**	**-0.4%**	**-0.6%**
of which fresh milk	21 010	20 809	20 604	20 397	20 190	19 981	19 773	19 563	19 354	19 143	18 933	18 722	-1.1%	-1.0%
of which cream	2 243	2 265	2 267	2 269	2 271	2 273	2 274	2 275	2 276	2 277	2 277	2 277	0.6%	0.1%
of which yogurt	7 137	7 164	7 157	7 149	7 141	7 132	7 122	7 111	7 100	7 087	7 074	7 061	-0.3%	-0.1%
per capita consumption (kg)	***81***	***80.5***	***80.0***	***79.5***	***79.1***	***78.7***	***78.3***	***77.9***	***77.5***	***77.1***	***76.7***	***76.4***	***-0.6%***	***-0.5%***
of which fresh milk	47	46.0	45.5	45.1	44.7	44.3	43.9	43.5	43.1	42.7	42.3	41.9	-1.3%	-1.0%
of which cream	5	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	0.4%	0.2%
of which yogurt	16	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	-0.5%	0.0%
of which other FDP	13	13.7	13.6	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.6	1.6%	0.1%

TABLE 9.21 EU cheese market balance (1 000 t)

	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Production	**10 977**	**11 144**	**11 192**	**11 225**	**11 259**	**11 290**	**11 320**	**11 349**	**11 377**	**11 404**	**11 432**	**11 462**	**1.6%**	**0.4%**
Imports	179	185	184	183	182	181	181	181	180	180	180	180	0.2%	0.1%
Exports	1 373	1 355	1 383	1 394	1 409	1 421	1 433	1 444	1 453	1 462	1 472	1 482	1.5%	0.7%
Domestic use	**9 803**	**9 974**	**9 993**	**10 013**	**10 032**	**10 050**	**10 068**	**10 086**	**10 104**	**10 123**	**10 141**	**10 159**	**1.6%**	**0.3%**
per capita consumption (kg)	***20.2***	***20.5***	***20.5***	***20.6***	***20.6***	***20.7***	***20.8***	***20.8***	***20.9***	***21.0***	***21.0***	***21.1***	***1.3%***	***0.4%***
Variation in stocks	- 20	0	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (Cheddar)	4 518	4 682	4 764	4 744	4 826	4 920	4 986	5 050	5 121	5 187	5 255	5 323	3.3%	1.5%

TABLE 9.22 EU butter market balance (1 000 t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**2 307**	**2 337**	**2 352**	**2 359**	**2 365**	**2 370**	**2 374**	**2 378**	**2 382**	**2 386**	**2 389**	**2 392**	**1.3%**	**0.3%**
Imports	48	53	52	51	51	51	51	50	50	50	50	51	0.6%	0.5%
Exports	264	220	225	230	233	236	238	239	241	243	244	245	2.2%	-0.7%
Domestic use	**2 086**	**2 170**	**2 178**	**2 181**	**2 183**	**2 185**	**2 187**	**2 189**	**2 192**	**2 194**	**2 196**	**2 198**	**1.2%**	**0.5%**
per capita consumption (kg)	***5***	***4.8***	***4.8***	***4.8***	***4.8***	***4.8***	***4.9***	***4.9***	***4.9***	***4.9***	***4.9***	***4.9***	***1.0%***	***0.6%***
Ending Stocks	150	150	150	150	150	150	150	150	150	150	150	150	3.5%	0.0%
of which private	150	150	150	150	150	150	150	150	150	150	150	150	3.5%	0.0%
of which intervention	0	0	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (EU-14)	5949	6364	6054	5725	5736	5748	5760	5804	5856	5896	5932	5965	5.6%	0.0%
EU intervention price in EUR/t	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	2218	-	-

Correction 21/01/2025: please note that data for domestic use has been modified.

TABLE 9.23 EU SMP market balance (1 000 t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**1 438**	**1 400**	**1 411**	**1 421**	**1 427**	**1 432**	**1 436**	**1 441**	**1 445**	**1 450**	**1 455**	**1 461**	**2.3%**	**0.1%**
Imports	37	38	38	38	38	38	38	38	38	38	38	38	1.6%	0.4%
Exports	740	723	730	737	740	742	744	746	749	751	754	757	3.0%	0.2%
Domestic use	**726**	**715**	**718**	**722**	**725**	**728**	**730**	**732**	**734**	**737**	**739**	**741**	**1.6%**	**0.2%**
Ending Stocks	107	95	95	95	95	95	95	95	95	95	95	95	0.3%	-1.0%
of which private	107	95	95	95	95	95	95	95	95	95	95	95	0.3%	-1.0%
of which intervention	0	0	0	0	0	0	0	0	0	0	0	0	-	-
EU market price in EUR/t (EU-14)	2 863	2 466	2 503	2 535	2 569	2 603	2 638	2 675	2 711	2 748	2 785	2 822	0.7%	-0.1%

TABLE 9.24 EU WMP market balance (1 000 t)

													Annual growth (%)	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**604**	**616**	**610**	**605**	**599**	**593**	**586**	**579**	**572**	**565**	**558**	**545**	**-1.0%**	**-0.9%**
Imports	19	18	18	18	18	18	18	18	18	18	18	18	-3.9%	-0.2%
Exports	239	192	188	184	179	174	169	164	158	153	147	142	-4.4%	-4.6%
Domestic use	**384**	**442**	**441**	**439**	**438**	**436**	**435**	**433**	**432**	**430**	**429**	**421**	**1.8%**	**0.8%**
EU market price in EUR/t (EU-14)	3 989	3 538	3 241	3 237	3 293	3 356	3 402	3 452	3 503	3 556	3 607	3 661	2.5%	-0.8%

