Regional outlook: Europe and Central Asia

The *Outlook's* regional briefs highlight broad trends for the regions defined by the FAO in the implementation of its global work plan. Recognising the regional diversity, the intention is not to compare results across regions. Instead, these briefs illustrate some of the latest regional developments, highlighting responses to global challenges and emerging trends within them and relating these to the main messages of the *Outlook*. The assessments generally compare the end point of the *Outlook's* projection (2031) to the base period of 2019-21. This year, the large and diverse Asia Pacific region has been disaggregated into two separate briefs: Developed and East Asia, and South and Southeast Asia.

The impact of the COVID-19 pandemic, which is still playing out globally, and the response to it, differs across regions. While the briefs do not contain a specific quantitative assessment of the pandemic's impact, they reflect the latest available macro-economic projections and the extent to which the actions imposed to curb the spread of COVID-19 influenced this environment. Similarly, the impact of Russia's war against Ukraine may affect the various regions in the short term, but the briefs do not provide any quantitative analysis as to this impact. Consequently, the trends and issues presented in this chapter are those which are expected to underpin the *Outlook* as economies re-emerge from these recent unexpected shocks and assume that the effects on food, feed and fuel production, consumption and trade will gradually moderate.

Background

A highly diverse region where Russia's war against Ukraine will dominate developments

The Europe and Central Asian[1] region spans two continents and includes a range of countries at various stages of development, which exhibit significant differences in terms of demographics, agricultural resources and public policies. Major agricultural producers in the region include the European Union, United Kingdom, Russia, Ukraine, Türkiye, and Kazakhstan. The region is home to 12% of the world's population, but the evolution of population dynamics differs across the spectrum of countries. Overall, the region's population is expected to remain fairly stable, only increasing by 1% over the next decade. This reflects stability in Western Europe, a decline in Eastern Europe and growth of 1% p.a. in Central Asia. The region is highly urbanised and by 2031 75% of its population will live in urban environments.

Average income in the region is over USD 26 000 per capita per year, but there are substantial differences across countries. Income levels range from just over USD 38 000 per capita per year in the highly developed economies of Western Europe to USD 12 250 per capita in the resource dependant eastern regions to merely USD 5 000 per capita per year in central Asia. In 2020, the COVID-19 pandemic and the restrictions imposed to curb its spread led to an average decline of 5.6% in real per capita GDP in the region, though some countries were affected more than others due to differences in approaches to managing the virus. After a firm rebound in 2021, which saw growth of 5%, the region is facing a renewed

slowdown in 2022 as the ongoing war continues to unfold. While the magnitude and reach of the impact will depend on its duration and the outcome of the aggression, it has already unleashed a humanitarian crisis and will certainly influence growth prospects within and beyond the region. Apart from direct impacts of the war, the region's dependence on Russia for energy, fertilisers and cereals will increase its vulnerability to disruptions. Remittances from Russia to Central Asia may also be affected. The ongoing war will dampen the medium term projections that, under baseline assumptions, could expect to record growth in real per capita income in the region of 1.8% p.a.

At the height of the COVID-19 pandemic, agriculture in the region already faced many challenges, including logistical bottlenecks, workforce shortages and changes to the quantity and composition of demand. Having successfully navigated many of them, the Russian aggression against Ukraine adds another layer of complexity and significant uncertainty in 2022 and beyond. Russia is a major supplier of inputs to agricultural production to the rest of Europe and Central Asia, and to many other countries outside the region. Both Russia and Ukraine are also significant contributors to agricultural exports and prolonged constraints to production and exports will have a substantial impact on the sector. At the same time, the two countries are also key importers of several agri-food products from other countries in the region which will find it difficult to locate alternative markets at short notice.

The share of primary agriculture, forestry and fish production in total GDP ranges from just 1.6% in the European Union, to 12% in Ukraine. It is estimated that the share of food in household expenditures averaged about 10% in the region in 2019-2021, from around 6% for United Kingdom to around 17% in Ukraine.[2] A wide disparity is also present in terms of growth in total factor productivity within the region: in Western Europe TFP growth was just 6% in the decade up to 2019, while it was almost 50% in Eastern Europe, marked by a large increase in the productivity of labour.

