

# DOING BUSINESS WITH AGRICULTURAL SECTOR

## LEVERAGE ON SKYMINDER SOLUTIONS

APRIL 2024 SKYMINDER NEWSLETTER



# Agricultural Sector Overview

Agriculture encompasses crop and livestock production, aquaculture, fisheries, and forestry for food and non-food products. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. While humans started gathering grains at least 105,000 years ago, nascent farmers only began planting them around 11,500 years ago. Sheep, goats, pigs, and cattle were domesticated around 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. In the 20th century, industrial agriculture based on large-scale monocultures came to dominate agricultural output.

The major agricultural products can be broadly grouped into foods, fibers, fuels, and raw materials (such as rubber). Food classes include cereals (grains), vegetables, fruits, cooking oils, meat, milk, eggs, and fungi.

Global agricultural production amounts to approximately 11 billion tonnes of food, 32 million tonnes of natural fibres and 4 billion m<sup>3</sup> of wood. However, around 14% of the world's food is lost from production before reaching the retail level.

Modern agronomy, plant breeding, agrochemicals such as pesticides and fertilizers, and technological developments have sharply increased crop yields, but also contributed to ecological and environmental damage. Selective breeding and modern practices in animal husbandry have similarly increased the output of meat, but have raised concerns about animal welfare and environmental damage. Environmental issues include contributions to climate change, depletion of aquifers, deforestation, antibiotic resistance, and other agricultural pollution. Agriculture is both a cause of and sensitive to environmental degradation, such as biodiversity loss, desertification, soil degradation, and climate change, all of which can cause decreases in crop yield. Genetically modified organisms are widely used, although some countries ban them.

SOURCE: Wikipedia

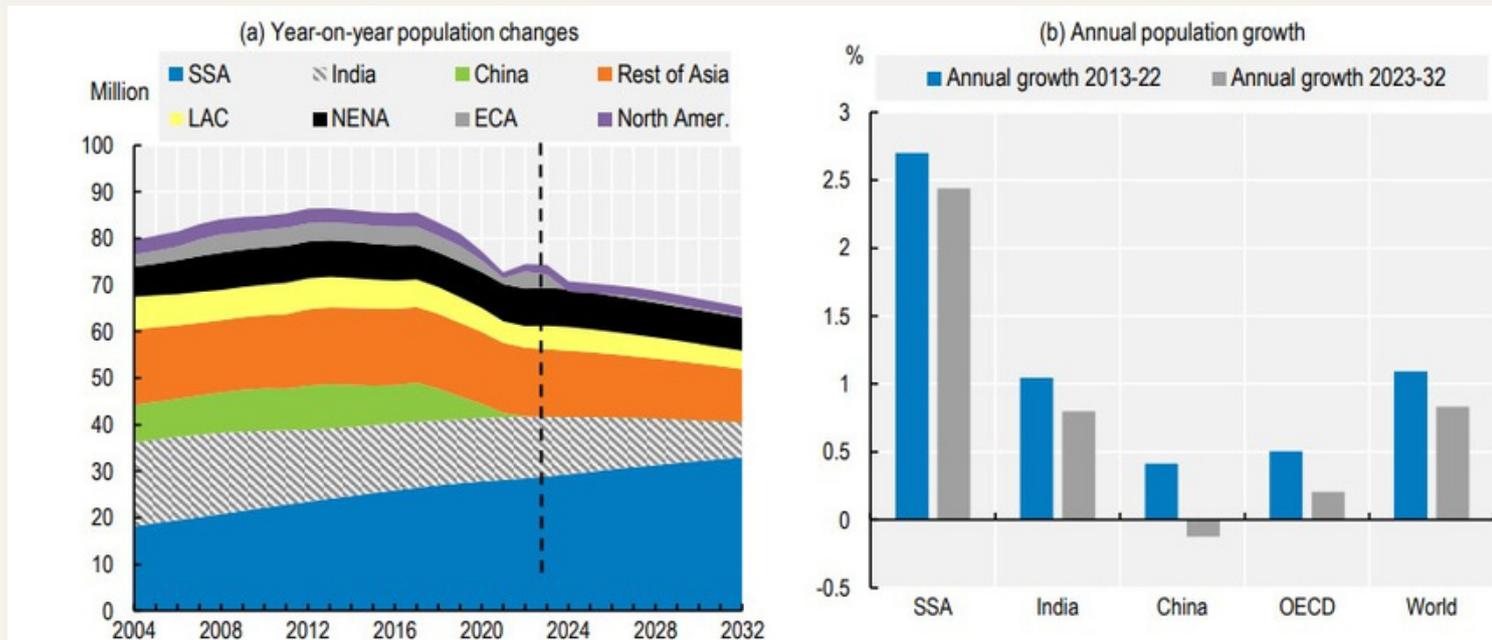
# Facts and Figures

## Worldwide perspectives

The OECD-FAO Agricultural Outlook 2023-2032 provides an assessment of the ten-year prospects for agricultural commodity and fish markets at national, regional, and global levels in a context of continued economic risks, uncertainty, and high energy prices. The report is a collaborative effort between the OECD and FAO, prepared with inputs from Member countries and international commodity organisations.

## Population growth

World population is expected to grow from 7.9 billion in 2022 to 8.6 billion people in 2032. This corresponds to an average annual growth rate of 0.8%, a slowdown compared to the 1.1% p.a. rate experienced over the last decade. Population growth is concentrated in low-income countries, particularly Sub-Saharan Africa which is expected to have the fastest growth at 2.4% p.a. over the coming decade.



Note: SSA is Sub-Saharan Africa; LAC is Latin America and Caribbean; ECA is Europe and Central Asia; NENA stands for Near East and North Africa, and is defined as in Chapter 2; Rest of Asia is Asia Pacific excluding China and India.

Source: OECD/FAO (2023), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

The population of China declined for the first time in 2022 (according to the 2022 Revision of the United Nations Population Prospects) and is expected to decline further over the projection period to 1.41 billion inhabitants in 2032. With a population of 1.52 billion people in 2032, India is expected to overtake China in 2024 as the most populous country of the world. The populations of several European countries, Japan, and Korea are expected to decline during the considered period.

## GDP growth and per capita income growth

Following a decline from 5.8% in 2021 to 3% in 2022, global GDP growth is expected to continue to slow down in 2023 and to stabilise at an average rate of 2.6% over the next decade. Over the period 2023-32, GDP will continue to grow the strongest in the Asia Pacific region, in particular in India, China and Southeast Asia. In Sub-Saharan Africa, and the Near East and North Africa, average GDP growth is projected to be higher than the global average, whereas that of Latin America and Caribbean and OECD countries is projected to be lower.