TABLE 9.25 EU whey market balance (1 000 t)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production	**2 229**	**2 250**	**2 256**	**2 264**	**2 270**	**2 275**	**2 280**	**2 284**	**2 289**	**2 293**	**2 297**	**2 302**	**2.1%**	**0.3%**
Imports	45	44	51	51	51	51	52	52	52	52	52	52	-3.3%	1.3%
Exports	687	687	688	690	691	693	694	696	697	699	700	702	2.7%	0.2%
Domestic use	**1 587**	**1 607**	**1 619**	**1 625**	**1 630**	**1 633**	**1 637**	**1 640**	**1 643**	**1 646**	**1 649**	**1 652**	**1.6%**	**0.4%**
EU market price in EUR/t (EU-14)	891	766	770	772	776	780	784	788	793	798	802	806	-1.0%	-0.9%

TABLE 9.26 Aggregate EU meat market balance (1 000 t c.w.e.)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Gross Indigenous Production	**42 113**	**41 912**	**41 933**	**41 868**	**41 810**	**41 735**	**41 649**	**41 563**	**41 474**	**41 382**	**41 289**	**41 194**	**0.4%**	**-0.2%**
Imports of live animals	4	4	6	6	6	6	6	6	6	6	6	6	2.4%	1.9%
Exports of live animals	304	288	285	280	274	269	264	258	253	248	242	236	3.0%	-2.3%
Net Production	**41 814**	**41 628**	**41 654**	**41 594**	**41 541**	**41 472**	**41 391**	**41 310**	**41 226**	**41 140**	**41 052**	**40 964**	**0.4%**	**-0.2%**
Imports (meat)	1 416	1 471	1 470	1 472	1 475	1 478	1 482	1 486	1 492	1 500	1 509	1 511	-1.1%	0.6%
Exports (meat)	5 764	5 436	5 501	5 539	5 563	5 575	5 600	5 610	5 622	5 635	5 650	5 659	0.8%	-0.2%
Net trade (meat)	4 347	3 965	4 031	4 067	4 088	4 096	4 118	4 124	4 130	4 136	4 142	4 148	1.4%	-0.4%
Domestic use	**37 466**	**37 647**	**37 628**	**37 534**	**37 457**	**37 366**	**37 278**	**37 186**	**37 097**	**37 005**	**36 916**	**36 820**	**0.2%**	**-0.2%**
per capita consumption (kg r.w.e.)*	***66.6***	***66.8***	***66.8***	***66.7***	***66.7***	***66.6***	***66.5***	***66.5***	***66.4***	***66.4***	***66.3***	***66.3***	***0.1%***	***0.0%***
of which Beef and Veal meat	*9.8*	9.5	9.5	9.5	9.4	9.4	9.4	9.3	9.3	9.3	9.3	9.2	-0.5%	-0.6%
of which Sheep and Goat meat	*1.3*	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-1.0%	-0.3%
of which Pig meat	*31.3*	30.9	30.8	30.8	30.7	30.6	30.5	30.4	30.3	30.2	30.1	30.0	-0.6%	-0.4%
of which Poultry meat	*24.2*	25.2	25.3	25.2	25.3	25.4	25.4	25.5	25.6	25.6	25.7	25.8	1.6%	0.6%

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

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Total number of cows (million heads)	**29.8**	**29.1**	**29.0**	**28.8**	**28.6**	**28.3**	**28.1**	**27.9**	**27.6**	**27.4**	**27.2**	**26.9**	**-0.6%**	**-0.9%**
of which dairy cows	19.5	19.3	19.1	18.9	18.7	18.6	18.4	18.2	18.0	17.8	17.6	17.4	-0.9%	-1.0%
of which sukler cows	10.3	9.9	9.8	9.8	9.8	9.8	9.7	9.7	9.7	9.6	9.6	9.5	-0.2%	-0.7%
Gross Indigenous Production	**6 734**	**6 559**	**6 558**	**6 525**	**6 500**	**6 472**	**6 443**	**6 413**	**6 382**	**6 350**	**6 317**	**6 283**	**-0.1%**	**-0.6%**
Imports of live animals	0.4	0.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-12.3%	7.9%
Exports of live animals	201	186	181	177	172	168	164	159	155	151	146	141	3.5%	-3.2%
Net Production	**6 533**	**6 373**	**6 377**	**6 349**	**6 328**	**6 305**	**6 281**	**6 255**	**6 228**	**6 200**	**6 171**	**6 143**	**-0.2%**	**-0.6%**
Imports (meat)	323	327	328	330	331	333	334	336	338	340	341	343	-0.4%	0.6%
Exports (meat)	540	570	575	576	582	587	589	591	593	594	595	596	1.7%	0.9%
Net trade (meat)	216	244	246	246	250	254	255	255	255	254	253	252	6.2%	1.4%
Domestic use	**6 316**	**6 125**	**6 131**	**6 105**	**6 078**	**6 051**	**6 026**	**6 000**	**5 973**	**5 945**	**5 919**	**5 891**	**-0.4%**	**-0.6%**
per capita consumption (kg r.w.e.)*	***9.8***	***9.5***	***9.5***	***9.5***	***9.4***	***9.4***	***9.4***	***9.3***	***9.3***	***9.3***	***9.3***	***9.2***	***-0.5%***	***-0.6%***
EU market price in EUR/t	4 987	5 337	5 221	5 133	5 260	5 370	5 474	5 585	5 701	5 820	5 943	6 072	2.9%	1.8%