The region produces 16% of the global value of agricultural and fish production, a share which could decline to 15% by 2031, largely due to stagnation in Western Europe. Crop production averages around 56% of the net value of total production, fish 8% and livestock 36%. Whereas the region accounted for 11% of the total growth in the global net value of agriculture and fish in the last decade, it constituted 38% of growth in global exports. This growing export orientation was largely driven by Eastern Europe, where productivity levels in both the crop and livestock sectors have improved, but with a fairly static population and relatively mature consumption levels demand growth has been weak. At least in the short term, the war will likely reverse this trend, as doubts are already apparent on the ability to plant, harvest and process agricultural products in Ukraine in 2022. Infrastructure destroyed as a result of the war may take years to rebuild, raising challenges with market connectivity and doubts as to when full productive capacity would be restored. The extent to which such changes may persist in the medium term remains unclear and will ultimately depend on what resolution emerges from the war. The duration of sanctions imposed on Russia will be an important factor affecting trade in the region – as will Russian embargoes on imports from the European Union, which have been renewed constantly since 2014 as well as the future trade arrangements between the United Kingdom and the European Union

Relative to other regions, livestock and animal products contribute significantly, both from production and consumption perspectives. They constitute more than one third of the net value of agriculture and fish production and comprise 26% and 53%, respectively, of total calorie and protein availability. The European Union is a major producer, consumer and trader of milk and dairy products, and while its share of global milk production continues to decline, production and trade of high value products such as cheese and butter are growing. Per capita cheese and butter consumption is six times and three times higher than the world average, respectively.

Within the European Union, environmental sustainability is increasingly prioritised, both from a consumer and policy perspective. For instance, the Farm to Fork Strategy, as part of the European Green Deal, is an inclusive growth strategy seeking to promote fair, healthy, environmentally friendly and sustainable food systems. In future, this may influence demand, trade flows, as well as the rate of productivity and

production growth in the region. Technological progress and its adoption, including digital technology, will be critical to achieve this aim.

Amongst the regions included in this *Outlook*, Europe and Central Asia faces the most uncertainty because of the ongoing war. The magnitude and duration of the impact will only become clear in due course. The *Outlook* assumes implicitly that productive capacity is fully restored in the medium term, resulting in further growth of the region's positive trade balance by 2031. However, prolonged war in the Black Sea region could result in a very different outcome, given its contribution to production and exports within Europe and Central Asia. Moreover, the extensive destruction of infrastructure, the loss of lives and displacement of labour, will require considerable investments to restore agro-food chain capacity. This could take many years, perhaps even decades, to return to normality and might well result in a marked change in the structure of the sector.

Production

Productivity the key to growth in the medium term

The net value of agriculture and fish production (net of feed and seed inputs) is projected to grow 8% by 2031 compared to the average for 2019-21, with Western Europe remaining largely unchanged, growth in Eastern Europe of 13% and Central Asia of almost 28%. Eastern Europe's strong growth, which is highly uncertain given that it does not fully account for a prolonged impact from the current war, will be led by Ukraine, Türkiye and Russia at 5%, 20% and 11%, respectively. In both Ukraine and Russia, growth is led by the crop sectors. In Türkiye, however, both crop and animal production growth are strong, but the value of animal production is expected to grow faster at than that of crops (24% and 20%, respectively) by 2031.

The long-term reduction in agricultural land use is expected to continue in the future, albeit slowly, suggesting that further growth in the sector will be underpinned by productivity gains. While total land use is trending downward, some reallocation is expected between pasture and crop land. Land used as pasture is expected to contract by 0.8% by 2031, double the rate of contraction expected for land used for crop production.

The value of crop production in the region is expected to expand by 10% over the next ten years, accounting for more than 71% of the region's growth in agricultural and fish production. While additional land will be used for crop production, productivity gains will also contribute significantly to this growth. The net value of production per hectare of cropland is expected to rise by an annual average of 1.1%, reflecting a combination of land intensification and yield gains. The crop area harvested is expected to expand by nearly 8.8 Mha, compared to a reduction of 1.5Mha in cropland use. Intensification results in additional area harvested across Western and Eastern Europe. Yield gains are also expected for all major crops, ranging from 3% for wheat, to around 5.9% for maize and oilseeds.