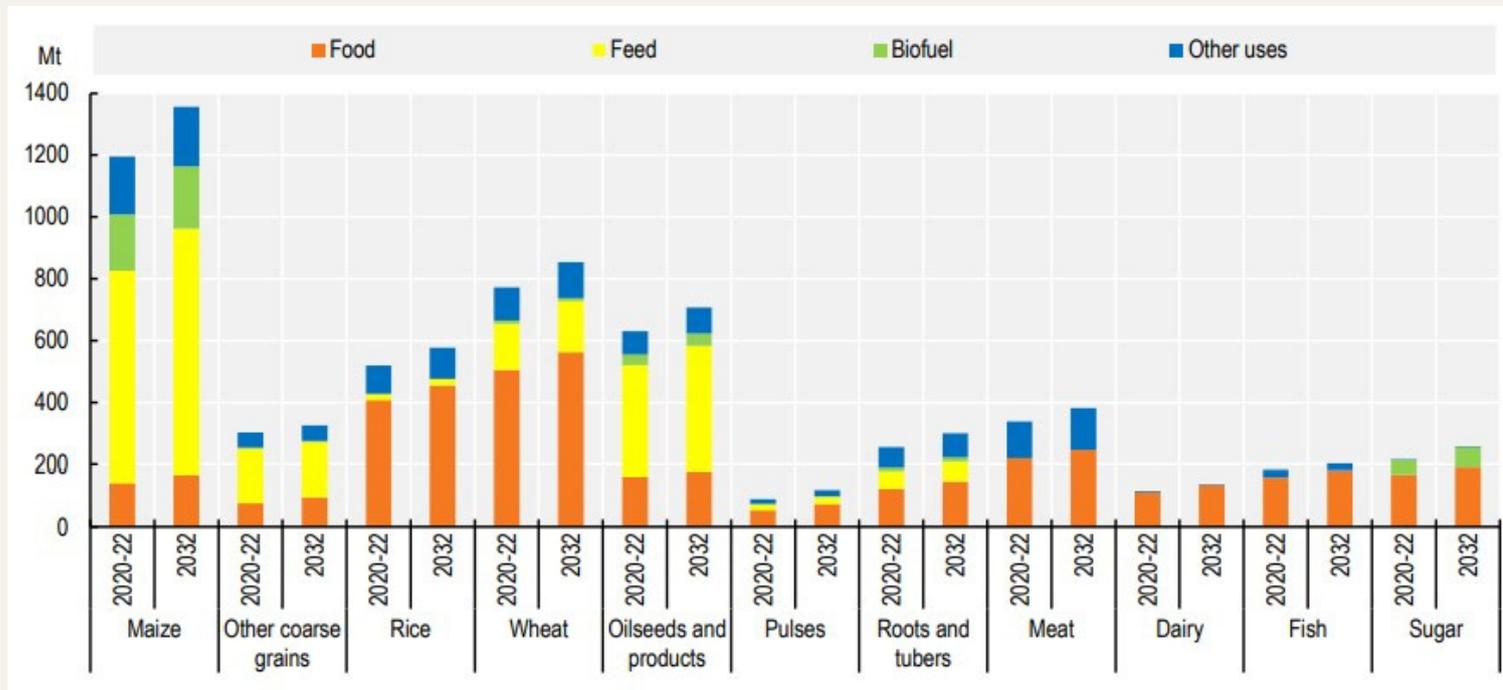
## Population and income growth remain key drivers of demand for agricultural commodities

Over the decade to 2032, the evolving energy and nutrition requirements of a growing and increasingly affluent global population are expected to be the key drivers of demand for agricultural commodities. The macroeconomic assumptions underlying the projections suggest a slowdown in global population growth alongside a decline in the population of China. Meanwhile, global economic growth will result in per capita income growth in most parts of the world. Projected rates of inflation are expected to slow down in 2023 and over the next ten years. However, economic developments and their respective impacts will vary by country. Furthermore, while global reference prices are expected to decline slightly in real terms, there is uncertainty how international price signals will transmit to domestic consumer prices and thereby impact demand at the local level. In addition, diverging population dynamics in different countries and regions, income-driven divergences in consumer preferences, and rapid urbanisation in many emerging economies will mean that consumption trends will also vary by country and region. Policy developments and social factors, alongside risks and uncertainties, are similarly likely to affect consumption to differing extents and outcomes at the local level, most importantly as income growth and distribution will continue to remain uneven across and within regions and countries.

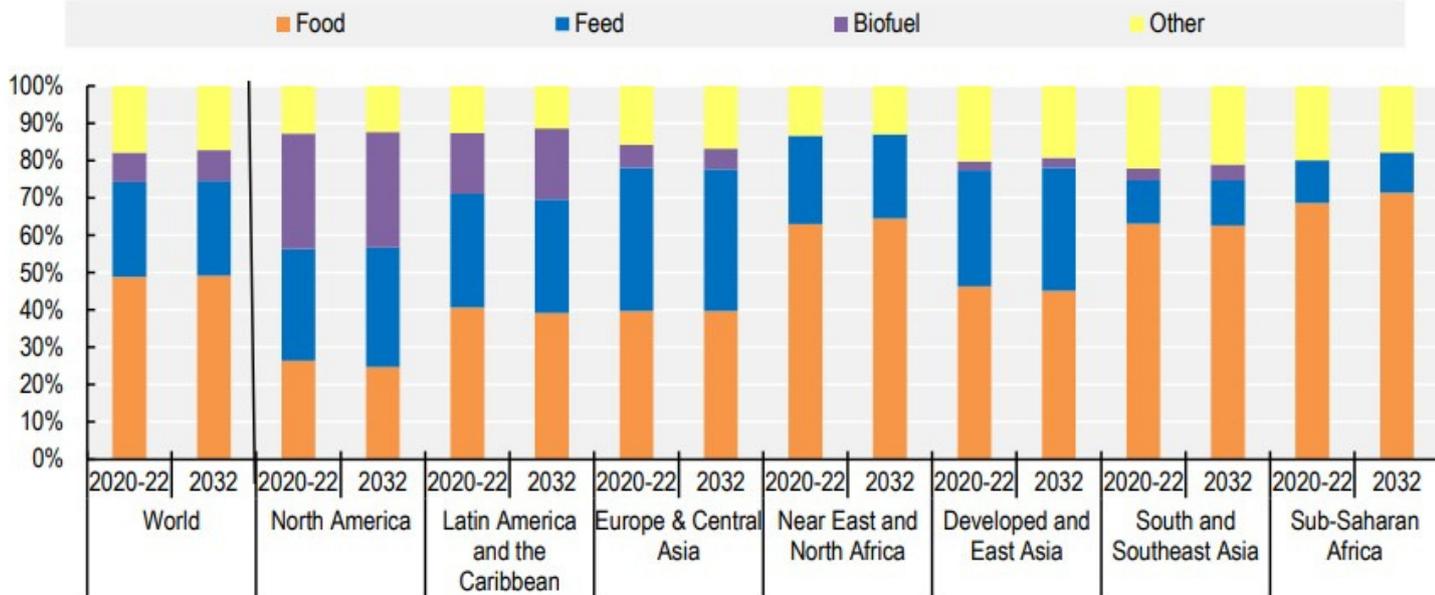
For example, in low-income countries where the share of food in household expenditures is high, income and food price shocks will have disproportionately larger consequences for consumption than in high-income countries. Preferences shaped by local culture and tradition will continue to lead to differences in demand for agricultural commodities among different regions and income classifications. Health and sustainability concerns are expected to increasingly shape the demand for food in affluent and emerging regions.

