6 Meat

This chapter describes market developments and medium-term projections for world meat markets for the period 2022-31. Projections cover consumption, production, trade and prices for beef and veal, pigmeat, poultry, and sheepmeat. The chapter concludes with a discussion of key risks and uncertainties which have implications for world meat markets over the next decade.

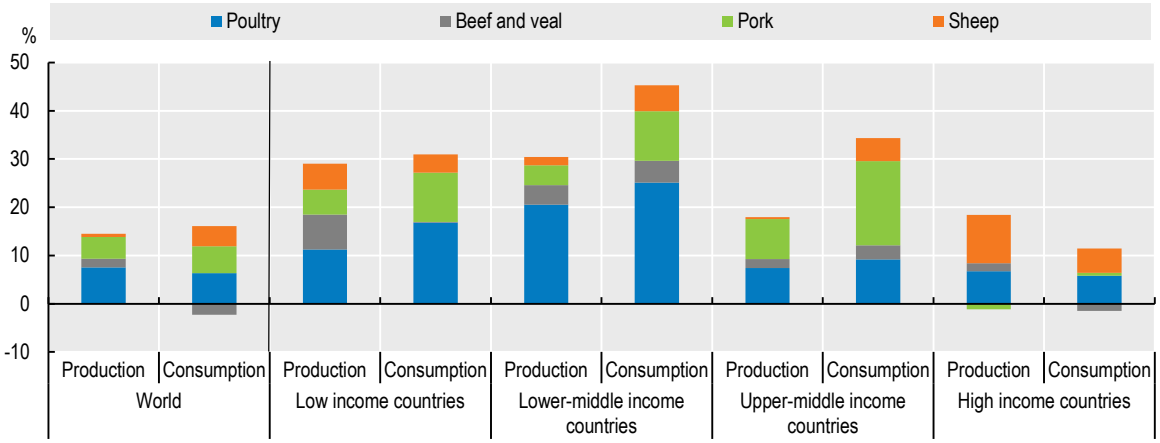
6.1. Projection highlights

Slowing down globally but better prospects in low and middle income countries

The shift in meat consumption from foodservice to home cooking that occurred during the COVID pandemic is expected to be short term and will revert to prior expenditure patterns as restrictions are lifted. In high income countries, however, where per capita consumption is already high, demand is anticipated to level off or trend lower given ageing populations and greater dietary concerns that seek more diversity in protein sources. In lower income countries, both population and income growth will spur higher overall consumption, albeit from a much lower per capita base level. Recovery in meat consumption in the People's Republic of China (hereafter "China"), which fell in per capita terms by over 11% in 2020 from its historical peak in 2018, is projected to return to its longer-term trend by 2023, as the impact on domestic pig meat prices of African Swine Fever (ASF) abates. Per capita global meat consumption, once China pork consumption recovers, is expected to stabilise around 35.6 kg/year in r.w.e. by 2031.

The long-term shift in meat consumption toward poultry continues to strengthen. In high-income countries this trend is due to a rising preference for white meats that are more convenient to prepare, and which are perceived as a better food choice. In low- and middle-income countries, the upward trend is additionally due to the lower price of poultry compared to other meats. Globally, protein availability from poultry, pork, beef, and sheep meat is projected to grow 16%, 17%, 8%, and 16%, respectively, by 2031 (Figure 6.1). Poultry meat is projected to constitute 47% of the protein consumed from meat sources, followed by pig, sheep and bovine.

Figure 6.1. Growth in meat production and per capita consumption on a protein basis, 2019-2021 to 2031



Note: The 38 individual countries and 11 regional aggregates in the baseline are classified into the four income groups according to their respective per-capita income in 2018. The applied thresholds are: low: < USD 1 550, lower-middle: < USD 3 895, upper-middle: < USD 13 000, high > USD 13 000.
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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Global meat supply will expand to meet rising demand over the projection period reaching 377Mt by 2031 but growing slower than the last decade. Global herd and flock expansion, especially in China, combined with continuous improvement in animal breeding, management, and technology will increase productivity,

particularly in low- and middle-income countries, which will drive the growth in production. Higher prices for meat early in the projection period will induce a supply response, albeit restrained by higher costs for inputs, particularly for feed, energy, and transport. Bottlenecks in processing capacity witnessed during the height of the pandemic are expected to ease. China is projected to account for most of the total increase in meat production, followed by the United States, Brazil and India. By contrast, in the European Union meat production will decrease over the outlook period due to increasing domestic and environmental costs, and reduced export opportunities due to greater competition on global markets.

The increase in global meat production is influenced mainly by growth in poultry meat. Global growth in pig meat production will remain limited in the first years of the Outlook due to the ongoing recovery from the outbreaks of ASF in China, the Philippines and Viet Nam. The recovery process is assumed to be completed in China and Viet Nam by 2023 and in the Philippines by 2024. Government strategies in the latter two are based on the development of a commercially available vaccine to control the spread of ASF, which will be critical in reducing the risks of future ASF outbreaks.

The current projection foresees a global increase in livestock inventories with cattle, pigs, poultry and sheep rising to 1.8, 1.0, 31.0 and 2.9 billion head, respectively. As a result, greenhouse gas (GHG) emissions by the meat sector are projected to increase by 9% by 2031. This increase is considerably less than the 15% increase in meat production given the rising share of poultry, and productivity increases that yield higher production of meat per animal, and thus a lower ratio of GHG emissions per unit of meat output (Figure 6.5). An important exception is in Africa where emissions will rise by 24% largely in parallel with its rise in production.

International meat trade will expand in response to growing demand from high per-capita income growth in Asian countries and by high population growth in Sub-Saharan Africa. Import demand in middle and high-income Asian countries has been steadily increasing in recent years due to a shift toward diets that include higher shares of animal products. The expected decline in China's pork imports will put pressure on global pork markets as they re-adjust to a post-ASF situation. Trade in other meats will continue to grow, albeit at a slower pace than in the last decade.

This *Outlook* projects that nominal meat prices are anticipated to remain high in 2022, as demand in some middle- and high-income countries continue to recover from the COVID-19 pandemic and underpin market demand, while supplies remain tight. Real prices of all meats are foreseen to return to their long-term downward trend levels over the *Outlook* period as supplies respond to price incentives, and productivity gains are realised.

The projections assume that aside from demographic, income, and price factors, evolving consumer preferences will shape diets. Meat consumption patterns of consumers in some high-income countries have reached a turning point at which overall demand has started to stagnate and shifts will occur based on the type and the quality of the meat consumed. Dietary recommendations advising limited red meat consumption as well the changing consumer's preferences towards alternatives to conventional meat proteins over the past years are having a greater impact on consumer purchases.

6.2. Current market trends

6.2.1. Market prices rise despite higher supplies

World meat production rose 5% in 2021 to an estimated 339 Mt, led by a large 34% increase in pig meat production in China following two years of precipitous decline induced by an outbreak of ASF. Supplies of poultry, bovine and sheep meat rose only marginally as high feed prices reduced profitability. Bovine meat output in some countries was restrained by a variety of factors such as COVID–19 related disruptions, labour shortages, the on-going shrinkage of the dairy herd in the European Union, and the implementation

of an export tax in Argentina. On the other hand, beef output increased 12% in India as slaughter numbers increased following the gradual reopening from the COVID-19 pandemic lockdown and in response to improving demand from overseas markets in the Middle East and Southeast Asia.

World meat imports in 2021 are estimated to have reached 40 MT, led by poultry imports. Leading meat exporters – including Brazil, the European Union and the United States – supplied much of this higher import demand.

International meat prices quoted in the *Outlook* trended upward in 2021, reflecting higher demand from economic recovery and higher marketing and transport costs. However, meat to feed price ratios fell significantly, putting pressure on sectoral profitability in intensive feed-grain livestock operations. This will cause markets to tighten further inducing higher prices early in the *Outlook* period.