The bulk of crop production growth from the region is underpinned by rising cereal and oilseed output in the Black Sea region. Given the *Outlook's* assumption that productive capacity is restored in the medium term, Russia and Ukraine are projected to sustain robust growth in maize, wheat, soybean and other oilseeds, increasing their combined share to 41% for maize, 39% for wheat and 54% for all oilseeds. Maize production will grow most among all crops in both Russia and Ukraine, with significant expansion also expected in wheat and other oilseeds. Despite area expansion in both countries, yield improvements will drive the bulk of production gains by 2031. Their combined share of 82% in additional production of both maize and wheat projected for the total region by 2031 underscores the extent of risk and uncertainty associated with a prolonged war.

Livestock production is projected to grow at a slower rate than crops, at only 0.4% p.a. over the next decade. Western Europe still accounts for the bulk of livestock in the region, but as the transition to environmental sustainability continues, a modest contraction over the coming decade will see its share

diminish from 62% in 2019-21, to 60% by 2031. Stronger growth in the rest of the region will lead to an expansion in the total value of livestock production by 3% over the next decade, with Eastern Europe's contribution growing to 29% and central Asia's to 12% of the region's total. With the exception of central Asia, where livestock inventories are still expanding, animal production growth will be based predominantly on intensification resulting in higher carcass weights. Growth in the total volume of poultry production is expected to be robust across the region, increasing by 6% by 2031. Fish production is expected to grow by 7% over the coming decade. Growth of 12% in aquaculture production, compared to 6% for capture fisheries, will result in the share of aquaculture in total fish production in the region rising to 21% by 2031.

Production of dairy products is expected to remain strong. Growth from Central Asia and Eastern Europe is expected to accelerate to 39% and 12%, respectively, by 2031. By contrast, production of dairy products in Western Europe is expected to expand by only 3%. However, expansion in dairy output will increasingly feed international demand, as an increasing share of the region's butter, cheese and milk powders is expected to be exported over the next decade. The region will account for 43% of global dairy product exports by 2031. The bulk of exports will be from the European Union, with its share in total regional exports of dairy products rising to 71% by 2031. Shaped by the transition towards environmental sustainability, the European Union's share of global milk production will, however, decline from 18% in 2019-21 to 15% by 2031.

Direct agricultural GHG emissions are projected to decline modestly by 1.3% by 2031. However, due to increased productivity, GHG emissions expressed relative to agricultural production is projected to decline by 8.3% compared to its level in the 2019-2021 base period. The decline in emissions relative to output is higher in Central and Eastern Asia at 12% and 14%, respectively, while in Western Europe the decline is just 5%.

Consumption

Slow growth in animal sourced foods in Western Europe, but better prospects in Central Asia

Most of the region constitutes a fairly mature market, but consumers were not spared the impact of the COVID-19 pandemic (De Vet et al., 2021[5]) (FAO, 2020[6]) (OECD, 2020[7]). Effects on food consumption were most severe in 2020 and mainly driven by short term affordability constraints, particularly in countries where consumers spend a larger share of total income on food and where income support measures were less comprehensive. In addition, changes to product mix and procurement channels related to COVID-19 impacts affected overall consumption. Retail sales increased and more food was consumed at home, while consumers tended towards online shopping, more local products, as well as products with a longer shelf life. The pandemic further accentuated consumer trends that had been evident earlier, such as rising awareness of healthy eating habits, which will continue to influence demand in the medium term. While many of the effects of the pandemic have eased, new food security concerns have arisen in Eastern Europe, as a result of the ongoing war, which as of mid-April, 2022, has seen almost 5 million refugees flee from and over 7 million people displaced within Ukraine since Russia's invasion began in February 2022.

Average daily calorie availability per capita in the region is well above the global average and is projected to increase by a further 35 kcal/day to exceed 3 440 kcal/day. The increase is concentrated in Eastern Europe and Central Asia and is mainly attributed to increased consumption of dairy products, cereals, and pulses. Though sugar consumption in Central Asia continues to rise, demand for sugar in the region as a whole is projected to continue to contract due to heightened health consciousness of European consumers. Sugar consumption per capita in Western Europe is projected to fall by 1.3 kg per year by 2031, but will remain almost 60% higher than the world average.