Food remains the primary use for basic agricultural crop commodities, currently accounting for 49% of quantities consumed at the global level. However, in recent decades feed and fuel uses have gained in importance. Prominently, growth in the global production of animal products has necessitated a substantially higher allocation of crops to feed, which currently accounts for 26% of total global use. Biofuels and industrial applications, meanwhile, currently consume an estimated 8% of global agricultural crop output. Amidst a globally rising production of animal products over the Outlook period 2023-2032, growth in the non-food use of crops is expected to continue to outpace growth in food use, due to intensifying livestock practices and increasing demand for biofuel. Growth in feed use will be particularly pronounced in maize and oilseeds, the two foremost feed components.

## Global use of major commodities



# Geographic differences in using agricultural commodities



## Growing differentiation between net exporting and net importing regions

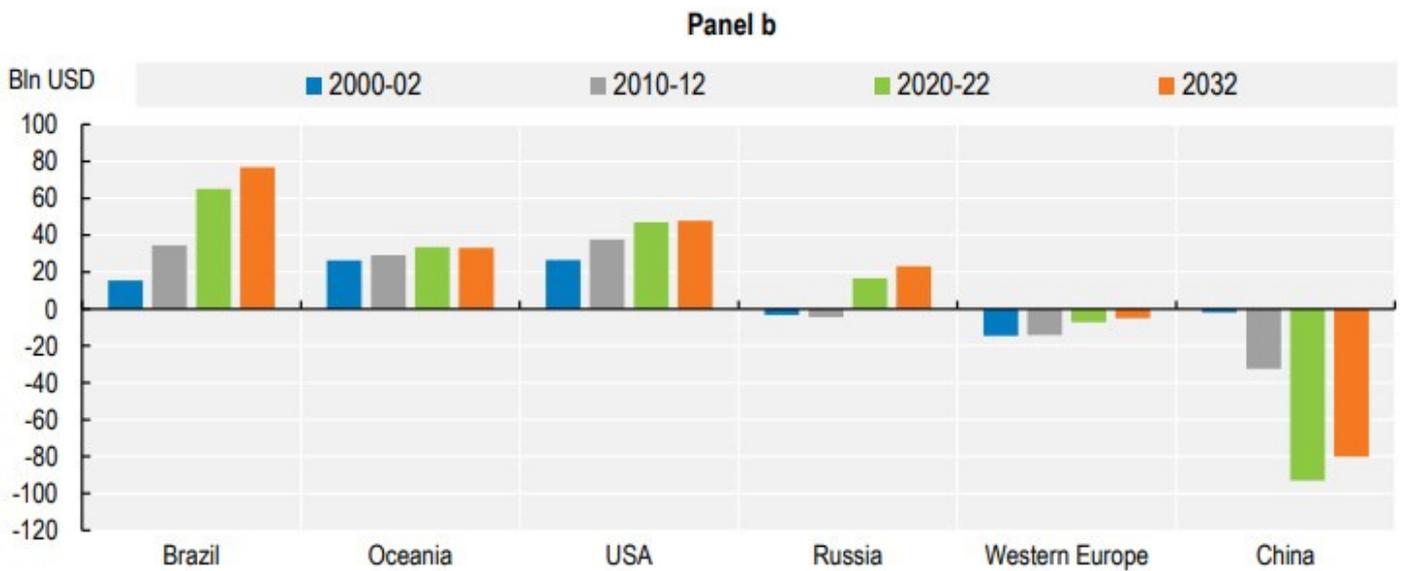
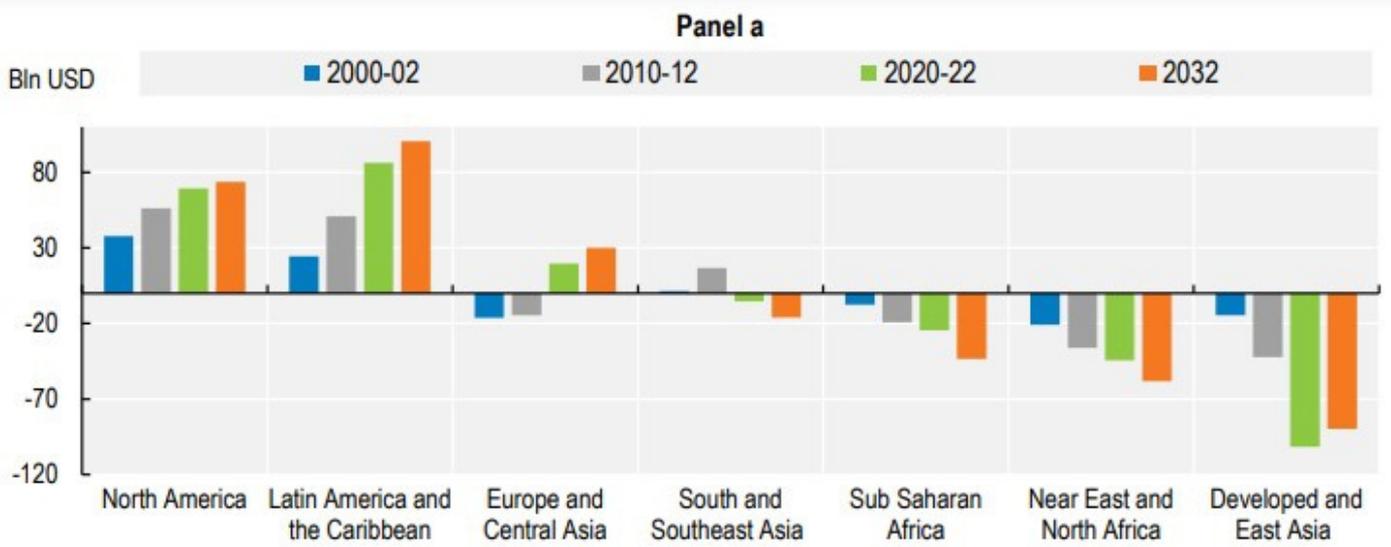
Over the coming decade, the net exporting position of the Americas and Eastern Europe Central Asia and net importing position of Asia, the Middle East and Africa are expected to deepen. The evolution of agrifood surpluses and deficits of the main regions of the world (panel a) and important trading countries (panel b) sheds light on the direction of trade that differentiates net exporters from net importers.

The Latin America and Caribbean region has experienced a vast expansion of its exports, notably from Brazil, and is projected to reinforce its position as the world's prime exporter of basic agricultural commodities. The dramatic surge in South America owes much to the spread of farming into the drylands of the cerrado in Brazil, which was not cultivated until the 1990s. The continued growth in production of soybeans, maize, protein meals, meat and raw sugar are expected to increase the net export position of the region by 17% between the baseline period 2020-22 and 2032.