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

TABLE 9.28 EU pigmeat market balance (1 000 t c.w.e.)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Gross Indigenous Production	**21 323**	**20 758**	**20 745**	**20 722**	**20 666**	**20 593**	**20 517**	**20 441**	**20 364**	**20 286**	**20 209**	**20 131**	**-0.3%**	**-0.5%**
Imports of live animals	1	1	2	2	2	2	2	2	2	2	2	2	3.2%	5.2%
Exports of live animals	47	48	50	50	50	50	50	50	50	50	50	50	-0.7%	0.6%
Net Production	**21 277**	**20 711**	**20 697**	**20 673**	**20 617**	**20 545**	**20 469**	**20 393**	**20 315**	**20 238**	**20 160**	**20 083**	**-0.3%**	**-0.5%**
Imports (meat)	112	109	104	102	100	98	95	93	91	90	89	88	-2.9%	-2.2%
Exports (meat)	3 310	2 909	2 923	2 944	2 951	2 958	2 961	2 965	2 966	2 969	2 971	2 972	0.9%	-1.0%
Net trade (meat)	3 198	2 800	2 819	2 842	2 852	2 860	2 865	2 872	2 875	2 879	2 882	2 884	1.1%	-0.9%
Domestic use	**18 079**	**17 910**	**17 878**	**17 831**	**17 765**	**17 685**	**17 604**	**17 521**	**17 440**	**17 359**	**17 278**	**17 198**	**-0.5%**	**-0.5%**
per capita consumption (kg r.w.e.)*	***31.3***	***30.9***	***30.8***	***30.8***	***30.7***	***30.6***	***30.5***	***30.4***	***30.3***	***30.2***	***30.1***	***30.0***	***-0.6%***	***-0.4%***
EU market price in EUR/t	2 086	1 954	1 957	1 987	2 022	2 051	2 075	2 102	2 130	2 153	2 183	2 210	2.4%	0.5%

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

TABLE 9.29 EU poultry market balance (1 000 t c.w.e.)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Gross Indigenous Production	**13 463**	**14 038**	**14 074**	**14 066**	**14 090**	**14 115**	**14 135**	**14 157**	**14 177**	**14 197**	**14 215**	**14 233**	**1.8%**	**0.5%**
Imports (meat)	823	867	869	871	874	877	880	884	889	896	903	904	-1.1%	0.9%
Exports (meat)	1 875	1 924	1 965	1 980	1 990	1 989	2 008	2 010	2 019	2 028	2 039	2 045	0.2%	0.8%
Net trade (meat)	1 052	1 056	1 097	1 109	1 116	1 112	1 128	1 126	1 130	1 132	1 136	1 141	1.4%	0.7%
Domestic use	**12 410**	**12 970**	**12 984**	**12 961**	**12 977**	**12 993**	**13 012**	**13 030**	**13 047**	**13 066**	**13 084**	**13 096**	**1.8%**	**0.5%**
per capita consumption (kg r.w.e.)*	***24.2***	***25.2***	***25.3***	***25.2***	***25.3***	***25.4***	***25.4***	***25.5***	***25.6***	***25.6***	***25.7***	***25.8***	***1.6%***	***0.6%***
EU market price in EUR/t	2 634	2 517	2 528	2 555	2 581	2 607	2 625	2 648	2 669	2 691	2 713	2 736	2.6%	0.3%

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

TABLE 9.30 EU sheep and goat meat market balance (1 000 t c.w.e.)

													Annual growth	
	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Gross Indigenous Production	**593**	**557**	**557**	**556**	**555**	**554**	**553**	**552**	**551**	**550**	**548**	**547**	**-0.3%**	**-0.7%**
Imports of live animals	3	3	3	3	3	3	3	3	3	3	3	3	9.3%	-0.5%
Exports of live animals	55	54	54	53	52	51	50	49	48	47	46	45	5.5%	-1.9%
Net Production	**541**	**506**	**506**	**506**	**506**	**506**	**506**	**506**	**506**	**506**	**505**	**505**	**-0.7%**	**-0.6%**
Imports (meat)	159	168	168	169	170	171	172	173	174	174	175	175	-0.7%	0.9%
Exports (meat)	39	33	38	39	40	41	42	43	44	44	45	46	0.5%	1.5%
Net trade (meat)	- 120	-135	-130	-130	-130	-130	-130	-130	-130	-130	-130	-129	-1.1%	0.7%
Domestic use	**661**	**641**	**636**	**636**	**636**	**636**	**636**	**636**	**636**	**635**	**635**	**634**	**-0.8%**	**-0.4%**
per capita consumption (kg r.w.e.)*	***1.3***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***1.2***	***-1.0%***	***-0.3%***
EU market price in EUR/t	7 622	8 181	7 950	7 728	7 875	7 990	8 098	8 194	8 303	8 397	8 506	8 613	4.3%	1.1%

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

TABLE 9.31 EU egg market balance (1 000 t)*

	avg 2022-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Production	**6 391**	**6 405**	**6 410**	**6 421**	**6 439**	**6 457**	**6 476**	**6 493**	**6 512**	**6 532**	**6 552**	**6 572**	**1.0%**	**0.3%**
Imports	64	60	63	65	68	70	73	75	78	80	83	85	7.9%	2.6%
Exports	276	275	280	285	290	295	300	305	310	315	320	325	0.9%	1.5%
Domestic use	**6 178**	**6 190**	**6 192**	**6 201**	**6 217**	**6 232**	**6 249**	**6 263**	**6 279**	**6 297**	**6 315**	**6 332**	**1.0%**	**0.2%**
per capita consumption (kg)	***13.7***	***13.7***	***13.7***	***13.7***	***13.8***	***13.8***	***13.9***	***13.9***	***14.0***	***14.0***	***14.1***	***14.2***	***0.9%***	***0.3%***

** eggs for consumption*

TABLE 9.32 EU olive oil market balance (1 000 t)