Protein availability per capita in the region is projected to increase by 2 g/day to 105 g/day by 2031, which is roughly 20% higher than the world average of 87 g/day. Protein availability from plant-based sources is growing, with per capita consumption of pulses rising by 20% thanks to its association with positive health outcomes, to exceed 5kg per capita per year by 2031. However, the biggest gain in protein availability will still be sourced from animal products, in particular rising dairy consumption. Across the region, domestic food demand for dairy products will remain strong, contributing 12% of daily calorie intake by 2031 and 20% towards daily protein availability. Consumption trends mirror those of production, with a reduction in per capita consumption in Western Europe, contrasting sharp gains in Eastern Europe and Central Asia. Meat consumption is growing at a slower rate but is still expected to approach 59kg per capita per year by 2031, being 2.2% above the base period level. The bulk of this growth will be from poultry, where consumption rises by 1.4kg to an average consumption of 24 kg/capita per year. By contrast, pork and bovine meat consumption is anticipated to each decrease by an annual average of 0.1% per annum over the coming decade. Fish consumption is also expected to decline slightly by 2031, but in Western Europe, per capita consumption levels will remain 1kg per capita above the global average of 18.8 kg by 2031. By contrast, fish consumption in central Asia will only reach 3kg per capita or roughly 16% of the global average level.

Owing largely to the importance of animal products, the region consumes almost a quarter of global protein feed. Slower growth in the livestock sector, along with improvements in feed use efficiency will result in slower growth of 3%, compared to 10% over the past decade. By 2031, the region's share in global feed use could decline to almost 22%. Like livestock production, the bulk of growth in feed use is in Eastern Europe and Central Asia, which contrasts a minor reduction in Western Europe. Maize feed use is expected to expand faster than wheat, reflecting stronger meat production growth in Eastern Europe and a small decline in Western Europe.

Trade

Russia's war against Ukraine constraints growth in crop exports

Trade patterns within the European and Central Asian region have shifted substantially over the past decade. Traditionally one of the biggest net importers, its trade deficit in agricultural products has shrunk to less than half the level of a decade ago. The change has been driven by rising exports from Eastern Europe, which has transitioned to become a net exporter. (Figure). The shift was underpinned by Ukraine and Russia, where the combination of rising productivity and slow domestic demand growth has resulted in an ever-increasing exportable surplus, but where the current war will also affect prospects significantly. With a large land base, both Eastern Europe and Central Asia have a comparative advantage in cereal and oilseed production. In conjunction with already high consumption levels and limited population growth, this should enable export growth to further improve the region's net trade balance, assuming that the following the war productive capacity is restored. Under baseline assumptions, the region is expected to be the second largest net exporter behind Latin America and the Caribbean by 2031, but prolonged war may prevent this from materialising.

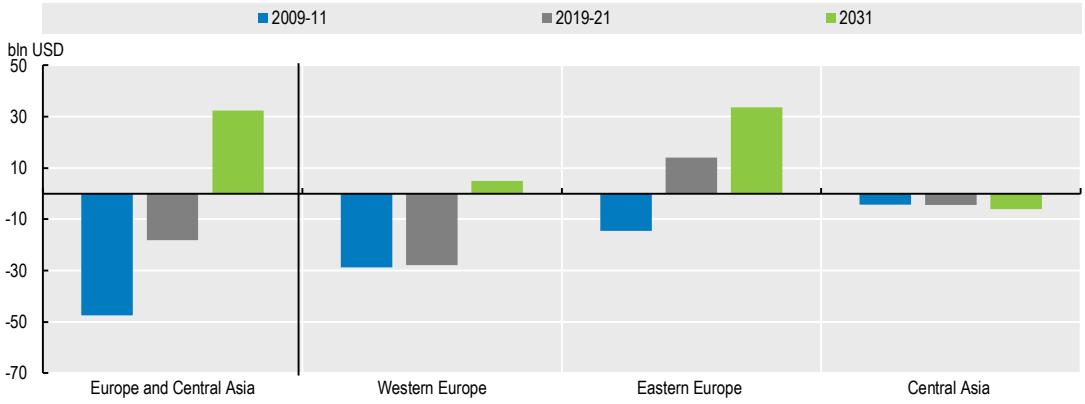
The total volume of exports from the region may expand 23% by 2031 relative to the base period, underpinned by a 28% expansion in crop exports, but a more subdued 10% expansion in livestock sourced exports. The region's cereal exports are projected to grow from 161 Mt in the base period to 190 Mt in 2031, an increase of 18%, with the Near East and North Africa region as a major importer. This will see its global market share increase to 36% by 2031. While wheat remains the major contributor to cereal exports from the region, the importance of maize is growing. Wheat exports are expected to rise by 18%, accounting for 55% of global exports, while maize exports are expected to grow by 17%, to constitute 22% of the global market by 2031.