Eastern Europe and Central Asia became a net exporting region in 2008. The collapse of the Soviet Union and the subsequent privatisation of state and collectively owned enterprises including farms led to significant productivity gains that boosted agricultural production. The limited domestic demand, due to stagnating population and per capita consumption, combined with a strong economic relationship with booming Asia contributed to the export expansion of the region. However, while Europe and Central Asia are projected to maintain a strong net exporting position, their past increase in trade surpluses is expected to slow down in the short run because Russia's war against Ukraine is hampering growth in agricultural production and exports from these countries, with more profound impacts on the Ukrainian agricultural sector related to limited marketing opportunities, low farm gate prices and high input costs. In the medium term, the Outlook assumes that production and exports of these two countries will return to their pre-war trends. Western Europe (panel b) is a net importing region for the agricultural commodities covered in the Outlook, but a net exporter of processed food products. Western Europe's net trade deficit will decrease due to slower demand growth.

North America is expected to remain the second largest exporter of agricultural commodities to world markets over the next ten years, but its continued strong domestic consumption growth is expected to slightly slow down the progression of its net exporting position.

In Oceania, Australia and New Zealand are traditional net exporters of agricultural commodities. Over the coming decade, the region is expected to continue maintaining their net trade position, due to continued efforts to increase its access to other market through the negotiation of preferential trade agreements.



Note: Net trade (exports minus imports) of commodities covered in the *Agricultural Outlook*, measured in constant 2014-16 USD. Net trade figures include intra-regional trade but exclude intra-EU trade. The regions Developed and East Asia, and South and Southeast Asia are defined as in Chapter 2.

Source: OECD/FAO (2023), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

## Production

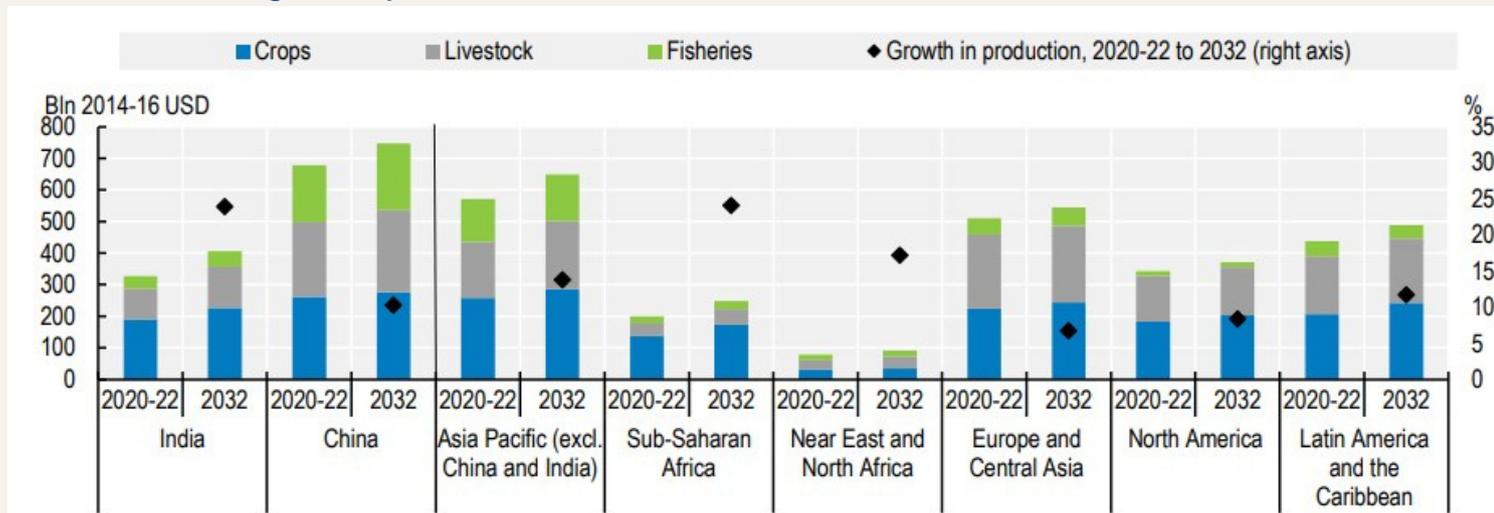
Projections for the production of crops, livestock and fish products covered by the Outlook are presented. This section also examines the underlying drivers of production, namely crop yields, cropping intensity, and agricultural land use in the crop sector, and the number of farm animals and output per animal in the livestock sector.

Over the coming decade, the global production (measured in constant prices) of crops, livestock and fish commodities covered by the Outlook is expected to increase by 1.1% p.a., a slower rate than in previous decades. The reduced growth incentives are driven by a weakening of expected gross returns for producers from both sales and due to costs developments. The proceeds of production sales are not expected to follow a sustained growth because of projected flat or slightly declining trends of world prices in real terms and slower population growth. Input costs are expected to increase, notably because of the nexus between energy and fertiliser prices and tightening of environmental regulations.

Middle- and low-income countries, including China, India and other Asian countries, will continue to drive growth (Figure 1.22). By 2032, the whole Asian region is expected to account for more than half of global crop production, almost half of livestock production, and almost three-quarters of fish production.

Production growth will be driven almost entirely by productivity in this resource-constrained region. Production in Sub-Saharan Africa and Near East and North Africa is expected to grow significantly, although from a low base. In these regions, the bulk of agricultural output comes from crops production, but higher value livestock production is expected to grow faster over the coming decade in response to a rapid population increase and urbanisation. In Sub-Saharan Africa, growth in crop production will be underpinned by a combination of area expansion, changing crop mix, and productivity gains; dairy will drive much of the growth of livestock production. In Near East and North Africa, growth in crop production will be derived mainly from productivity gains as the region is faced with severe constraints in the availability of arable land and water. Poultry will drive most of the increase in livestock production. Europe and Central Asia is expected to be the region with the slowest production growth, mostly driven by Central Asia and Eastern Europe. Growth will mainly be derived from productivity gains as the long-term decline in agricultural land-use is expected to persist, but tighter regulations related to environmental sustainability and animal welfare will place downward pressure on yield improvements. Production growth in North America is expected to be limited. Crop production is expected to grow faster than livestock production, reversing the trend of the past decade.