6.3. Market projections

6.3.1. Consumption

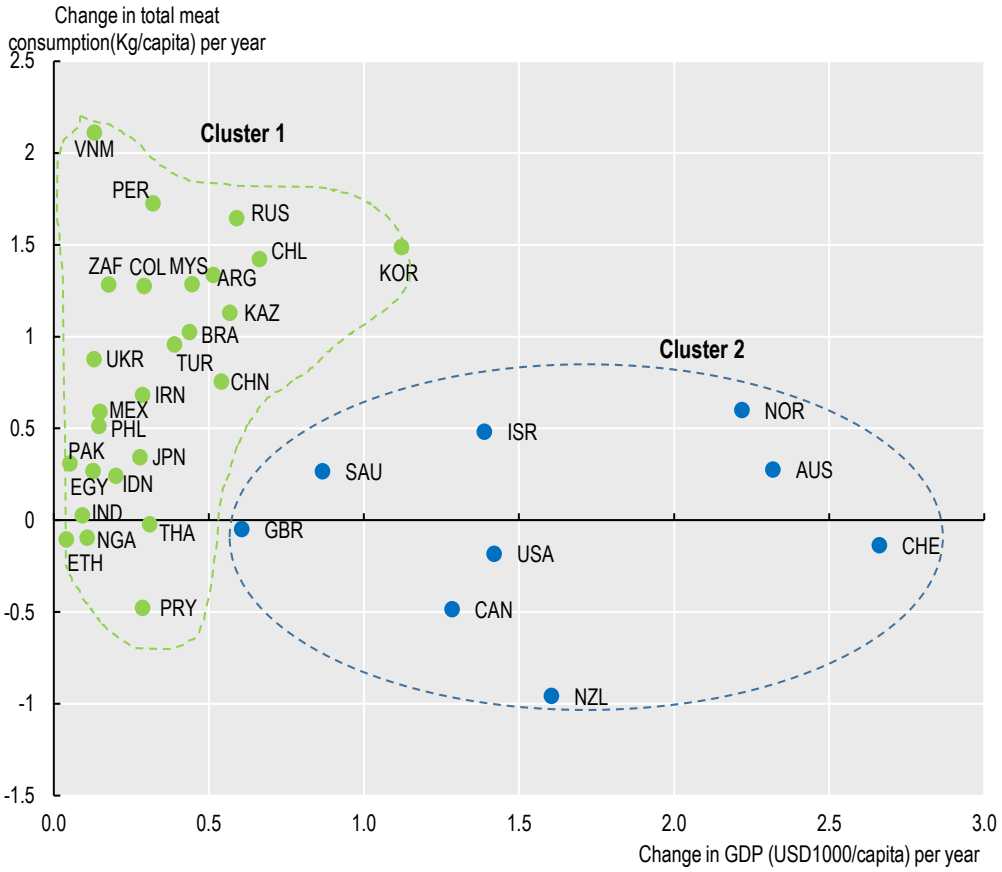
Meat demand is weakening in high income countries, with a shift to white meat

Population growth is a major driver of increased demand, and its projected global increase of 11% will underpin an estimated growth of 15% in global meat consumption by 2031, compared to the base period of this Outlook. As well as population growth, determinants of meat consumption are complex including income, prices, demographics, urbanisation, traditions and religious beliefs, as well as environmental, ethical/animal welfare and health concerns. The past several decades have witnessed considerable changes in the impact of each of these factors across a broad array of countries and regions.

Economic growth is an important driver of meat consumption as it enables the purchase of meat, which is typically a more expensive source of calories and proteins. It is also accompanied by other structural changes such as greater urbanisation, higher labour participation, and away-from-home food service expenditures that additionally encourage higher meat purchases. However, the response of consumption to income growth is demonstrably higher at lower incomes, and less so at higher incomes where consumption is largely saturated, and consumers may be more sensitive to environmental, and ethical/animal welfare and health concerns. Recent analysis suggests that at a GDP per capita exceeding about USD 40 000, growth of GDP is no longer a driver of growth in meat consumption (Whitton et al., 2021[1]). Countries appear to be grouped into two clusters: one in which increases in GDP per capita matches increases in meat consumption (cluster 1); and a second one of nine countries (cluster 2) in which there is no association between per capita change in GDP and meat consumption (Figure 6.2).

The empirical evidence on consumer behaviour suggests that increases in income in low-income countries, where the share of food expenditure represent a high share of all expenditure, stimulate a higher consumption of lower valued foods, particularly carbohydrates. Beyond a certain threshold, higher valued foods such as animal proteins are preferred. For meat proteins the evidence suggests that the shift towards higher shares of meat protein in the diet have increased the most for upper middle-income countries, particularly China. However, after 2015 it appears that the dietary shift towards increasing amount of meat proteins as a share of total protein intake has slowed. These trends are not anticipated to change much over the next decade. Higher incomes may induce higher per capita protein consumption (including eating away from home), but not necessarily a higher share of meat protein in diets.

Figure 6.2. Change in Gross Domestic Product (GDP) and change in meat consumption.



Note: Scatter plot of change in nominal GDP per capita per year and change in meat consumption per capita per year. Circles indicate country clusters.

Source: Whitton, C.; Bogueva, D.;Marinova, D.; Phillips, C.J.C. Are We Approaching Peak Meat Consumption? Analysis of Meat Consumption from 2000 to 2019 in 35 Countries and Its Relationship to Gross Domestic Product. Animals 2021, 11, 3466. https://doi.org/10.3390/ani11123466

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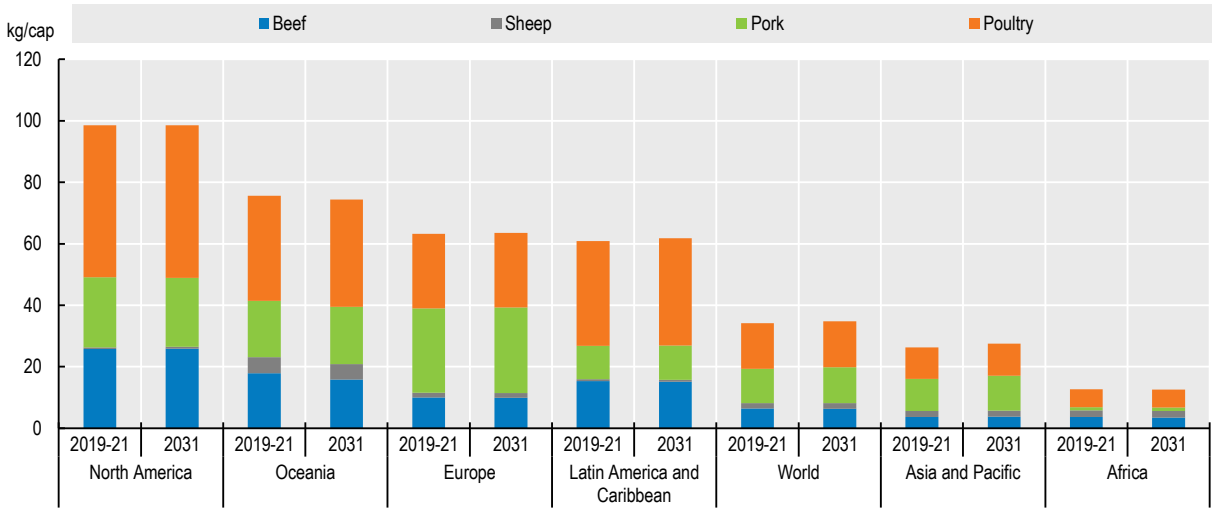
Research has found that the main motivations prompting consumers in higher income countries to shift towards a diet that excludes or reduces meat products and re-allocates among meat products (e.g. red vs white meat) are those relating to animal welfare and health. Consumer research has also examined attitudes and behaviour towards meat consumption in relation to environmental concerns. The results show that the number of consumers willing to stop or significantly reduce meat consumption for environmental reasons or who have already changed their meat intake for ecological concerns still represent a small minority of global consumers, which is however of growing significance among young Europeans who are adopting environmentally motivated meat curtailment strategies (Sanchez-Sabate and Sabaté, 2019[2]).