	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Production	**1 860**	**1 882**	**1 896**	**1 910**	**1 924**	**1 940**	**1 956**	**1 972**	**1 990**	**2 004**	**2 020**	**2 034**	**-0.8%**	**0.8%**
of which ES+PT	1 319	1 359	1 374	1 389	1 403	1 418	1 433	1 448	1 463	1 477	1 492	1 507	-0.2%	1.2%
of which IT+EL	547	510	510	510	510	511	511	511	511	512	512	512	-2.1%	-0.6%
Net exports	504	645	665	654	642	665	670	694	719	719	743	749	1.1%	3.7%
Consumption	**1 334**	**1 237**	**1 231**	**1 256**	**1 282**	**1 275**	**1 286**	**1 279**	**1 271**	**1 285**	**1 277**	**1 286**	**-2.1%**	**-0.3%**
of which ES-IT-EL-PT	1 019	878	872	865	857	850	843	835	828	820	813	806	-3.0%	-2.1%
of which other EU	316	359	359	391	424	424	443	443	443	464	464	480	1.6%	3.9%
per capita ES-IT-EL-PT (kg)	***8.0***	***6.8***	***6.8***	***6.8***	***6.7***	***6.7***	***6.7***	***6.6***	***6.6***	***6.5***	***6.5***	***6.5***	***-2.9%***	***-1.9%***
per capita other EU (kg)	***1.0***	***1.1***	***1.1***	***1.2***	***1.3***	***1.3***	***1.4***	***1.4***	***1.4***	***1.4***	***1.4***	***1.5***	***1.8%***	***3.7%***
Ending stocks	**542**	**601**	**601**	**601**	**601**	**601**	**601**	**601**	**601**	**601**	**601**	**601**		

Note: the olive oil marketing year is October/September. Projections from 2025 are the output of the AGMEMOD model. Difference and annual growth based on 5-year trimmed averages for 2014 and 2024.

TABLE 9.33 EU table olives market balance (1 000 t)

	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Annual growth 2014-2024	Annual growth 2024-2035
Production (ES-IT-EL-PT)	**811**	**734**	**729**	**728**	**730**	**734**	**739**	**746**	**753**	**761**	**769**	**777**	**0.2%**	**-0.4%**
of which ES+PT	495	487	481	480	481	485	489	495	501	508	515	522	-1.3%	0.5%
of which IT+EL	266	247	247	248	248	249	250	251	252	253	254	255	1.6%	-0.4%
Net exports	163	81	70	64	60	59	58	59	61	63	65	68	-1.7%	-7.6%
Consumption	**648**	**653**	**659**	**664**	**670**	**675**	**681**	**686**	**692**	**698**	**703**	**709**	**0.9%**	**0.8%**
of which ES-IT-EL-PT	319	334	344	351	356	360	362	363	364	365	365	365	-0.4%	1.2%
of which other EU	325	319	314	313	313	315	319	323	328	333	338	344	2.6%	0.5%
per capita ES-IT-EL-PT (kg)	***2.5***	***2.6***	***2.7***	***2.8***	***2.8***	***2.8***	***2.9***	***2.9***	***2.9***	***2.9***	***2.9***	***2.9***	***-0.4%***	***1.4%***
per capita other EU (kg)	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.1***	***2.4%***	***0.5%***

Note: the table olive marketing year is October/September. Figures are output of the AGMEMOD model. Difference and annual growth based on 5-year trimmed averages for 2014 and 2024.

TABLE 9.34 EU wine market balance (million hectolitres)

													Annual growth	
	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Area (million ha)	**3.2**	**3.1**	**3.1**	**3.1**	**3.1**	**3.1**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**-0.2%**	**-0.7%**
Yield (hl/ha)	47.5	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	-0.2%	0.0%
Production	**151.8**	**148**	**147**	**147**	**146**	**145**	**144**	**143**	**142**	**141**	**140**	**140**	**-0.5%**	**-0.8%**
of which 5 main producer MS	137.5	135	134	133	132	131	130	130	129	128	127	126	-0.5%	-0.8%
other EU MS	14.0	14	14	14	14	14	14	14	13	13	13	13	-0.7%	-0.5%
Imports	6.3	5	5	5	5	5	5	5	5	5	5	5	-3.0%	-2.7%
Exports	30.5	27	27	27	27	27	27	27	27	27	27	27	0.6%	-1.2%
Domestic use	**130.7**	**125**	**126**	**125**	**124**	**123**	**122**	**121**	**120**	**119**	**118**	**117**	**-0.8%**	**-1.0%**
Human consumption	**100.3**	**96**	**95**	**94**	**94**	**93**	**92**	**91**	**91**	**90**	**89**	**88**	**-1.8%**	**-1.1%**
per capita consumption (l)	***22.3***	***21.3***	***21.1***	***21.0***	***20.8***	***20.7***	***20.5***	***20.4***	***20.3***	***20.1***	***20.0***	***19.8***	***-1.9%***	***-1.1%***
Other uses	**30.3**	**29**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**29**	**29**	**29**	**3.4%**	**-0.4%**
Ending stocks	**166.5**	**153**	**153**	**153**	**153**	**153**	**153**	**153**	**153**	**153**	**153**	**153**	**0.8%**	**-0.8%**

Note: only vinified production is included. The wine marketing year is August/July. Difference and annual growth based on 5-year trimmed averages for 2014 and 2024.