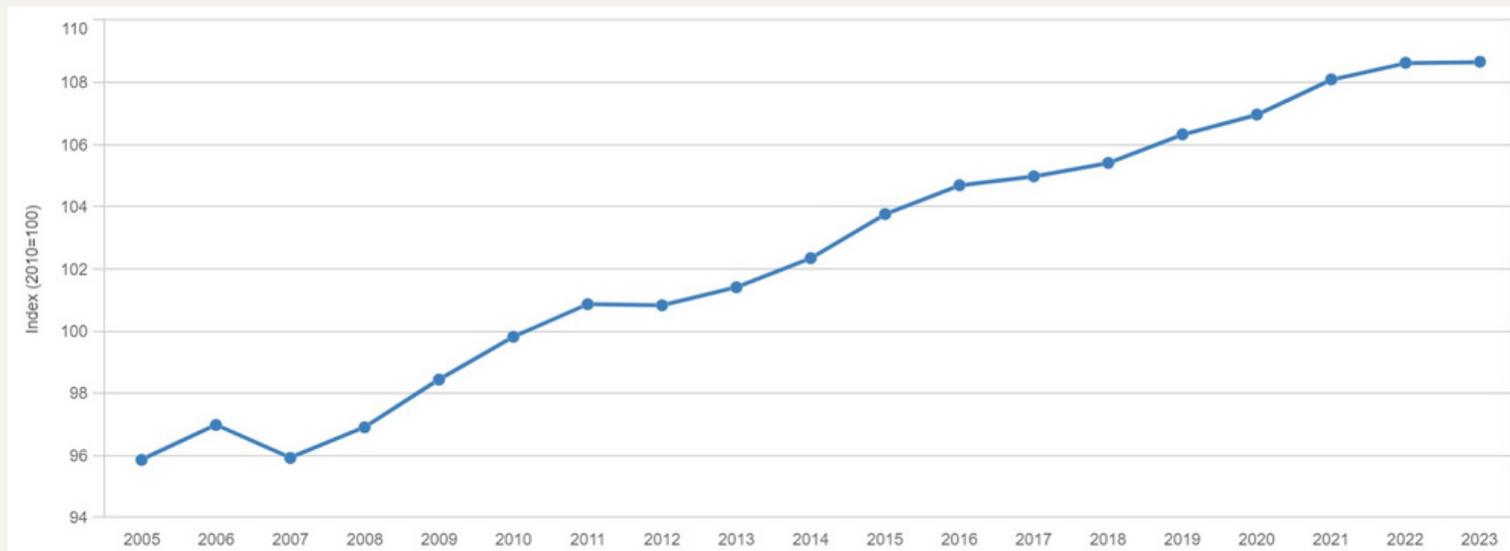
Growth is expected to come predominantly from crop production. The region's land abundance contributes to strong crop production growth, which is derived from a combination of expansion and intensification, but yield gains are expected to play a bigger role because of an expected rapid increase in fertiliser application. Despite slower growth in livestock production, the region will continue to be a large contributor to global production.



SOURCE: OECD-FAO Agricultural Outlook 2023-2032

## Agricultural Productivity

Productivity is a measure of the change in agricultural outputs (for example livestock, crops) versus the change in inputs (for example feed, land, labour, water, fertilisers, plant protection products, machinery). When the ratio improves it means more output is generated with the same level of inputs (or the same output with lower levels of inputs). Here, total factor productivity is used, which looks at all inputs and outputs, with the year of 2010 as a basis. The indicator shows that productivity keeps on increasing over time, as more output is generated while input use, especially labour use, decreases. Very recently, given high input prices and market disturbances, output and productivity growth stopped in agriculture.



# Agricultural Outlook

Area	Demand/Consumption Forecast
<b>Agricultural and forest land</b>	Unchanged between now and 2035, but there will be relative changes in the share of different types of land. Climate and weather-related challenges lead to more volatile competitiveness of the EU on global markets, and do not incentivise any cultivation of new arable land. Within arable crops, land-use shifts from cereals to soya beans and pulses are expected
<b>Yields of cereals and oilseeds</b>	Remain stable despite climate change and constraints on the availability and affordability of some agricultural inputs (e.g. plant protection products), thanks to positive developments applicable within a short time, such as precision farming, more crop rotation and improved soil health
<b>Animal Feed</b>	Decline over the coming years due to reductions in the EU's production of pigmeat, beef and also a decline in the dairy herd. A drop in crop-based feed is also expected due to a shift towards more grass-based (extensive) production systems, and towards more efficient feed conversion ratios (which are likely to be improved via genetics and better-targeted feeding systems).
<b>Sugar beet production</b>	Slowly decline, leading to lower sugar production in the EU. EU sugar consumption is also expected to decline between now and 2035 because of consumers shifting to diets with a lower sugar intake, especially by reducing the high sugar content of food products
<b>Oilseeds</b>	Remain stable, but the use of vegetable oils could decline due to a reduction in demand for biofuels, with an expected further shift away from palm oil, at the benefit of rapeseed oil.
<b>Biofuels</b>	Decrease as the decarbonisation of road transport, the use of crop-based feedstock to produce biofuels is limited by a production utilisation cap set in 2020, and the use of advanced biofuels is expected to grow.
<b>Dairy sector</b>	Continue to increase in the coming years, albeit at a slower pace than in the past, with high quality and sustainability standards generating more added value in the sector.
<b>Beef</b>	Remains challenged by high price, consumer health and sustainability concerns. This, combined with low profitability, stricter environmental and climate regulatory framework, is expected to lead to further production decline by 2035.
<b>Pigmeat</b>	Challenged by sustainability and health concerns as well and is therefore projected to decrease between now and 2035. Intensive pigmeat production systems are likely to face further societal criticism. African Swine Fever is assumed to remain in the EU, with no major or uncontrolled outbreaks forecast.
<b>Poultry</b>	Could continue benefitting from a relatively healthier image, absence of religious constraints, and a cheaper price. Together with further export opportunities, this would push poultry production upward between now and 2035, albeit at a lower yearly growth rate than seen in the past decade.
<b>Sheep and goat meat</b>	Decline continue, following a decline in sheep and goat herds. These declines are expected despite coupled income support and favourable prices, although these prices are likely to increase more slowly that was the case in the past decade.
<b>Olives for oil</b>	Area of land given is forecast to remain stable, but climate change will lead volatility in yields and oil quality. These negative impacts could be reduced by both the introduction of more resistant varieties and the changes in production systems (towards more intensive ones), together with research and innovation, could reduce the negative impacts.
<b>Apples, peaches, nectarines, and tomatoes</b>	challenges related to extreme weather events, increasing energy costs, limitations on the use of pesticides, and pest outbreaks. Because of these factors, the EU apple sector could lose competitiveness and reduce its harvested area.
<b>Wine</b>	Continue to decline by 2035. Moreover, reduced availability of plant protection products, further irrigation restrictions in some EU countries and volatility due to climate change could reduce both the area and yields of vineyards, leading to large fluctuation and on average lower production volumes.

SOURCE: European Commission

# Agricultural Sector Sustainability



Global direct agricultural emissions are set to increase by 7.5% over the coming decade, while the projected increase in agricultural production is 13%. Livestock production will account for 80% of this increase. Geographically, most of the increase in emissions is projected to occur in middle and low-income regions due to the higher growth in ruminant production in systems that are emission intensive.

Synthetic fertilisers are an important source of direct GHG (greenhouse gas) emissions. High energy prices, domestic policies, and developments in market access will shift the use of fertilisers at the global level. Country-level efficiencies in applying fertilisers to agricultural soils by, for example, applying a new generation “special fertiliser products”, such as stabilised nitrogen fertilisers, slow and controlled-release fertilisers, and water-soluble fertilisers, can increase nutrient use efficiency and reduce the need for application; thus lowering GHG emissions. In some countries, governments strongly encourage the use of special fertiliser products or organic fertilisers. In others, farmers have adopted these products without government intervention because of the economic and environmental benefits.

Rice cultivation is another major source of GHG emissions because irrigated paddy fields emit a lot of methane. The projected increase in rice production, however, will be largely the result of yield improvements with unchanged paddy areas, thereby largely limiting any increase in GHG emissions.