Figure 6.3. Meat consumption per capita: Continued rise of poultry, pig meat and fall of beef



Note: Per capita consumption is expressed in retail weight.
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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Poultry meat consumption has risen in virtually all countries and regions (Figure 6.3). Consumers are attracted to poultry due to lower prices, product consistency and adaptability, and higher protein/lower fat content. Consumption of poultry meat is projected to increase globally to 154 Mt over the projection period, accounting for nearly half of the additional meat consumed. On a per capita basis, these robust growth rates in poultry consumption reflect the significant role it plays in the national diets of several populous developing countries, including China, India, Indonesia, Malaysia, Pakistan, Peru (which will surpass the United States to become the second largest per capita consumer), the Philippines and Viet Nam.

Global *pig meat* consumption is projected to increase to 129 Mt over the next ten years and to account for a third of the total increase in meat consumption. However, on a per capita basis, global consumption is expected to stagnate over the outlook period. Pork will remain the meat most eaten in the European Union over the coming decade, even though it will remain stable in per capita terms as changes in diets will favour poultry as a cheaper and perceived better food choice. In most of Latin America favourable relative prices have positioned pork and poultry as the favoured meats to meet rising demand from the middle class. Several Asian countries which traditionally consume pork such as Korea and Viet Nam, are also projected to increase consumption on a per capita basis.

Global *beef* consumption is projected to increase to 76 Mt over the next ten years. However, per capita consumption has declined since 2007 and is projected to fall by a further 2% by 2031. Asia and the Pacific is the only region where per capita beef consumption is projected to increase over the outlook period, albeit from a low base. In China, the world's second largest consumer of beef in absolute terms, per capita consumption is projected to rise a further 10% by 2031, after having risen 50% in the last decade. But most countries that have high beef per capita consumption will see the level decline in favour of poultry meat. For example, in the Americas and Oceania, which is where preference for beef are among the highest in the world, per capita consumption will fall in Argentina(-5%) and Canada (-2%), Brazil (-2%), the United States (-4%), and, significantly (-15%), in Oceania.

Global *sheep meat* consumption, a niche market in some countries and considered a premium component of diets in many others, is projected to increase to 18 Mt over the outlook period and to account for 5% of

the additional meat consumed. Sheep meat consumption worldwide, on a per capita basis, is comparable in both developing and developed countries. In some Near Eastern and North African (NENA) countries, where sheep meat is traditionally consumed, per capita consumption is projected to continue its long-term decline despite increasing disposable income.

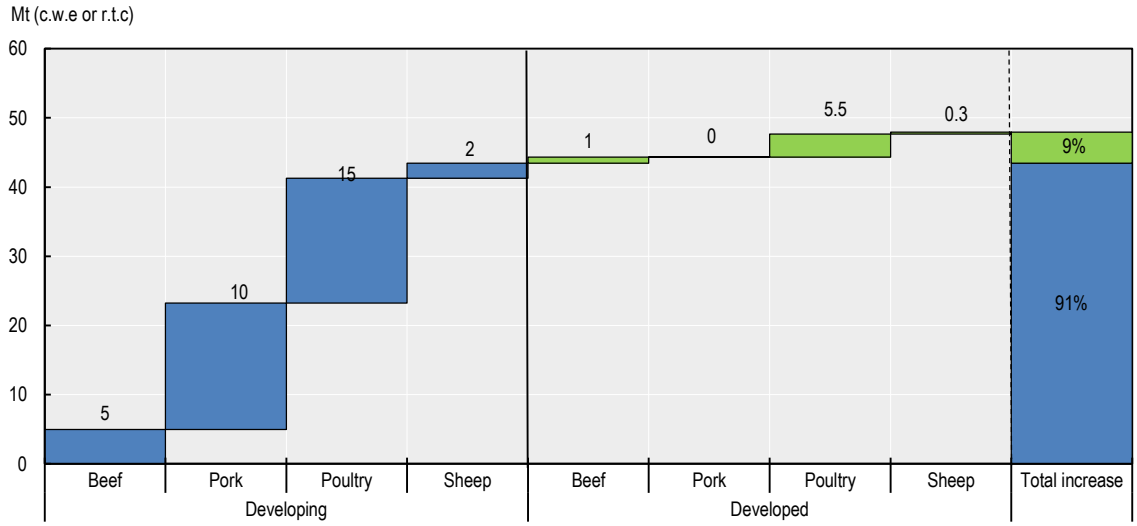
6.3.2. Production

Poultry meat remains the primary driver of growth in meat production

Global meat production is projected to reach 377 Mt based on increasing profitability in the early years of the outlook period as meat prices rebound post-COVID-19 and feed costs decline. Overall, most meat production growth will occur in developing regions. The market share of the Asia and Pacific regions will return to its historical level, after dipping during the ASF crisis, mainly due to developments in China which is the world's largest meat producer. The production share of the world's top five meat producers – China, the United States, the European Union, Brazil, and the Russian Federation (hereafter "Russia") – will gradually trend downwards from its current level. This downward trend reflects a decline in production from the European Union and an emerging broader base of global production. Globally, livestock expansion will be facilitated by the increasing size and consolidation of production units towards a more integrated systems, especially in emerging developing countries (Figure 6.4).

Figure 6.4. Growth of meat production by region and meat type

2031 vs 2019-21



Note: c.w.e. is carcass weight equivalent, r.t.c. is ready to cook equivalent.
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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Poultry meat will continue to be the primary driver of meat production growth increasing 16% by 2031. With favourable meat-to-feed price ratios compared to other ruminants, together with a short production cycle, poultry producers can respond quickly to market signals while taking on board rapid improvements in genetics, animal health, and feeding practices. Production will expand from sustained productivity gains in Brazil, China, India, Indonesia, and the United States. Expansion is also foreseen in Asia as the shift away from pig meat triggered by several ASF outbreaks will benefit poultry in the medium term.

Pig meat output is projected to rise by 17% by 2031, up from an ASF-reduced base level 2019-2021 and benefiting from increasing specialisation of the sector and biosecurity measures. The ASF outbreak across Asia, starting in late 2018, will continue to affect many countries in the early years of the outlook period, with China, the Philippines and Viet Nam experiencing the greatest impact. It is projected that ASF outbreaks will continue to keep global pig meat output below previous peak levels until 2022, after which it is expected to steadily increase to 2031.

Pig meat production in China is expected to continue to increase and attain pre-ASF (2017) levels by 2023. Most of the pig meat production increase in ASF-affected regions will be due to conversion from largely small-scale backyard holdings to large-scale commercial enterprises. Viet Nam, which has suffered from ASF-reduced output since 2019, is projected to become the sixth largest pig meat producer just below Brazil and Russia. Its *domestic* policy rests on vaccination to control the spread of ASF, and trials have proved to be safe and efficient. As a result, Vietnamese production is projected to recover to 2019 levels by 2023 and to grow further over the projection period.

Pig meat production in the European Union is projected to decline as environmental and animal welfare concerns are expected to limit domestic demand while the decline in imports by China also weigh negatively on trade prospects. Brazil and US production are also expected to fall at the start of the *Outlook* in the face of the expected decline of Chinese import demand and high feed costs. On the other hand, their production will remain high given their strong competitive position in *global* markets.

Beef production will grow to 76 Mt by 2031, with slow growth attributable to weak beef demand as consumers continue to shift preferences to poultry meat. In North America, the largest producing region, a modest herd expansion, is projected to increase beef production by 4% by 2031. Production in the European Union is projected to fall as inventories of dairy cows, responsible for approximately two-thirds of the beef supply, decrease following productivity gains in the milk sector. Other factors limiting the growth potential of this sector in the European Union are a reduction in suckler cowherds due to their low profitability, steep competition in export markets, and declining domestic demand. The beef sector is the main beneficiary of the European Union's voluntary coupled support programme, and a relatively good price outlook will dampen the downward trend of production in the European Union.