The region is a major exporter of meat and dairy products, but growth in meat and dairy exports is slower than that of crop products. The region accounts for 44% of global pig meat and 29% of global poultry export. This comes mainly from the European Union, which constitutes 90% of pig meat, 59% of bovine meat and 53% of poultry exports from the region. The EU contribution makes the region the most important dairy product exporter in the world. The region provides 41% of global dairy exports, of which 70% comes from the European Union. For cheese, the region constitutes 59% of the global market, of which the European Union contributes 40%. For all dairy products, both the European Union's and the region's share in global trade is set to rise. By 2031, the European Union will contribute 44%, 31%, 34% and 11%, respectively, of global exports for cheese, butter, SMP and WMP.

Led by Russia and Norway, the region is also one of the most important exporters of fish. Russian exports could rise by 31% over the ten-year projection period, supporting growth of 14% in the Europe and Central Asian region.

Despite slower growth, the region remains a major importer. Much of this trade occurs within the region, with Central Asia being a net importer of livestock products. Considering the importance of intra-regional trade, the future status of the Russia's import embargo and the war will affect trade within and outside the region. Apart from livestock, the Europe and Central Asia region is a major importer of protein meal, where its share in global imports is expected to decline from 34% in the base period to 29% by 2031. The region also imports significant amounts of sugar and ethanol, but this is projected to decline over the projection period and may be affected by sanctions in the energy sector as a result of the war.

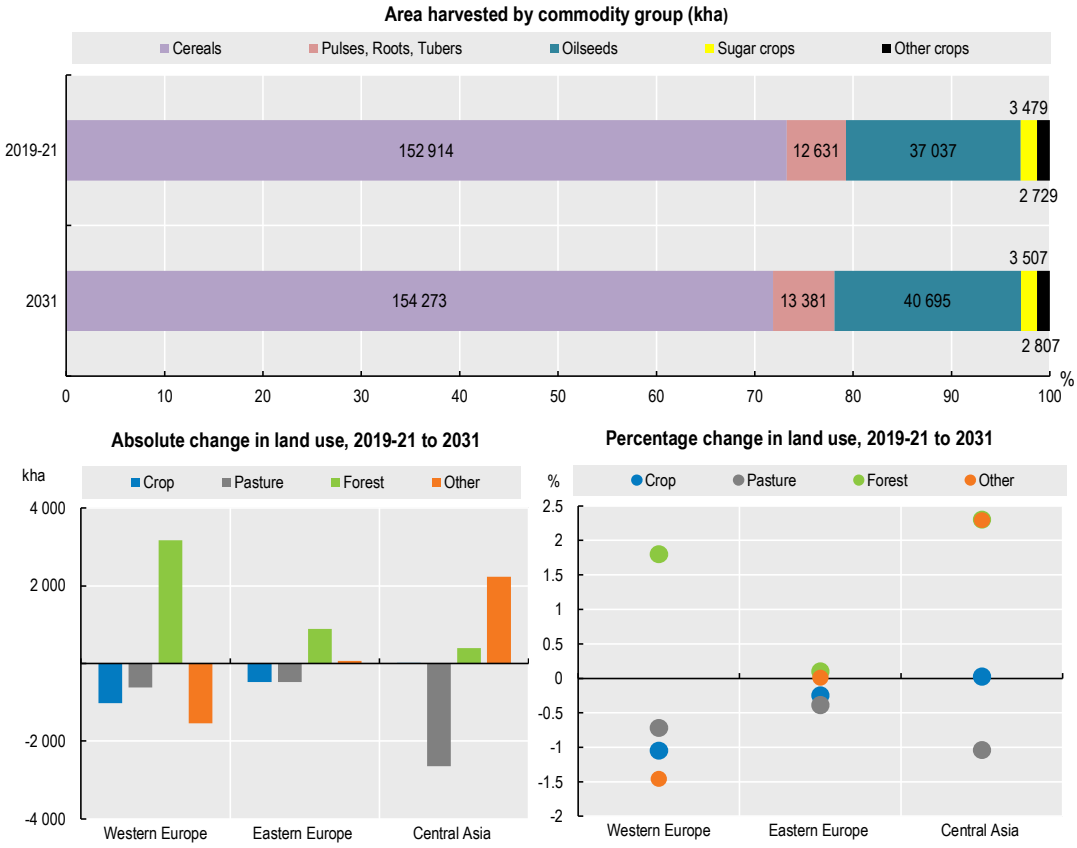
Figure 1. Net exports of agriculture and fish products from Europe and Central Asia (including processed products)