TABLE 9.35 EU apples market balance (1 000 t fresh equivalent)

													Annual growth	
	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Area (million ha)	**482**	**475**	**474**	**473**	**472**	**471**	**470**	**469**	**468**	**467**	**466**	**465**	**-1.0%**	**-0.3%**
Yield (t/ha)	25	25	25	25	25	25	25	26	26	26	26	26	1.6%	0.4%
Gross production	**12 134**	**11 776**	**11 809**	**11 841**	**11 873**	**11 905**	**11 936**	**11 968**	**11 999**	**12 029**	**12 060**	**12 090**	**0.6%**	**0.0%**
of which losses and feed use	725	697	697	698	698	699	699	699	699	699	699	699	-0.4%	-0.3%
of which usable production	11 409	11 079	11 112	11 143	11 175	11 206	11 237	11 269	11 300	11 330	11 361	11 391	0.7%	0.0%
Production (fresh)	**7 037**	**7 201**	**7 223**	**7 243**	**7 264**	**7 284**	**7 304**	**7 325**	**7 345**	**7 365**	**7 385**	**7 404**	**-0.3%**	**0.5%**
Imports (fresh)	281	278	276	274	271	269	267	264	262	260	257	255	-3.6%	-0.9%
Exports (fresh)	1 027	950	965	980	995	1 010	1 025	1 040	1 055	1 070	1 085	1 100	-5.4%	0.6%
Consumption (fresh)	**6 324**	**6 530**	**6 534**	**6 537**	**6 540**	**6 543**	**6 546**	**6 549**	**6 552**	**6 554**	**6 557**	**6 559**	**0.6%**	**0.3%**
per capita (kg)	***14.1***	***14.4***	***14.4***	***14.5***	***14.5***	***14.5***	***14.5***	***14.6***	***14.6***	***14.6***	***14.7***	***14.7***	***0.4%***	***0.4%***
Variation in stocks (fresh)	**402**	*:*	*:*	*:*	*:*	*:*	*:*	*:*	*:*	*:*	*:*	*:*	**3.7%**	**0.0%**
Production (for processing)	**4 105**	**3 878**	**3 889**	**3 900**	**3 911**	**3 922**	**3 933**	**3 944**	**3 955**	**3 966**	**3 976**	**3 987**	**2.1%**	**-0.3%**
Imports (processed)	1 127	1 319	1 295	1 272	1 248	1 225	1 201	1 177	1 154	1 130	1 107	1 083	-0.9%	-0.4%
Exports (processed)	1 232	1 059	1 075	1 090	1 106	1 122	1 138	1 153	1 169	1 185	1 200	1 216	2.2%	-0.1%
Apparent consumption (processed)	**4 004**	**4 138**	**4 110**	**4 081**	**4 053**	**4 025**	**3 997**	**3 968**	**3 940**	**3 911**	**3 883**	**3 854**	**1.2%**	**-0.3%**
per capita (kg)	***8.9***	***9.1***	***9.1***	***9.0***	***9.0***	***8.9***	***8.9***	***8.8***	***8.8***	***8.7***	***8.7***	***8.6***	***1.0%***	***-0.3%***

Note: the apples marketing year is August/July. Difference and annual growth based on 5-year trimmed averages for 2014 and 2024.
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

TABLE 9.36 EU tomatoes market balance (1 000 t fresh equivalent)

													Annual growth	
	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production (total)	**17 032**	**17 373**	**17 432**	**17 492**	**17 553**	**17 613**	**17 674**	**17 736**	**17 798**	**17 860**	**17 923**	**17 986**	**0.7%**	**0.5%**
Production (fresh)	**6 552**	**6 400**	**6 394**	**6 387**	**6 381**	**6 374**	**6 368**	**6 362**	**6 355**	**6 349**	**6 343**	**6 336**	**-0.7%**	**-0.3%**
Imports (fresh)	768	810	811	812	814	815	816	817	819	820	821	822	5.7%	0.6%
Exports (fresh)	369	369	369	368	367	366	366	365	364	363	363	362	-5.1%	-0.2%
Apparent consumption (fresh)	**6 902**	**6 841**	**6 836**	**6 832**	**6 827**	**6 823**	**6 819**	**6 814**	**6 810**	**6 805**	**6 801**	**6 797**	**0.1%**	**-0.1%**
per capita (kg)	***15.4***	***15.1***	***15.1***	***15.1***	***15.1***	***15.1***	***15.1***	***15.2***	***15.2***	***15.2***	***15.2***	***15.2***	***0.0%***	***-0.1%***
Production (for processing)	**10 493**	**10 973**	**11 039**	**11 105**	**11 172**	**11 239**	**11 306**	**11 374**	**11 442**	**11 511**	**11 580**	**11 649**	**1.5%**	**1.0%**
Imports (processed)	2 608	2 980	2 983	2 986	2 989	2 992	2 995	2 998	3 001	3 004	3 007	3 010	1.6%	1.3%
Exports (processed)	4 366	4 140	4 161	4 182	4 203	4 224	4 245	4 266	4 287	4 309	4 330	4 352	1.7%	0.0%
Apparent consumption (processed)	**9 004**	**9 813**	**9 861**	**9 909**	**9 958**	**10 007**	**10 056**	**10 106**	**10 156**	**10 206**	**10 256**	**10 307**	**1.7%**	**1.2%**
per capita (kg)	***20.0***	***21.7***	***21.8***	***21.9***	***22.1***	***22.2***	***22.3***	***22.5***	***22.6***	***22.8***	***22.9***	***23.1***	***1.6%***	***1.3%***

Note: difference and annual growth based on 5-year trimmed averages for 2014 and 2024.
Consumption and trade figures of processed tomatoes are expressed in fresh tomato 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 9.37 EU peaches and nectarines market balance (1 000 t fresh equivalent)