Beef and carabeef[1] production in India rebounded in 2021 after recording a large decline in 2020 in part due to COVID-19 lockdown and regulations on animal welfare in several Indian states. The largest historical increase in beef supply was recorded in 2021 as the Indian government implemented measures to facilitate processing and slaughtering of bovine and water buffaloes in particular. India's cattle production is expected continue to grow over the projection period with improvement in breeding, nutrition, and animal health. Pakistan is projected to have the strongest growth rate of any country at 26%, as calf and milk-producing cows are being slaughtered to meet the high demand of meat protein from the Middle East.

In Australia, which has faced a COVID-related shortage of labour, production is projected to increase due to greater cattle availability and the return of labour to processing plants. Overall, beef producers have greater ability to increase slaughter in the short term but have less flexibility to increase carcass weights with high feed prices. Therefore, in the early years of the *Outlook* beef production will be higher due to more slaughtering of lower weight animals.

Growth in *sheep meat* production will mostly originate in Asia, led by China, India, and Pakistan but significant increases are also projected in Africa, particularly in the least developed countries of Sub-Saharan Africa. Despite limitations linked to urbanisation, desertification, and the availability of feed in some countries, sheep and goats are well adapted to the region with their extensive production systems.

In Oceania, New Zealand sheep meat production is expected to remain stable due to competition for pastureland from the beef and dairy sectors and forestry. The larger availability of sheep meat in Australia will enable it to respond to growing global demand despite being constrained by its currently small sheep flock.

Sheep meat production in the European Union is expected to increase slightly, underpinned by voluntary coupled producer support offered in the main sheep-producing Member States.

Box 6.1. Productivity change in the meat sector

Meat production has grown about 110% in the past 30 years and, as noted in this *Outlook*, is anticipated to grow an additional 8% over the next ten years, due largely to growing demand of populations and incomes in developing economies. At the same time, the "off-take", or the quantity of meat produced per animal, has also increased substantially over time. This means that fewer animals are required to produce a given level of meat. This partial productivity measure captures several changing characteristics in the meat sector including the number of offspring per breeding animal, length of feeding period, the quantity of feed needed per kg of meat produced and thus the yield of meat for each animal slaughtered. Ultimately, higher off-take ratios imply a lower inventory of animals or capital which is required to produce meat, while a decreasing feed conversion ratio implies, in the case of industrial operations, a lower need for feed grain.

Both indicators have considerable resource implications. Table 6.1 and Table 6.2 provide selected country examples of off-take and feed conversion ratios for different meats, recent trends, and projected future growth rates over the next decade. Off-take ratios and feed conversion ratios by country and by animal type may vary for several reasons. Meat production characteristics vary by animal and by country depending on genetics, livestock management, climate, pasture and arable land availability, social norms and the state of economic development. Large differences in off-take ratios can be observed between intensive operations with normally higher off-take ratios, and less intensive ones. Grain fed operations typically show higher off-take ratios, as animals may be slaughtered at a younger age and at higher weights.

Table 6.1. Trends in meat off-take ratios in selected countries

	Bovine meat			Pigmeat			Poultry meat			Sheepmeat		
	Offtake ratio	Growth	Projected	Offtake ratio	Growth	Projected	Offtake ratio	Growth	Projected	Offtake ratio	Growth	Projected
	2019-21	2000-19	2020-31	2019-21	2000-19	2020-31	2019-21	2000-19	2020-31	2019-21	2000-19	2020-31
	kg/hd	%/yr	%/yr	kg/hd	%/yr	%/yr	kg/hd	%/yr	%/yr	kg/hd	%/yr	%/yr
Argentina	57	0.2	0.5	120	0.1	0.2	18	1.0	0.3	3	-1.5	1.1
Australia	86	1.1	1.8	185	1.1	0.2	12	2.7	1.4	10	3.5	0.8
Brazil	39	-0.1	0.6	103	0.9	0.4	10	1.4	0.2	4	0.0	0.2
Canada	122	0.6	0.9	145	1.4	0.2	2	0.5	0.5	19	1.6	0.7
China	62	2.2	0.0	115	1.5	0.7	3	2.1	0.7	11	0.9	0.4
Ethiopia	7	-1.8	-1.1	60	0.2	0.1	1	-0.3	-0.2	3	0.0	0.1
European Union	90	-0.1	0.0	164	1.0	0.2	8	1.2	0.1	8	-1.6	0.7
India	8	0.4	0.2	37	0.3	0.1	5	4.4	1.9	4	0.4	0.3
South Africa	74	3.2	1.7	148	4.2	1.1	8	1.5	1.1	7	4.1	1.9
Thailand	27	1.1	1.7	121	0.5	0.5	6	1.5	-0.4	4	-0.6	-0.2
United States	133	0.2	0.1	165	0.7	0.2	9	1.0	0.3	9	-1.2	0.3

Note: Off-take ratios are computed as gross indigenous meat production divided by all animal inventories at a fix time of the year. Trend growth rates are computed from trend regression over the period indicated. Countries selected to represent all inhabited continents.
Source : OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

Table 6.2. Trends in non-ruminant Feed Conversion Ratios in selected countries

Country	Commodity	Average 2019-21	2012-21	2022-31
		kg of feed/kg of meat live weight	%/yr	%/yr
Argentina	Poultry	1.75	-0.20	-0.05
	Pork	3.56	-0.41	-0.15
Australia	Poultry	1.75	-0.20	-0.05
	Pork	3.56	-0.41	-0.15
Brazil	Poultry	1.73	-0.20	-0.05
	Pork	3.45	-0.41	-0.15
Canada	Poultry	1.73	-0.20	-0.05
	Pork	3.45	-0.41	-0.15
China	Poultry	1.37	2.37	0.19
	Pork	3.20	5.69	0.18
Ethiopia	Poultry	2.15	0.00	0.00
	Pork	4.55	0.00	0.00
European Union	Poultry	1.77	-0.17	-0.10
	Pork	3.54	-0.40	-0.14
India	Poultry	2.15	-0.01	-0.03
	Pork	4.54	-0.01	-0.03
South Africa	Poultry	2.10	0.04	-0.01
	Pork	4.44	0.04	-0.01
Thailand	Poultry	2.11	-0.05	-0.14
	Pork	4.46	-0.05	-0.14
United States	Poultry	1.73	-0.20	-0.05
	Pork	3.45	-0.41	-0.15

Note: Trend growth rates are computed from trend regression over the period indicated.
Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

In general, off-take ratios appear much lower in developing countries, particularly for bovine meat. Ratios appear very low for African countries, where growth rates are also much lower due to poor disease resistance, limited veterinary care and inefficient feeding practices. In addition, smallholders are often isolated from markets and abattoirs by limited infrastructure and, as a result, many animals fail to yield their potential economic value. Often, animals are kept for other reasons than simply meat production, such as for providing a source of wealth or, in the case of sheep, wool. Historical growth in off-take ratios has been high for several emerging countries, such as Chile, China, South Africa, Thailand, as well as in Australia. As emerging countries increase their share of meat production from specialised units, higher off-take ratios will be important in regulating the size of their animal inventories while lower feed conversion ratios lower the pressure on natural resources and environmental damage.