Note: Estimates are based on historical time series from the FAOSTAT Trade indices domain, which are extended with the *Outlook* database. Products not covered by the *Outlook* are extended by trends. Total trade values include also processed products, usually not covered by the Outlook variables. Trade values are measured in constant 2014-2016 USD.
Source: FAO (2022). FAOSTAT Trade Indices Database, http://www.fao.org/faostat/en/#data/TI ; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en

StatLink 2 https://stat.link/7yrjob

Figure Error! No text of specified style in document.**. Change in area harvested and land use in Europe and Central Asia**



Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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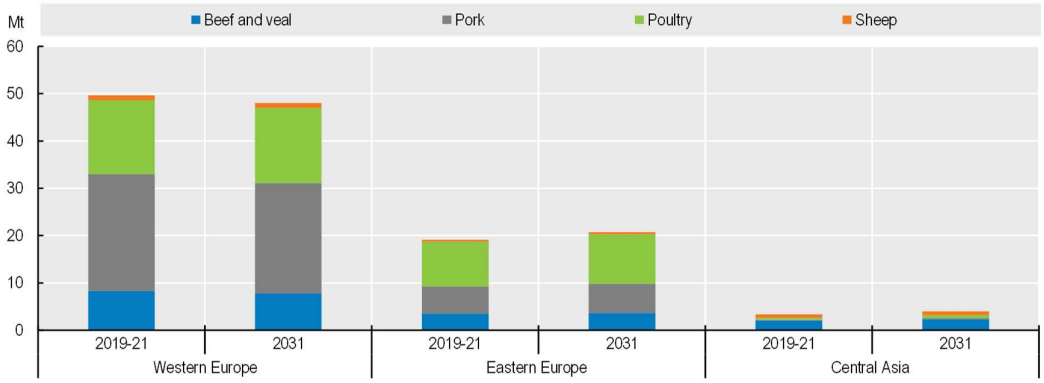
Figure 3. Livestock production in Europe and Central Asia



Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en

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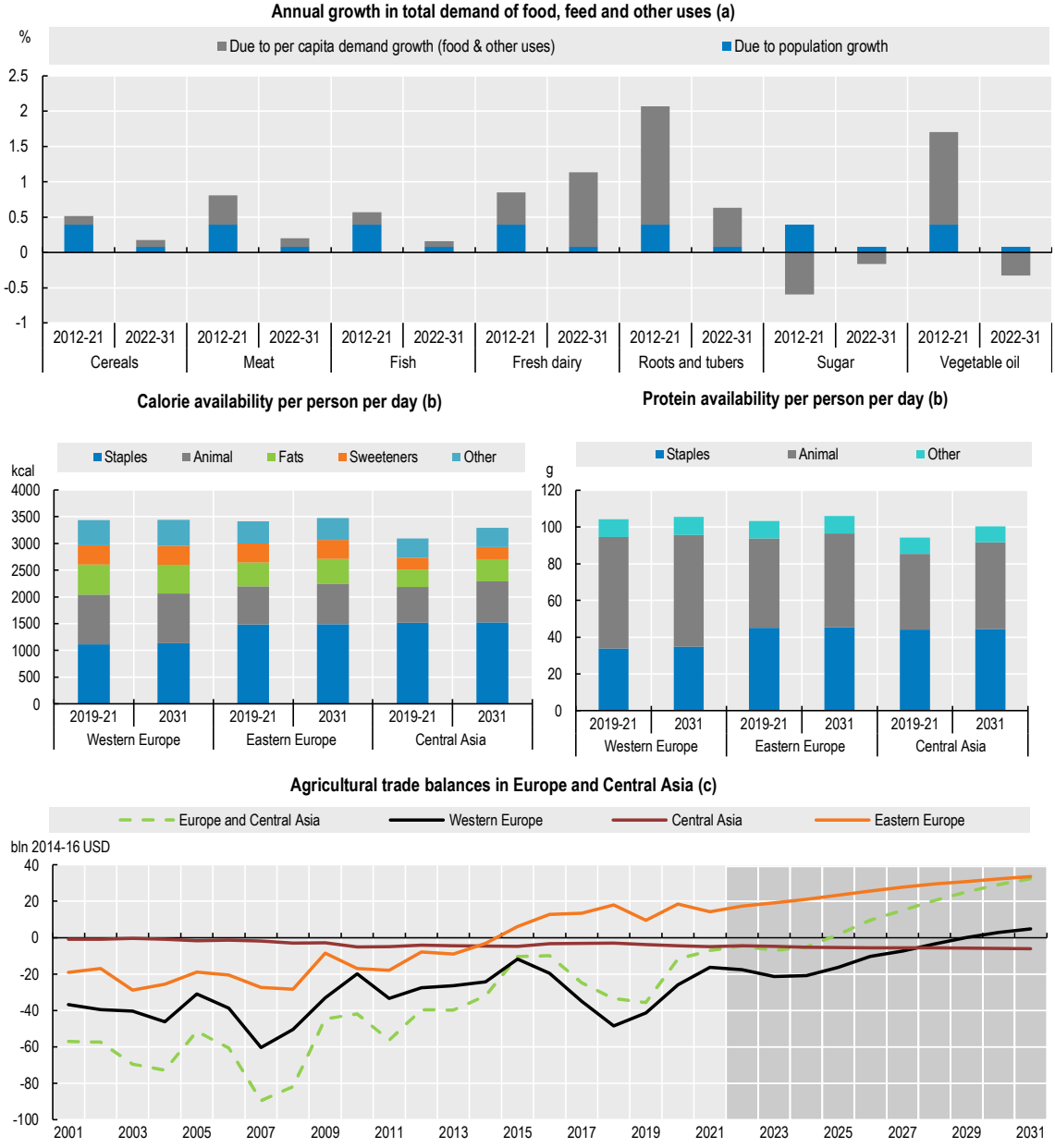
Figure 4. Demand for key commodities, food availability and agricultural trade balance in Europe and Central Asia



Notes: Estimates are based on historical time series from the FAOSTAT Food Balance Sheets and trade indices databases and include products not covered by the *Outlook*. a) Population growth is calculated by assuming per capita demand constant at the level of the year preceding the decade. b) Fats: butter and oils; Animal: egg, fish, meat and dairy except for butter; Staples: cereals, oilseeds, pulses and roots. c) Include processed products, fisheries (not covered in the FAOSTAT trade index) based on outlook data.

Source: FAO (2022). FAOSTAT Value of Agricultural Production Database, http://www.fao.org/faostat/en/#data/QV; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en