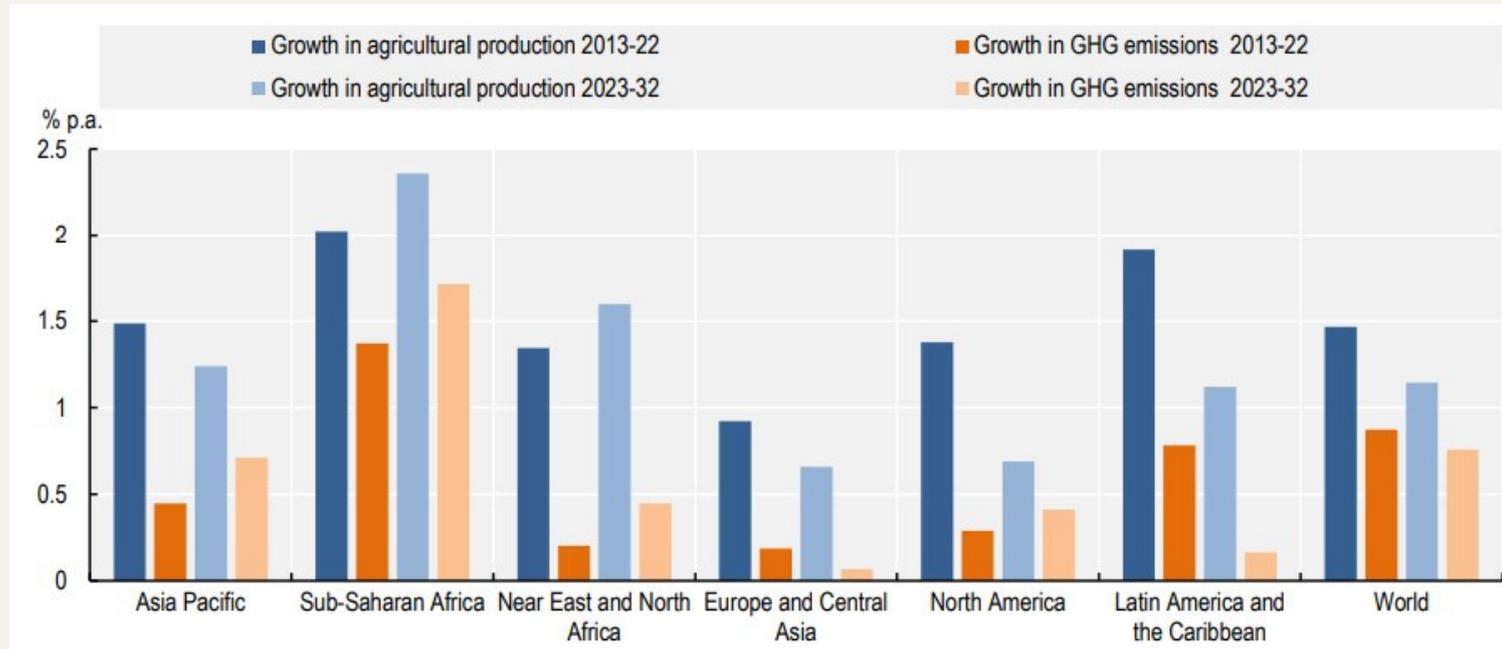
At the global level, growth in direct GHG emissions from agriculture will be lower than in the previous decade and lower than the projected growth in agricultural output, indicating a faster decline in the carbon intensity of agricultural production. This will be the case in Europe, Central Asia, Latin America and the Caribbean due to yield improvements and a declining share of ruminant production. In other regions, the growth of GHG emissions is projected to be greater than in the previous decade.

# Agricultural Sector Sustainability



In low- and middle-income countries in Asia Pacific and Sub-Saharan Africa, increased GHG emissions are due to the projected higher output growth in these regions. While important efforts are undertaken in these regions to make production systems more sustainable, on average those tend to be more emission intensive than in high-income countries. By 2032, Sub-Saharan Africa will experience the highest growth in direct GHG emission per year (1.7%), accounting for 16% of global direct GHG emissions from agriculture but only 7% of crop and livestock production. In Europe and Central Asia, annual direct GHG emissions from agriculture are projected to be divided by three, while agricultural output is expected to increase by 7%. Further reductions in the carbon intensity of agricultural production could be achieved by the large-scale adoption of emission-reducing technologies and agricultural practices.

## Annual change in agricultural production and direct GHG emissions, 2023 to 2032



SOURCE: OECD-FAO Agricultural Outlook 2023-2032

## Focus on Europe (EU 27)

Agriculture occupies a unique position at the heart of the European Union's society, environment and economy.

The common agricultural policy (CAP) is built around three main goals to achieve a sustainable system of agriculture in the EU:

- economic sustainability,
- environmental sustainability, and
- the social sustainability of farms.

To meet these three main goals, EU countries use a wide range of targeted actions, which aim to address each country's specific needs and make up CAP Strategic Plans. Through these plans, EU countries provide income support to farmers, support them in the transition towards sustainable production, and contribute towards the ambitions of the EU Green Deal.

### Environmental sustainability in the CAP

The common agricultural policy (CAP) has three clear environmental goals, each of which are echoed in the [European Green Deal](#) and [Farm to Fork strategy](#):

- tackling climate change;
- protecting natural resources;
- enhancing biodiversity.

Each of these goals are supported by the CAP's promotion of [organic farming](#) and the responsible [management of inputs](#) like pesticides and fertilisers.

The CAP aims to reach its environmental goals in a way that is socially and economically sustainable for farmers, rural communities, and the EU as a whole.

### Environmental measures in the CAP

Measures that encourage green farming and enforce environmental rules form a central part of the CAP:

- [cross-compliance](#) standards link financial support to EU rules on the environment, as well as human, plant and animal health;
- [green direct payments](#) put in place mandatory actions (maintaining permanent grassland, crop diversity and ecological focus areas), each geared towards protecting the environment and tackling climate change;
- [rural development](#) policy supports investments and farming activities that contribute to climate action and the sustainable management of natural resources.

## Actions under the CAP Strategic Plans

EU countries' measures detailed in the CAP Strategic Plans cover various areas of environment, climate change and animal welfare actions, which are the following:

- a. Climate mitigation – including reduction of GHG emissions from agricultural practices, as well as maintenance of existing carbon stores and enhancement of carbon sequestration
- b. Climate change adaptation – including reduction of GHG emissions from agricultural practices, as well as maintenance of existing carbon stores and enhancement of carbon sequestration
- c. Protection or improvement of water quality – and reduction of pressure on water resources
- d. Prevention of soil degradation – soil restoration, improvement of soil fertility and of nutrient management
- e. Protection of biodiversity – conservation or restoration of habitats or species, including maintenance and creation of landscape features or non-productive areas
- f. Actions for a sustainable and reduced use of pesticides – Actions for a sustainable and reduced use of pesticides
- g. Actions to enhance animal welfare – or address antimicrobial resistance

## Climate change and agriculture in the EU

Agriculture has a positive and important role to play in climate change mitigation: the crops, hedgerows, and trees found on farmland sequester carbon from the atmosphere through photosynthesis, while properly managed soils provide carbon storage.