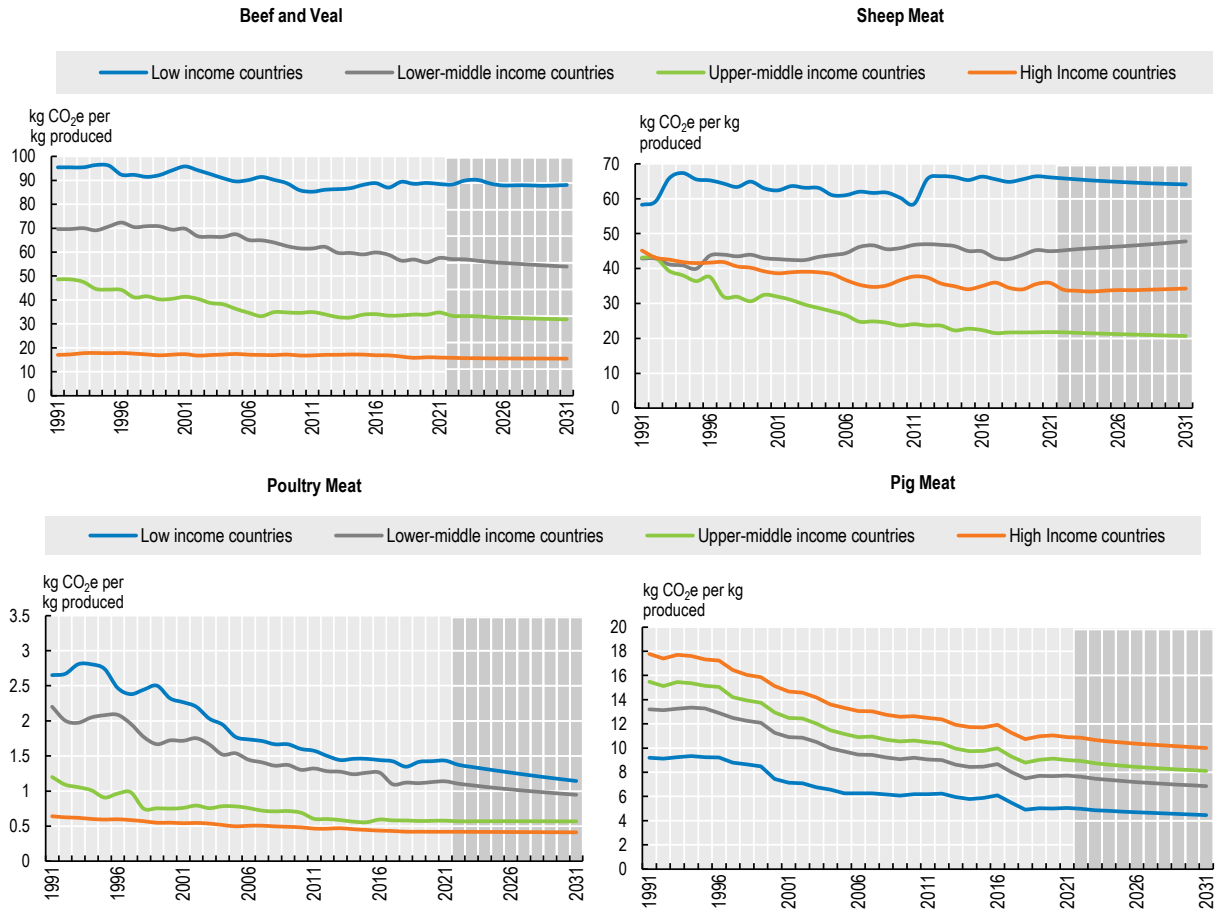
Trend projections in Tables 6.1 and 6.2 generally indicate that the rate of partial productivity growth is slowing in most countries. It should be noted that this lower growth is often from a high base. In general, except for many African countries, the gaps in off-take ratios have been converging to some degree, although not rapidly. There would appear to be substantial scope for increasing productivity in many countries, offering the potential to limit the growth of animal numbers over the long term and minimise resource and environmental costs otherwise associated with a larger number of animals and more feed.

Greenhouse gas emissions will rise at a slower rate than production

Greenhouse gas (GHG) emissions from the meat sector are projected to rise by 9% by 2031. This growth is considerably less than the rise in meat production due primarily to shifts towards poultry production, national low carbon emission initiatives, and increased productivity which yields higher meat output from a given stock of animals (Box 6.1). The strongest growth in meat-related greenhouse gas emissions will be in Africa, and in particular Sub-Saharan Africa, which will be 24% higher in 2031. A renewed effort to reduce GHG emissions could include policies such as carbon taxes and specific regulations combined with incentives to adopt technologies and production systems, such as the integration-crop-livestock-forest promoted by the Low Carbon Emission in Agriculture Plan in Brazil,[2] that reduce the sector's GHG footprint (Figure 6.5). In some cases, additional policies to ensure food security should be introduced because a carbon tax might have a higher negative influence on food security than climate change itself (Hasegawa et al., 2018[3]).

The CO2 produced by the livestock sector is only part of the warming process and methane (CH_4) emitted by the livestock sector, while declining, also contributes considerably to global warming in the short term (Figure 6.6) as methane has a much shorter atmospheric lifetime than CO_2, at around 12 years, while those from the CO_2 may remain for centuries. Nevertheless, methane is much more potent than carbon dioxide. The Intergovernmental Panel on Climate Change (IPCC) estimated that one tonne of methane is considered to be equivalent to 28 to 36 tonnes of CO_2 if assessing its impact over 100 years. A reduction in methane emissions would therefore have a big impact in reducing GHG emissions in the short term. The largest source of anthropogenic methane emissions is agriculture, responsible for around a quarter of the total including from livestock, manure, food waste and paddy rice. In November 2021 over 100 countries representing 70% of the global economy joined the Global Methane Pledge (Gidden et al., 2019[4]) and are committed to a global goal of reducing global methane emissions by at least 30 percent from 2020 levels by 2030. The potential of reduction of methane emissions from the livestock sector could increase the sector's adoption of targeted measures. Livestock producers in many countries have already initiated methane reduction actions, aside from policy measures, for example, following guidelines from FAO's LEAP project.[3] These actions would include improving animal health husbandry and manure management, the adoption of new technology such as processing feed grain to enhanced digestibility and the use of feed supplements and seaweed. It is estimated that such measures could potentially reduce methane emissions by the 30% target (Ocko et al., 2021[5]).

Figure 6.5. Meat GHG emissions intensity per regions



Note: Estimates are based on historical time series from the FAOSTAT Emissions Agriculture databases which are extended with the Agricultural *Outlook* projections. CO2 equivalents are calculated using the global warming potential of each gas as reported in the IPCC Sixth Assessment Report (AR6).
Source: OECD calculations based on FAOSTAT-Emissions Totals, Statistical Division of the UN Food and Agriculture Organization (accessed January 2021).

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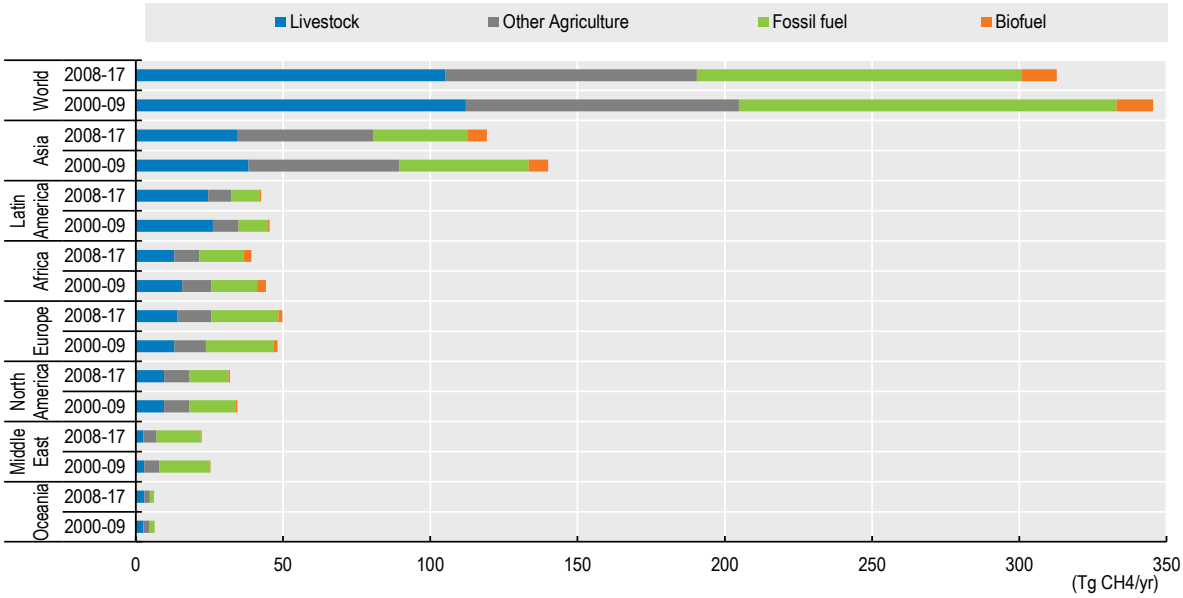
Figure 6.6. Major sources of methane average 2008-17 vs average 2000-09



Source: Chevallier, F., Le Quéré, C., Saunois, M., GCP, 2020. Data supplement of Global Methane Budget 2000-2017, https://hdl.handle.net/11676/4mKODq6pdGLSebFBueFFvkxW.