													Annual growth	
	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production (total)	**3 453**	**3 483**	**3 466**	**3 448**	**3 431**	**3 414**	**3 397**	**3 380**	**3 363**	**3 346**	**3 329**	**3 313**	**-1.3%**	**-0.4%**
Area (1000 ha) (fresh)	**170**	**170**	**169**	**169**	**168**	**167**	**166**	**165**	**164**	**164**	**163**	**162**	**-2.2%**	**-0.4%**
Yield (t/ha) (fresh)	17	17	17	17	17	17	17	17	17	17	17	17	1.1%	0.0%
Production (fresh)	**2 837**	**2 852**	**2 838**	**2 824**	**2 810**	**2 796**	**2 782**	**2 768**	**2 754**	**2 740**	**2 727**	**2 713**	**-1.1%**	**-0.4%**
Imports (fresh)	44	56	58	59	61	63	65	67	69	71	73	75	6.6%	5.0%
Exports (fresh)	135	132	128	124	120	117	113	110	107	103	100	97	-10.8%	-2.9%
Apparent consumption (fresh)	**2 732**	**2 776**	**2 768**	**2 759**	**2 751**	**2 742**	**2 733**	**2 725**	**2 716**	**2 708**	**2 699**	**2 691**	**-0.1%**	**-0.1%**
per capita (kg)	***6.1***	***6.2***	***6.1***	***6.1***	***6.1***	***6.1***	***6.1***	***6.1***	***6.1***	***6.1***	***6.1***	***6.0***	***-0.3%***	***0.0%***
Area (million ha) (for processing)	**24**	**26**	**26**	**26**	**26**	**26**	**26**	**25**	**25**	**25**	**25**	**25**	**0.5%**	**0.3%**
Yield (t/ha) (for processing)	24	24	24	24	24	24	24	24	24	24	24	24	-3.2%	-0.1%
Production (for processing)	**571**	**631**	**628**	**624**	**621**	**618**	**615**	**612**	**609**	**606**	**603**	**600**	**-2.9%**	**0.4%**
Imports (processed)	15	12	12	12	12	12	12	12	12	12	12	12	-1.8%	-2.0%
Exports (processedt)	161	170	172	174	175	177	179	181	182	184	186	188	-0.1%	1.4%
Apparent consumption (processed)	**437**	**473**	**468**	**463**	**458**	**453**	**448**	**443**	**439**	**434**	**429**	**424**	**-3.5%**	**-0.3%**
per capita (kg)	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***-3.6%***	***-0.2%***

Note: difference and annual growth based on 5-year trimmed averages for 2014 and 2024.

TABLE 9.38 EU oranges market balance (1 000 t fresh equivalent)

													Annual growth	
	avg 2020-2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2014-2024	2024-2035
Production (total)	**6 138**	**6 151**	**6 157**	**6 163**	**6 169**	**6 175**	**6 180**	**6 186**	**6 192**	**6 198**	**6 204**	**6 210**	**-0.3%**	**0.1%**
Area (million ha)	**277**	**277**	**277**	**277**	**277**	**277**	**277**	**277**	**276**	**276**	**276**	**276**	**-0.7%**	**0.0%**
Yield (t/ha)	22	22	22	22	22	22	22	22	22	22	22	23	0.5%	0.1%
Production (fresh)	**5 301**	**5 156**	**5 166**	**5 177**	**5 187**	**5 198**	**5 208**	**5 219**	**5 229**	**5 240**	**5 250**	**5 260**	**0.5%**	**-0.1%**
Imports (fresh)	908	884	901	918	935	953	971	990	1 008	1 028	1 047	1 067	2.3%	1.5%
Exports (fresh)	371	367	368	369	369	370	371	372	372	373	374	375	**-1.4%**	0.1%
Apparent consumption (fresh)	**5 801**	**5 673**	**5 699**	**5 726**	**5 753**	**5 781**	**5 809**	**5 837**	**5 866**	**5 894**	**5 923**	**5 953**	**0.8%**	**0.2%**
per capita (kg)	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***13***	***0.7%***	***0.3%***
Production (for processing)	**842**	**995**	**990**	**986**	**981**	**977**	**972**	**967**	**963**	**958**	**954**	**950**	**-4.0%**	**1.1%**
Imports (processed)	3 215	3 472	3 434	3 396	3 359	3 322	3 285	3 249	3 213	3 178	3 143	3 108	-3.6%	-0.3%
Exports (processed)	1 267	1 610	1 612	1 615	1 617	1 620	1 622	1 625	1 627	1 630	1 633	1 635	-3.6%	2.3%
Apparent consumption (processed)	**2 724**	**2 857**	**2 812**	**2 767**	**2 722**	**2 678**	**2 635**	**2 591**	**2 549**	**2 506**	**2 464**	**2 423**	**-4.2%**	**-1.1%**
per capita (kg)	***6***	***6***	***6***	***6***	***6***	***6***	***6***	***6***	***6***	***6***	***6***	***5***	***-4.4%***	***-1.0%***

Note: the oranges marketing year is October/September.

TABLE 9.39 EU self-sufficiency rate (%)

CROP SECTORS	EU											
	avg 2022-24	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Arable crops												
Overall Cereals	104	106	106	106	106	107	107	107	107	107	107	107
Wheat	117	120	120	121	121	121	122	122	122	123	123	124
Coarse grains	94	96	96	96	96	96	96	96	96	96	96	96
Common wheat	121	124	124	125	125	125	126	126	126	127	127	127
Durum wheat	81	79	80	80	80	81	81	81	81	81	82	82
Barley	119	122	121	121	122	122	123	123	123	123	124	124
Maize	78	82	82	81	81	81	80	80	80	80	80	79
Other cereals	99	95	100	101	101	101	101	101	101	101	101	101
Rice	41	39	39	39	39	39	39	39	39	39	39	39
Oilseed	61	61	61	61	61	61	61	61	62	62	62	62
Oilseed meal	61	60	61	61	61	61	61	61	61	62	62	62
Oilseed oil	93	92	93	94	94	95	95	96	96	97	97	97
Vegetable oil	68	70	71	72	73	74	75	76	77	77	77	78
Sugar	98	101	99	99	99	99	99	99	99	100	100	100
Isoglucose	110	108	108	108	108	108	108	108	108	108	108	109
Biofuels	95	92	91	93	93	92	92	91	90	91	90	89