However, agriculture also accounts for around 10% (438 994 MtCO<sub>2</sub>e, 2017) of total greenhouse gas emissions in the EU, coming behind the energy, transport, residential, and commercial sectors. Two types of greenhouse gas in particular are associated with agricultural practices:

- methane (CH<sub>4</sub>) – from livestock digestion processes, manure management, and rice cultivation;
- nitrous oxide (N<sub>2</sub>O) – from agricultural soils with organic and mineral nitrogen fertilisation, and manure management.

In the EU, the agricultural sector reduced its greenhouse gas emissions by 19% between 1990 and 2017. Emissions of methane due to enteric fermentation from the digestive system of cattle fell by 21% over the same period.

Through the common agricultural policy (CAP), the European Commission aims to ensure that agriculture makes a strong contribution to the EU's climate policies. As part of the European Green Deal, the Farm to Fork strategy outlines the framework for a transition towards a sustainable food system, in which farmers can continue to meet society's demands for food while also protecting the climate. The CAP is the key tool to support farmers in this transition.

## CAP actions

The CAP promotes sustainable agricultural systems in the EU, enabling farmers to:

- provide safe, healthy, and sustainably-produced food for society;
- earn a stable and fair income, taking into account the full range of public goods they provide;
- protect natural resources, enhance biodiversity, and contribute to the fight against climate change.

Through a number of rules and measures, the CAP provides support for climate action in agriculture and forestry.

### Cross-compliance

o Under cross-compliance rules, all beneficiaries of the CAP have their payments linked with a set of statutory management requirements (SMRs) and good agricultural and environmental conditions (GAECs). Cross-compliance rules safeguard natural resources under increasing pressure from climate change, while specific rules to protect soil – such as the requirement for minimum soil cover under GAEC 4 – contribute to carbon storage.

### Green direct payments

o Under current CAP rules, farmers receive green direct payments when they maintain permanent grassland, undertake crop diversification, and dedicate 5% of arable land to ecological focus areas (EFAs).

o The requirement for permanent grassland can help to preserve organic carbon in soil, while some of the options for EFAs – such as field margins, agro-forestry, and green cover – can also contribute to carbon sequestration.

### Rural development

o One of the six priority areas of rural development (the so-called 'second pillar' of the CAP) is to “promote resource efficiency and support the shift towards a low-carbon and climate resilient economy in the agriculture, food and forestry sectors”.

In their rural development programmes, EU countries can contribute to this priority area through measures that:

- facilitate the supply and use of renewable sources of energy;
- reduce greenhouse gas and ammonia emissions from agriculture;
- foster carbon conservation and sequestration in agriculture and forestry.

EU countries can direct a number of measures towards climate action and adaptation, such as:

- agri-environment-climate measures (AECMs), under which farmers can commit to climate friendly practices and management systems, such as agro-ecology or agro-forestry;
- investments in physical assets can be directed towards manure storage facilities that reduce ammonia emissions;
- measures to support forestry development and management enhance the important role of forests in carbon sequestration;
- a risk management measure can be used to back mutual funds for adverse climatic events;
- measures for cooperation, knowledge transfer and advisory services foster knowledge and innovation on climate-relevant farming practices.

The European network for rural development facilitates knowledge-sharing and cooperation on the bio-economy and climate action in rural areas.

## Enhancing agricultural biodiversity

The common agricultural policy aims to enhance the variety of species, habitats and landscape features found in the farmland ecosystems of the EU.

Agricultural biodiversity encompasses all wild and domesticated forms of life found on farms, from plant varieties and breeds of animals, to soil organisms, pests and pollinators.

The common agricultural policy sets out to safeguard biodiversity within sustainable systems of farming; ensuring that farmers can produce food and earn a living whilst protecting agricultural ecosystems.

Agriculture and biodiversity are strongly interrelated:

Biodiversity relies on agriculture: In the EU, agriculture supports and shapes a wide variety of plants, animals, fungi and microorganisms. According to the European environment agency (EEA), 50% of all species in the EU rely upon on agricultural habitats. The EEA identified 63 habitat types that depend upon, or can profit from, agricultural activities – mainly low-intensity grazing and mowing.

Agriculture relies on biodiversity: The production of food and fibre depend upon a variety of genetic resources and the services they provide, such as soil and water conservation, maintenance of soil fertility, resistance to pests and diseases, and pollination. A number of these services are also essential for mitigating and adapting to climate change and environmental pressures.

However, agricultural biodiversity is in decline across the EU. While there are several contributing factors – including land use change, pollution, climate change, and the impact of invasive species – much of the decline is directly related to agriculture: the abandonment of agricultural activity is a major risk for biodiversity decline, leading to the disintegration of farmland features, landscape homogenisation, and soil degradation;

practices associated with intensive farming systems can be harmful to biodiversity, e.g., specialisation; under-rotation; overuse of fertilisers and pesticides; heavy mechanisation;

the removal of landscape features and loss of habitats such as hedges, stone walls, terraces, rough grass margins, woodlots, trees, ponds, old buildings.

Through the common agricultural policy (CAP), the European Commission aims to help farmers:

- restore, conserve and enhance biodiversity in their farms;
- preserve and maintain landscape features;
- conserve and valorise diverse genetic resources;
- facilitate the wide array of ecosystem services made possible by biodiversity.

Agricultural biodiversity is a broad term that includes all components of biological diversity of relevance to food and agriculture, and all components of biological diversity that constitute the agro-ecosystem: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes. (Conference of the Parties (COP) to the Convention on Biological Diversity, COP Decision V/5)

## EU biodiversity strategy

The European Commission aims to ensure that agriculture can make a strong contribution to the EU's [Biodiversity strategy](#), one of the central components of the European Green Deal. The biodiversity strategy sets out a number of key targets related to agriculture:

- expanding the [Natura 2000 network](#) so that 30% of EU's land is protected;
- placing at least 10% of agricultural area under high-diversity landscape features;
- placing at least 25% of agricultural land under organic farming;
- reducing nutrient loss from fertilisers by at least 50% and reducing the risk and use of chemical pesticides by 50%.

The CAP promotes sustainable agricultural systems in the EU, enabling farmers to provide safe, healthy, and sustainably-produced food for society; earn a stable and fair income, taking into account the full range of public goods they provide;

- protect natural resources, enhance biodiversity, and contribute to the fight against climate change.
- The rules and measures of the CAP help farmers to protect local agroecosystems and encourage the uptake of biodiversity-friendly practices.

## Protecting natural resources in the CAP

Soil, water and air are essential to the functioning of agriculture and forestry. The common agricultural policy ensures that these natural resources are managed responsibly across the EU.

### Healthy soil

The common agricultural policy ensures compliance with rules to protect soil and encourages farmers to take extra steps to improve soil management.

Soil is an essential, non-renewable resource for agriculture, providing the basis for the production of food, fibre, and other resources for a circular bio-economy.