StatLink https://stat.link/do2aev

6.3.3. Trade

Global meat supplies will continue to be concentrated in very few countries

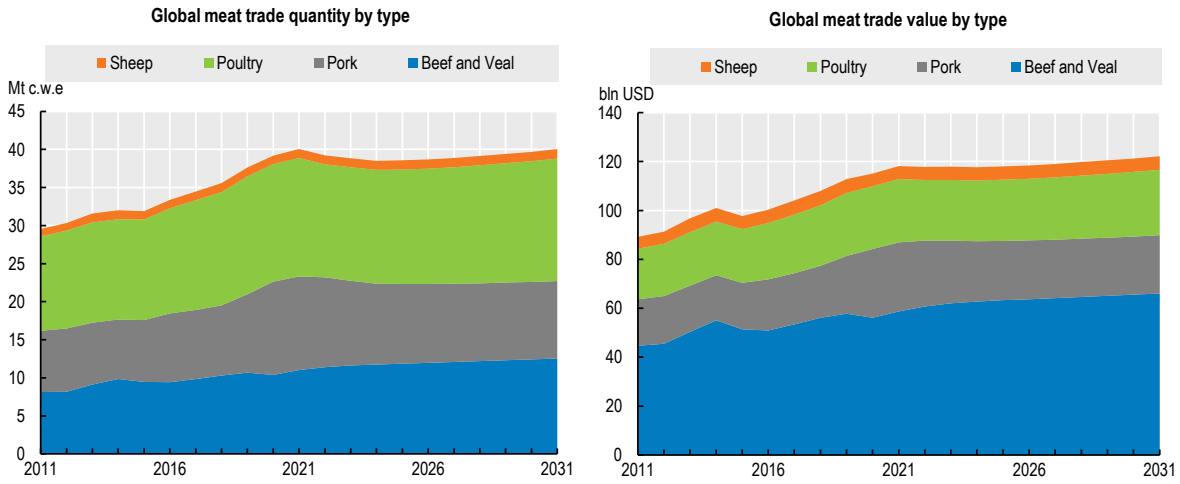
Global meat exports are projected to be 3% higher by 2031 than in the base period, reaching 40 Mt. This measured slow-down in the growth of trade compared to the previous decade is largely the result of high pig meat trade during the ASF crisis in Asia during the base period, particularly by China. By 2031, as ASF-induced trade declines, the proportion of meat output traded should remain stable at around 11%.

Rising imports over the next decade will mainly comprise of poultry and projected to account for two third of the additional meat imports into Africa where consumption growth will outpace the expansion of domestic production.

Meat exports are highly concentrated with the share of the two largest meat exporting countries, Brazil and the United States, expected to increase to around 40%, contributing two thirds of the expected increase in global meat exports over the projection period. The European Union has improved its access to Asian markets in recent years, but the projected decline in meat imports by China as well as competition from North and South America will limit export opportunities, with exports declining over the period to 2031. Other traditional exporting countries; such as Argentina, Australia, Paraguay, Thailand and Türkiye are expected to contribute considerably to the increase in the global meat trade.

Brazil is expected to record by far the largest increase in world meat exports, benefiting from a favourable exchange rate and ample feed grain availability. Its dominance as the largest exporter of poultry meat and beef will continue to increase over the outlook period. Indian buffalo meat exports, despite the government reforms concerning animal welfare, are expected to increase as import demand from the Middle East and Indonesia rises over the next decade. The meat trade in value is dominated by beef and veal, but increasingly dominated by poultry in quantity terms (Figure 6.7)

Figure 6.7. Meat trade in value is dominated by beef and veal, but increasingly by poultry in quantity



Note: c.w.e. is carcass weight equivalent. Exports measured in constant 2014-16 USD.
Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

StatLink https://stat.link/4fw8t5

Import demand is expected to increase most quickly in terms of quantities in Africa, with a 2 Mt increase from the base period. The Asian region will account for 51% of global trade by 2031. The largest increases in imports will occur in Korea, Indonesia and the Philippines, and the latter for poultry meat. While Chinese meat imports remain high in the early part of the projection period, a gradual decline is projected in the second half of the projection period as pig meat production recovers from the ASF outbreak. While Chinese beef imports will continue to increase over the projection period.

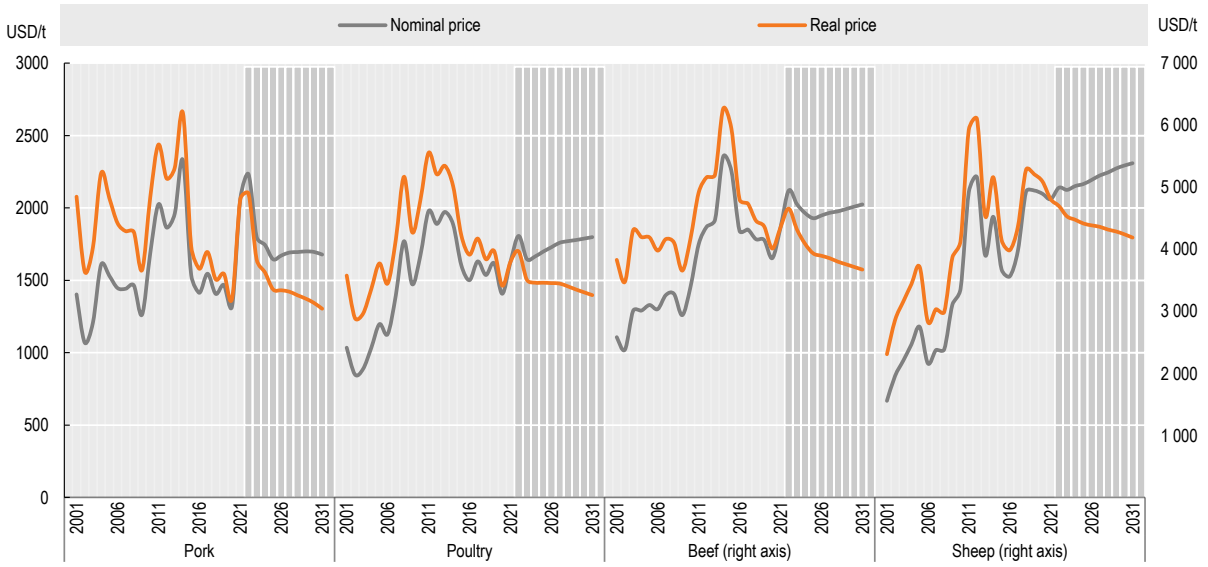
Sheep meat imports by the Near East region are projected to increase in alignment with rising demand and as a result Australia is expected to continue to increase its lamb production at the expense of mutton. In New Zealand, export growth for sheep meat is projected to be marginal with land use shifting from sheep farming to dairy.

6.3.4. Prices

Prices in real terms are expected to fluctuate around its long-term declining trend

Meat prices have rebounded from COVID-19 induced lows in 2020 and are expected to rise as higher feed costs are passed through the livestock value chain. However, they should remain well below their peaks of a decade ago (Figure 6.8). The projected rise in nominal prices for all meats will be uneven as each livestock species displays different dynamics due to the respective biological supply responses to recent shocks. In addition to higher feed costs, other inputs along the meat supply chain, such as packaging and transport, have become more expensive. The projections assume prices for meat to settle down as the supply chain begins to stabilise and feed costs return to trend levels. As a result, the ratio of nominal meat prices to feed prices will increase compared to recent years (Figure 6.9), returning to profitable levels before resuming the longer term downward trend as feed productivity gains are realised, such that less feed is required to produce a unit of meat.