StatLink 2 https://stat.link/alm0yg

Table 1. Regional indicators: Europe and Central Asia

	Average			%	Growth [2]	
	2009-11	2019-21 (base)	2031	Base to 2031	2012-21	2022-31
Macro assumptions						
Population ('000)	895 571	932 572	943 026	1.12	0.39	0.08
Per capita GDP[1] (kUSD)	23.79	26.40	31.94	20.99	1.10	1.76
Production (bln 2014-16 USD)						
Net value of agricultural and fisheries[3]	584.4	664.8	715.7	7.65	1.32	0.77
Net value of crop production[3]	330.1	372.4	408.5	9.70	1.28	1.01
Net value of livestock production[3]	206.3	240.3	251.1	4.50	1.44	0.38
Net value of fish production[3]	48.1	52.2	56.1	7.51	1.12	0.80
Quantity produced (kt)						
Cereals	508 768	601 972	628 511	4.41	1.75	0.95
Pulses	8 194	13 082	16 498	26.11	6.58	2.41
Roots and tubers	28 715	31 843	33 047	3.78	2.00	0.75
Oilseeds[4]	49 054	69 654	84 094	20.73	3.29	1.51
Meat	60 224	72 098	72 725	0.87	1.87	0.00
Dairy[5]	24 902	29 365	32 698	11.35	1.61	1.09
Fish	17 150	18 720	20 088	7.31	1.20	0.79
Sugar	26 628	27 456	28 522	3.88	0.66	0.33
Vegetable oil	24 019	34 441	40 669	18.08	3.30	1.22
Biofuel production (mln L)						
Biodiesel	10600.38	15449.29	16220.30	4.99	2.81	-0.98
Ethanol	6 792	7 842	8 517	8.60	1.10	0.81
Land use (kha)						
Total agricultural land use	802 188	796 355	791 139	-0.65	-0.09	-0.05
Total land use for crop production[6]	335 722	333 679	332 198	-0.44	-0.09	-0.07
Total pasture land use[7]	466 467	462 675	458 942	-0.81	-0.10	-0.04
GHG Emissions (Mt CO2-eq)						
Total	719	745	735	-1.28	0.30	-0.11
Crop	172	188	187	-0.72	0.77	0.06
Animal	528	538	531	-1.28	0.15	-0.16
Demand and food security						
Daily per capita caloric availability[8] (kcal)	3 344	3 394	3 443	1.46	0.13	0.26
Daily per capita protein availability[8](g)	100.9	103.0	105.4	2.4	0.2	0.3
Per capita food availability (kg/year)						
Staples[9]	167.2	167.8	171.2	2.03	0.02	0.19
Meat	55.1	57.5	58.8	2.23	0.43	0.15
Dairy[5]	26.7	29.4	31.8	8.14	0.89	0.90
Fish	16.3	15.7	15.6	-0.80	-0.23	0.06
Sugar	36.6	34.6	33.8	-2.29	-0.48	-0.13
Vegetable oil	18.9	22.4	23.9	6.90	0.87	0.34
Trade (bln 2014-16 USD)						
Net trade[3]	- 48	- 18	32	-278.84	..	..
Value of exports[3]	421	561	693	23.37	2.72	1.84
Value of imports[3]	468	580	660	13.91	2.14	1.09
Self-sufficiency ratio[10]						
Cereals	109.4	119.2	125.0	4.84	0.65	0.56
Meat	99.0	108.4	105.5	-2.67	1.06	-0.20
Sugar	79.8	84.4	89.7	6.23	1.00	0.55
Vegetable oil	81.8	95.7	110.3	15.22	1.6	1.4

Notes: 1. Per capita GDP in constant 2010 US dollars. 2. Least square growth rates (see glossary). 3. Net value of agricultural and fisheries data follows FAOSTAT methodology, based on the set of commodities represented in the Aglink-Cosimo model valued at average international reference prices for 2004-06. Projections for not included crops have been made on the basis of longer-term trends. 4. Oilseeds represent soybeans and other oilseeds. 5. Dairy includes butter, cheese, milk powders and fresh dairy products, expressed in milk solid equivalent units. 6. Crop Land use area accounts for multiple harvests of arable crops. 7. Pasture land use represents land available for grazing by ruminant animals. 8. Daily per capita calories/protein represent availability per capita per day, not intake. 9. Staples represent cereals, oilseeds, pulses, roots and tubers. 10. Self-sufficiency ratio calculated as Production / (Production + Imports - Exports) * 100.
Sources: FAO (2022). FAOSTAT Food Balance Sheets and trade indices databases, http://www.fao.org/faostat/en/#data ; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en

[1] For mentioned regions, see Summary table for regional grouping of countries.

[2] Source OECD-FAO interpolated for 2019-21 from the database of the Global Trade Analysis Project (GTAP) 2011, using food expenditure and GDP data used in this *Outlook*.