ANIMAL SECTORS	EU											
	avg 2022-24	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Dairy products												
Fresh dairy products	102	104	103	101	101	101	101	101	101	101	101	101
Cheese	112	112	112	112	112	112	112	113	113	113	113	113
Butter	114	117	117	117	118	118	118	118	118	118	118	118
SMP	198	196	196	197	197	197	197	197	197	197	197	197
WMP	157	139	139	138	137	136	135	134	132	131	130	129
Whey	140	140	139	139	139	139	139	139	139	139	139	139
Meat												
Beef and veal	107	107	107	107	107	107	107	107	107	107	107	107
Pigmeat	118	116	116	116	116	116	117	117	117	117	117	117
Poultry	108	108	108	109	109	109	109	109	109	109	109	109
Sheep and goat	90	87	88	87	87	87	87	87	87	87	86	86

UNCERTAINTY ANALYSIS RESULTS

Methodology[1]

The uncertainty analysis presented in this report is based on the Aglink-Cosimo model, which is a mathematical representation of global agricultural commodity markets and their interlinkages. In this model, 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 procedure used to quantify the uncertainty of baseline projections is the following: First, 140 variables were treated jointly as partially stochastic using empirically observed variability from the period 2000-2023[2]. Next, statistical time-series models were used to separate random movements over time from trends in the yield and macroeconomic variables or from stable relationships between them. Then, a large set of alternative trajectories of yields and macroeconomic variables were generated using statistical techniques that account for covariation across regional blocks. Finally, the generated time series were used as alternative input data to the model, resulting in a large set of alternative baselines.

The different combinations of yield and macroeconomic factors would lead to different market balances and price equilibria. The area between the dashed lines in the fan charts in the stochastics chapter represents about 95% of alternative outcome distributions in each year. Similar graphs are presented in various commodity chapters of this report. An input variable with a high level of historical variation will result in market outcomes (e.g. market balances, prices) 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, %)[3]. The higher the CV value of an input variable, the higher the importance of that variable in driving market uncertainty. The macroeconomic variable with the largest variability in the uncertainty analysis is the crude oil price with a CV value of 23.6%. Exchange rates affecting trade are also fairly uncertain (e.g., $CV_{USD/EUR}$ or $_{EUR/USD}$ = 5.2%). In comparison, the CV values of EU GDP and the consumer price index are somewhat lower.

On average, the EU crops with the most uncertain yields are maize, soya bean, sunflower, sugar beet and rye. Soya bean yield variability is lower in the major exporting countries. Soya beans and other oilseeds prices are affected directly by changes in yields (affecting supply) but also by changes in GDP and inflation affecting supply and demand for food and feed. In addition, the oil price affects their production costs (supply) as well as their biofuel demand. This means that oilseed prices are highly uncertain, which in turn leads to uncertain protein and vegetable oil prices.

[1] For more details see Pieralli et al. (2022 - Documentation of the European Commission's EU module of the Aglink-Cosimo model: 2021 version).

[2] 89 region-commodity combinations of crops and milk yields, 50 country-specific macroeconomic variables (consumer price index, exchange rates, real GDP, GDP index) and the crude oil price (Brent).

[3] Coefficient of variation (CV) = 100 × standard deviation ÷ mean. The CV is a measure of the dispersion of a distribution that is independent of the units of the stochastic variable. In our case, the distribution is that of simulated values in a given year (e.g., the crude oil price in 2031 across all the stochastic simulations).

TABLE 9.40 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	0.8	5.9	-
Brazil	1.1	1	1.9	8.5	-
Canada	0.5	1.2	1.4	2.7	-
China	1	1.7	1.1	2.4	-
United Kingdom	1	0.8	2.7	5	-
Indonesia	1.5	2.1	1	3.7	-
India	0.9	0.8	2.2	4.4	-
Japan	0.6	0.4	1.7	7.5	-
New Zealand	0.9	0.8	1	6.1	-
Russia	1.9	4.2	2.4	8.5	-
United States	0.7	0.7	1.1	-	-
EU-27	0.9	0.5	1.7	5.2	-
World	-	-	-	-	23.6