Figure 6.8. World reference prices for meat -rising in nominal, but falling in real terms

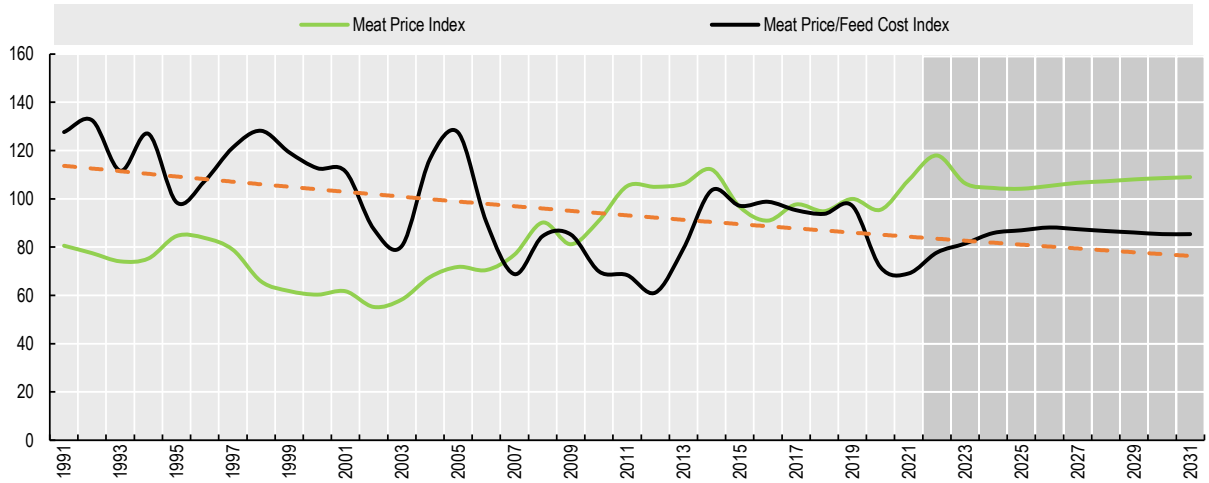


Note: Real prices are nominal world prices deflated by the US GDP deflator (2020=1). US Barrows and gilts, National base 51-52% lean c.w.e. Brazil: Export unit value for chicken (f.o.b.) product weight. US Choice steers, 5-area Direct c.w.e., Total all grades. New Zealand lamb price c.w.e., all grade average.
Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

StatLink https://stat.link/alucr8

All meat prices are projected to initially remain high as demand in high income countries recover from the COVID-19 pandemic before returning to longer term trends that are declining in real terms. The exception is *sheep meat*, the prices of which have displayed an upward trend as exports from New Zealand have been increasingly constrained by rising costs of pasture due to the profitability of forestry and competition from the beef and dairy sectors. The reference price for *pig meat* in heavily traded Pacific markets (US national base price) will remain high early in the projection period to meet strong demand, particularly from Southeast Asia, but supply responses and higher export supplies will exert downward pressure on prices. *Poultry* prices (Brazil fresh, chilled or frozen export prices) are expected to follow grain prices closely given the high share of feed costs in their production and the swift response of production to global rising demand. *Beef* prices (US choice steer prices) are projected to reflect higher processing (labour) and feed costs. Uncertainty on price developments have led farmers to scale back production initially, but prices are expected to remain higher as higher cattle inventories are retaining supplies in key exporting countries, including Argentina, Australia, Brazil and the United States.

Figure 6.9. FAO Food Price Index for meat and its ratio to feed prices



Note: Index average 2014-2016=100. Meat price Index: computed from average prices of four types of meat.
Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

StatLink https://stat.link/f5ye4m

6.4. Risks and uncertainties

Animal disease outbreaks remain the most significant risks in the meat sector

In the short term, the *Outlook* assumes that the impacts of COVID-19 on economic growth and on restrictions in the movement of people and goods will end and that recovery will start in 2022. But, together with the impacts of Russia's war against Ukraine, a delay to the end of the pandemic, a possible economic downturn and government policy responses, prospects for the meat sector may well deteriorate.

The livestock and meat sector regularly experience serious economic repercussions from disease outbreaks despite advances in public health and veterinary measures. Outbreaks which shock markets can occur quickly and can take years to fully resolve. The socio-economic costs of these disruptions vary by countries and situations depending on the importance of the loss of export markets, imports from an affected country, or when consumers reduce purchases because of health concerns. Costs on the global market may be significant but can be mitigated somewhat by supplies from alternative disease-free markets, or by following OIE protocols that localise disease impacts on trade. Animal diseases, even though they may not directly infect humans, can cause significant disruptions in livelihoods of rural communities and smallholders, impacting livestock productivity, food security and nutrition of the most vulnerable populations. On the other hand, some infectious animal diseases are also contagious to humans (zoonosis) or compromise food safety, posing direct public health concerns[4]. Additionally, the environment can also be impacted by disease outbreaks since animal morbidity and mortality generated by infections may raise livestock's emission of greenhouse gases, thus contributing to climate change. Maintaining the herd during and after the outbreaks would need more energy, thus resulting in rising emission rates from digestive processes (FAO, 2021[6]).[5] ASF, highly pathogenic avian influenza (HPAI), and foot and mouth disease (FMD) pose significant ongoing risks for meat markets. The *Outlook* assumes that recovery from ASF in East and Southeast Asia will be completed by 2031, but there is risk that this is not the case or that ASF emerges elsewhere. Investments to restructure and modernise production and processing facilities in the pig meat sector, and the successful development of a vaccine would have

significant implications for future production and trade. Bovine Spongiform Encephalopathy (BSE), which had previously impacted livestock markets for decades re-emerged at the end of 2021 in Brazil, temporarily halting exports to China, its main export market. It is assumed that this BSE outbreak will be contained and not affect Brazil's markets beyond 2022. If it is not contained the impact on Brazil's meat sector and on world markets would be significant.

Assumptions regarding productivity improvements and climate change policies will affect the meat sector's contribution to climate change. Since meat is a significant user of resources – of land, feed and water – lower demand along with productivity improvements would imply lower need for these inputs. Specifically, this means lower animal inventories and fewer feed inputs (meat production in 2019-21 used around 38% of the calories produced by the crops covered in this *Outlook*). Lower production would also imply lower GHG emissions from meat production compared to past decades. The role of the meat sector is critical in discussions on climate change, and future policies addressing environmental change may have important consequences for production and trade.

The *Outlook* assumes that consumer preferences will evolve slowly. Consequently, dietary preferences for lower (particularly red and processed) meat consumption are assumed to be adopted by a small but growing part of the population concentrated mainly in high income countries, and therefore will not significantly affect global meat consumption over the next decade. But preferences may change more than assumed, and more quickly, partly depending on relative prices. The development of novel alternative proteins as substitutes for traditional animal-based foods (meat and milk) may be attractive to meet the nutritional needs and food demands of an increasing population, which some consumers may consider to be more healthy and sustainable. Advocates for novel alternative proteins foresee benefits that include better nutrition and health, and a reduction in greenhouse-gas emissions. However, scientific evidence on such benefits is not conclusive. In any case, these products are unlikely to fit significantly into the *Outlook's* ten-year horizon. Central questions yet to be fully addressed concern the role of government regulations required to ensure safety while encouraging the emergence and development of innovations. Several aspects need to be explored such as growth opportunities, potential barriers to competition and trade, impact on the conventional livestock and meat processing sector, implications for the supply chain, environmental impacts, and consumer acceptance. A key element on the prospects of alternative proteins will be their price relative to conventional protein sources from livestock.

Finally, consumers are expressing concerns about meat production systems, in particular animal welfare including traceability and the growing preference for antimicrobial-free meat due to the global risks associated with antimicrobial resistance. Antimicrobial-free and, more broadly organic, meat production systems are being adopted by an increasing number of producers and will affect global meat markets to the extent to which consumers are willing to pay a premium for such meat.