Soil also supports biodiversity, plays a central role in carbon sequestration and storage, and provides a number of other ecosystem services, such as water regulation and nutrient cycling.

To protect these vital functions and ecosystem services, the common agricultural policy (CAP) supports sustainable soil and land management.

## Soil and agriculture in the EU

With farmland accounting for roughly 50% of the EU's surface area, agriculture is closely linked with soil health. However, soil in the EU is facing a number of challenges, including erosion, degradation, and desertification, as well as a decline in organic matter and loss of biodiversity.

Many of the issues threatening soil health are related to agriculture and the pressure to meet rising food demands, such as:

- degradation and decline caused by intensive practices;
- compaction under heavy machinery and inappropriate agronomic land cultivation practices;
- damage to biodiversity caused by monocultures and other land use and management practices;
- pollution from chemicals (e.g. pesticides, heavy metals, pharmaceuticals, plastics, etc.);
- land abandonment and neglect.

In order to address these challenges, the CAP ensures that agriculture is in line with the EU's soil protection policies, as set out in the current soil thematic strategy.

Sustainable soil management is also essential for many strategies and priorities of the European Green Deal, including:

- the farm to fork strategy;
- the zero pollution action plan;
- the ambitions for climate change mitigation and adaptation;
- the biodiversity strategy, which includes the EU soil strategy;
- and the organic action plan.

## Safe water

The common agricultural policy helps to protect the essential role that water plays for food, farming, and the environment.

Clean and plentiful water is an essential natural resource for society, providing the basis for human health and quality of life.

In order to protect this resource, the common agricultural policy encourages farmers to use their water supply in a safe and sustainable way.

## Water and agriculture in the EU

Agriculture is heavily reliant on water, requiring a steady and safe supply to ensure the health and wellbeing of crops, livestock, and all forms of life within an agricultural ecosystem. However, water is vulnerable to a number of challenges, often associated with unsustainable management practices.

Such challenges include:

- pollution from pesticide residues, fertilisers, and chemicals;
- heavy sedimentation caused by soil erosion;
- overuse, unsustainable abstraction.

Rising global temperatures bring additional challenges for agricultural water use, with heightened risks of drought in some areas and flooding in others.

Through the common agricultural policy (CAP), the European Commission aims to ensure that agriculture makes a strong contribution to the EU's water policies.

Safeguarding water is also a key aspect of the European Green Deal, particularly with regard to the zero pollution ambition for 2030 and the achievement of a sustainable food system, as set out in the farm to fork strategy.

## Clean air

The common agricultural policy sets out to safeguard air quality in the EU by helping farmers to control emissions of harmful substances into the atmosphere.

Fresh, clean air is a basic necessity for human, plant, and animal health, and a valued feature of life in t/he EU.

The common agricultural policy supports farmers who protect air quality as part of a sustainable agricultural system.

## Clean air and agriculture in the EU

Along with soil and water, clean air is an essential natural resource for agriculture.

However, agriculture is a significant source of air pollution:

- agriculture accounts for around 93% of total ammonia emissions in the EU; linked with livestock farming and the use of synthetic nitrogen ammoniacal fertilisers (in particular urea), emissions from this pollutant can lead to the eutrophication of water and acidification of soils;
- methane, a by-product of enteric fermentation in livestock, is the precursor of ozone ground level formation, which can bring damage to crops;
- particulate matter such as PM10 comes from burning biomass residues and forest fires.

Through the common agricultural policy (CAP), the European Commission aims to keep agriculture in line with the EU's clean air policies, including the goals of the Clean Air Programme for Europe and the commitments set out in National Air Pollution Control Programmes (NAPCP).

The CAP also ensures that agriculture can make a strong contribution to the zero pollution ambition of the European Green Deal, which sets out to achieve a toxic-free environment in the EU.

Reducing air pollutants from agriculture is also an important part of a sustainable food system, as outlined in the farm to fork strategy.

## Sustainable agricultural practices and methods. List of potential agricultural practices that eco-schemes could support

The common agricultural policy (CAP) is instrumental in managing the transition towards a sustainable food system and in strengthening the efforts of European farmers to contribute to the EU's climate objectives and to protect the environment. Eco-schemes are a new instrument in the CAP to support this transition. EU countries set eco-schemes in their CAP Strategic Plans. The Commission assessed and approve them as key tools for the CAP to deliver on the Green Deal targets.

## Eco-schemes at a glance: Agricultural practices that could be supported by eco-schemes have to meet the following conditions:

- they should cover activities related to climate, environment, animal welfare and antimicrobial resistance;
- they shall be defined on the basis of the needs and priorities identified at national/regional levels;
- their level of ambition has to go beyond the requirements and obligations established under the baseline (including conditionality);
- they shall contribute to reaching the EU Green Deal targets.

## EU Green Deal targets

·Reduce by 50% the overall use and risk of chemical pesticides and reduce use by 50% of more hazardous pesticides by 2030

·Achieve at least 25% of the EU's agricultural land under organic farming and a significant increase in organic aquaculture by 2030

·Reduce sales of antimicrobials for farmed animals and in aquaculture by 50% by 2030

·Reduce nutrient losses by at least 50% while ensuring no deterioration in soil fertility; this will reduce use of fertilisers by at least 20 % by 2030

CAP Strategic Plans put into practice enhanced conditionality, eco-schemes, farm advisory services as well as agri-environmental and climate measures and investments to address the Green Deal targets, in particular those stemming from the Farm to Fork Strategy and the Biodiversity Strategy for 2030, and to fulfil the climate and environmental specific objectives of the CAP.

SOURCE: OECD-FAO European Commission

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Requirement	SkyMinder Solution	Description
Know business partners and risk level <ul style="list-style-type: none"> <li>- have on board new suppliers</li> <li>- understand in depth customers creditworthiness</li> </ul>	<b>Full Report, Slim Report, Quick Report</b>	Information, with different level of details, related to all companies in the world, including firmographics, credit limit, risk indicator, management, shareholders, negative events etc.
Receive immediate notification with related details if a change affects a company	<b>Full Monitoring</b>	Detailed information about changes affecting a company as soon as happened. Combined possibility to request for free updated report.
Be alerted if there is change in company's information	<b>Alert</b>	Information related to the area involved by a change as soon as an event happened.
Periodically checks if there are changes involving companies	<b>Planned Revision</b>	Scheduled revision with updated report including company's changes if applicable
Obtain documents from Official Registry and LEI repository	<b>Official Registry and LEI</b>	Product range including documents coming from public sources or from LEI Registry
Company ownership overview	<b>Verification Report</b>	List of shareholders to understand company's structure
Compliance requirements and fraud checks	<b>Compliance Report and Extended Check Report</b>	Anti-Bribery and Money Laundering lists checks related to financial crimes.
Risk of Cyber attack	<b>Cyber Risk Report</b>	Assess the level of risk related to a business partner in being involved in a cyber attack
Understand overall value of intangible assets of a company	<b>Patent Due Diligence Report</b>	Patent Asset Overview with geographical coverage, remaining life of active patent assets, high-value patent assets, technology and patent deployment, technology timeline, peer comparison, key inventors.