TABLE 9.41 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	7.6	1.8	-	11	-	4	7.1	-	-	-	0.5	-	-	-	1.2	-	-	0.3	-
Common wheat	11	17	11	7.3	1.8	4.1	12	1.1	1.9	13	10	1.1	0.4	8.5	12	1.3	8.3	3	1.1
Durum wheat	-	-	-	-	-	6.2	5.2	-	-	-	-	-	-	-	-	-	-	-	-
Maize	7.7	0.4	7.2	5.9	0.8	4.9	20.4	1.3	1	2.2	5.8	1.7	0.4	10.9	0.8	2.3	13	2.6	1.5
Milk	0.4	0.4	0.5	0.3	0.7	0.2	0.8	-	-	-	0.1	-	0.8	-	0.2	-	-	0.3	-
Oats	0	0.5	-	8.6	-	4.5	7.6	-	-	-	0	-	-	-	1.4	-	-	0.3	-
Other Oilseeds	12	24	0	4.2	0.4	2.3	10	1.2	0.9	11.8	0	1.2	0	4.3	7.6	1.2	10.5	0.2	1.2
Other coarse grains	4.6	1.5	0.5	9.6	0.4	-	-	1.2	0.9	1.3	0.4	1.3	0.4	-	1.3	1.3	16.9	0.3	-
Palm oil	-	-	0	-	0	-	-	3.2	0.5	-	0	3.3	-	0.5	-	0.5	-	-	-
Rapeseed	0	24	0	4.2	0.6	2.5	7.2	-	-	-	0	-	0	-	1.4	-	-	0.1	-
Rice	0	0.2	0.4	-	11	5.5	0.3	0.7	3.4	1.1	0.2	0.6	-	0.7	0.6	1.7	0.8	4.8	2.4
Rye	0	-	-	0	-	7.1	8.9	-	-	-	-	-	-	-	0.3	-	-	-	-
Soybean	17	0	5.7	4	0.6	7.1	13.2	1.8	1.3	7	0	1.7	-	14.4	1.2	2	7.8	5.1	1.7
Sugarbeet	-	-	-	0.4	3	8.7	8.8	-	-	-	-	-	-	-	14	-	1.7	5.3	-
Sugarcane	26.7	4.2	8	-	1.7	-	-	1	3.2	-	0.4	-	-	0	-	13	-	4.3	0.9
Sunflower seed	14.4	0	0	0	0.4	4.7	16.9	-	-	-	0	-	-	-	9.7	-	-	0.1	-

TABLE 9.42 Price uncertainty in 2035 (CV, %)

Commodity	EU domestic price			International reference prices		
	Yield	Macro	Combined	Yield	Macro	Combined
Barley	7	6.8	9.8	-	-	-
Beef and Veal	3.2	4.7	5.6	2.8	2.6	3.9
Biodiesel	2.1	9	9.4	2.3	7.9	8.3
Butter	2	3.8	4.3	2.6	3.7	4.6
Casein	0.4	4.3	4.3	0	0	0
Cereal brans	6	6.1	8.7	5.3	4.1	6.9
Cheese	1.7	3.6	3.9	1.9	2.5	3.2
Corn Gluten Feed	5.7	6.5	8.8	5.7	4.7	7.7
Cotton	1.2	5.9	6	1.2	3.6	3.8
Dried Distillers Grains	5.6	6.7	8.8	5.6	5	7.7
Dried beet pulp	8.9	6.8	11.1	8.9	5.4	10.3
Ethanol	3	9.4	9.8	3.1	8.8	9.3
High fructose corn syrup	3.4	4.4	5.6	4.9	4.3	6.9
Maize	7.5	6.3	10	6	4.6	7.8
Meat and bone meal	0	0	0	6.1	4.5	7.8
Milk	1.6	3.4	3.7	-	-	-
Molasses	7.7	6	9.6	8.3	5.1	10.1
Other Oilseeds	11	6	12.4	11	4.7	11.7
Other coarse grains	7.3	6.4	9.8	6.5	5.8	8.9
Pork	5.1	5.7	7.6	5.2	3.4	6.4
Poultry	4.1	5.2	6.7	4	3.2	5.3
Pulses	4.6	6.9	8.4	3.9	5.4	6.8
Rapeseed	10.3	6.2	11.8	-	-	-
Rice	4.1	6.3	7.4	4.1	4.3	6.1
Roots and tubers	2.8	4.2	5.1	4.1	3.7	5.7
Sheep	3.2	4.8	5.7	3.3	2.7	4.5
Skimmed milk powder	1.4	3.7	3.9	1.3	1.6	2.1
Soya bean	14	6.2	15.5	14.4	4.1	15
Sunflower seed	13.1	5.7	14.2	-	-	-
Total Protein Meal	8.3	6.1	10.3	9	4.2	10
Vegetable oils	7.4	6.1	9.8	7.4	4.2	8.3
Wheat	9.2	6.5	11.4	9	4.8	10.4
Whey powder	0.9	3.6	3.7	0.8	2.4	2.6
White sugar	12.4	5.9	13.7	5.1	2.8	6
Whole milk powder	1.6	3.7	4	1.7	2.3	2.9

SCENARIO DATA
STRESS-TESTING THE EU FEED SUPPLY CHAIN

TABLE 9.43 Market balance changes for EU protein meal in the weather extreme, increased feed efficiency, improved yields and combined scenarios (Difference from the baseline in percentages and thousand tonnes) -2035

PRTOEIN MEAL	WEATHER		FEED		YIELD		COMBINED	
	%	1 000 t	%	1 000 t	%	1 000 t	%	1 000 t
Consumption	-5.88	-2738.73	-0.99	-461.69	0.38	177.86	-6.41	-2983.38
Production	-4.95	-1441.37	-0.04	-12.00	1.67	484.42	-3.25	-944.44
Exports	4.26	100.84	1.86	44.05	-1.33	-31.60	4.86	115.01
Imports	-6.07	-1205.75	-2.04	-405.64	-1.70	-338.17	-9.74	-1933.11

TABLE 9.44 Market balance changes for EU meats across scenarios in the weather extreme, increased feed efficiency, improved yields and combined scenarios. (Difference from the baseline in thousand tonnes and percentages) -2035

MEATS	WEATHER		FEED		YIELD		COMBINED	
	%	1 000 t	%	1 000 t	%	1 000 t	%	1 000 t
Consumption	-0.21	-75.63	0.02	7.70	0.01	2.59	-0.18	-64.68
Production	-0.10	-40.22	0.12	49.23	0.08	32.50	0.11	44.48
Exports	0.69	44.60	0.49	31.79	0.35	22.49	1.53	99.19
Imports	0.28	4.09	-0.66	-9.74	-0.50	-7.42	-1.01	-15.01

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KF-01-24-024-EN-N

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ISSN 2600-0628