Notes

[1] Asian domestic water buffalo use in dairy production

[2] Crop-Livestock-Forest Integration (ILPF) is a sustainable production strategy that integrates agricultural, livestock and forestry activities in the same area, whether in consortium, succession or rotation. https://www.gov.br/agricultura/pt-br/assuntos/sustentabilidade/plano-abc/arquivo-publicacoes-plano-abc/abc-english.pdf

[3] See, for example, https://www.fao.org/partnerships/leap/en.

[4] Over 70% of human diseases originate in animals, and our expanding human population is inhabiting more wilderness while becoming ever more reliant on animals for food. FAO. 2013. World Livestock 2013 – Changing disease landscapes. Rome.

[5] FAO (2021), *The Impact of Disasters and Crises on Agriculture and Food Security: 2021*, Rome. https://doi.org/10.4060/cb3673en.

ANNEX C

Table C.4. World meat projections

Calendar year

		Average 2019-21est	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
WORLD												
BEEF AND VEAL												
Production	kt cwe	70 556	72 217	72 937	73 339	73 784	74 220	74 690	75 139	75 539	75 956	76 384
Consumption	kt cwe	70 684	72 234	72 939	73 342	73 776	74 216	74 688	75 141	75 542	75 958	76 386
PIGMEAT												
Production	kt cwe	110 613	120 822	123 512	124 026	124 758	125 380	125 992	126 713	127 441	128 185	128 895
Consumption	kt cwe	110 471	120 819	123 440	124 024	124 757	125 378	125 988	126 710	127 435	128 184	128 893
POULTRY MEAT												
Production	kt rtc	132 476	135 929	137 777	139 715	141 848	143 808	145 748	147 725	149 733	151 788	153 850
Consumption	kt rtc	130 832	135 959	137 714	139 637	141 821	143 808	145 757	147 723	149 743	151 784	153 846
SHEEP MEAT												
Production	kt cwe	15 640	16 201	16 455	16 670	16 877	17 086	17 295	17 499	17 697	17 893	18 076
Consumption	kt cwe	15 695	16 209	16 463	16 678	16 884	17 093	17 302	17 505	17 704	17 899	18 081
TOTAL MEAT												
Per capita consumption[1]	kg rwt	34.1	35.2	35.4	35.4	35.5	35.5	35.5	35.5	35.5	35.6	35.6
DEVELOPED COUNTRIES												
BEEF AND VEAL												
Production	kt cwe	31 108	31 160	31 428	31 493	31 567	31 632	31 700	31 767	31 817	31 894	31 969
Consumption	kt cwe	30 033	30 063	30 071	30 022	30 050	30 074	30 100	30 125	30 122	30 145	30 163
PIGMEAT												
Production	kt cwe	47 338	47 819	47 642	47 080	46 945	46 969	47 034	47 125	47 202	47 285	47 343
Consumption	kt cwe	41 216	41 842	41 993	41 979	42 068	42 232	42 394	42 554	42 683	42 821	42 902
POULTRY MEAT												
Production	kt rtc	52 469	52 811	53 148	53 387	53 737	54 033	54 373	54 729	55 048	55 419	55 810
Consumption	kt rtc	49 184	50 073	50 460	50 806	51 271	51 587	51 885	52 176	52 483	52 801	53 140
SHEEP MEAT												
Production	kt cwe	3 417	3 467	3 486	3 508	3 533	3 557	3 580	3 603	3 625	3 646	3 666
Consumption	kt cwe	2 709	2 742	2 750	2 762	2 776	2 789	2 800	2 810	2 819	2 828	2 836
TOTAL MEAT												
Per capita consumption[1]	kg rwt	69.0	69.5	69.6	69.7	69.9	70.0	70.2	70.4	70.5	70.7	70.8
DEVELOPING COUNTRIES												
BEEF AND VEAL												
Production	kt cwe	39 449	41 057	41 509	41 846	42 217	42 587	42 990	43 372	43 722	44 062	44 415
Consumption	kt cwe	40 652	42 171	42 868	43 320	43 726	44 142	44 587	45 016	45 420	45 813	46 223
PIGMEAT												
Production	kt cwe	63 274	73 003	75 870	76 946	77 812	78 411	78 957	79 588	80 239	80 901	81 552
Consumption	kt cwe	69 256	78 977	81 447	82 045	82 689	83 146	83 594	84 156	84 752	85 363	85 991
POULTRY MEAT												
Production	kt rtc	80 006	83 118	84 629	86 329	88 111	89 774	91 375	92 996	94 685	96 369	98 040
Consumption	kt rtc	81 648	85 886	87 253	88 831	90 550	92 221	93 872	95 547	97 260	98 983	100 706
SHEEP MEAT												
Production	kt cwe	12 222	12 734	12 970	13 162	13 344	13 529	13 715	13 896	14 073	14 247	14 410
Consumption	kt cwe	12 986	13 467	13 713	13 915	14 109	14 304	14 503	14 695	14 885	15 071	15 245
TOTAL MEAT												
Per capita consumption[1]	kg rwt	26.2	27.6	27.9	27.9	28.0	28.0	28.1	28.1	28.2	28.3	28.3
OECD[2]												
BEEF AND VEAL												
Production	kt cwe	29 879	29 850	30 113	30 186	30 255	30 302	30 346	30 390	30 420	30 475	30 527
Consumption	kt cwe	29 055	29 108	29 080	29 052	29 089	29 128	29 167	29 205	29 215	29 252	29 283
PIGMEAT												
Production	kt cwe	45 191	45 516	45 350	44 783	44 624	44 643	44 703	44 788	44 860	44 937	44 990
Consumption	kt cwe	40 331	40 861	41 062	41 068	41 146	41 318	41 488	41 658	41 798	41 944	42 033
POULTRY MEAT												
Production	kt rtc	52 976	53 505	53 906	54 287	54 735	55 106	55 505	55 922	56 318	56 773	57 253
Consumption	kt rtc	49 658	50 935	51 343	51 748	52 265	52 641	53 008	53 364	53 734	54 114	54 512
SHEEP MEAT												
Production	kt cwe	2 442	2 498	2 513	2 526	2 538	2 552	2 565	2 577	2 589	2 600	2 610
Consumption	kt cwe	1 772	1 802	1 805	1 807	1 809	1 812	1 814	1 815	1 814	1 814	1 812
TOTAL MEAT												
Per capita consumption[1]	kg rwt	69.5	70.2	70.3	70.4	70.6	70.7	70.9	71.0	71.2	71.3	71.4

Note: Calendar Year; except year ending 30 June for New Zealand in aggregates. Average 2019-21est: Data for 2021 are estimated. Prices are in nominal terms.

1. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.
2. Excludes Iceland and Costa Rica but includes all EU member countries.

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

ANNEX C

Table C.25.1. Meat projections: Production and trade

Calendar year

	PRODUCTION (kt cwe)[4]		Growth (%)[5]		IMPORTS (kt cwe)[6]		Growth (%)[5]		EXPORTS (kt cwe)[6]		Growth (%)[5]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**329 284**	**377 205**	**1.18**	**0.95**	**37 563**	**40 419**	**3.97**	**0.33**	**38 942**	**40 037**	**3.18**	**0.31**
NORTH AMERICA	52 514	55 591	1.99	0.65	2 833	3 082	2.52	0.01	10 351	10 482	2.29	0.45
Canada	5 202	5 431	1.85	0.43	694	809	-0.15	0.99	2 235	2 264	3.12	0.12
United States	47 312	50 160	2.00	0.68	2 139	2 273	3.56	-0.32	8 116	8 218	2.07	0.54
LATIN AMERICA	54 816	61 613	1.60	0.91	4 960	5 899	4.00	0.98	10 263	11 608	4.20	1.01
Argentina	6 107	6 754	2.37	1.00	42	39	1.54	0.40	986	1 238	10.81	1.90
Brazil	27 567	29 697	1.18	0.54	49	45	-2.50	-0.01	7 009	7 553	3.02	0.94
Chile	1 576	1 796	1.06	0.90	675	770	10.84	0.25	471	506	6.34	0.21
Colombia	2 930	3 680	2.91	1.85	247	350	11.55	1.48	45	85	11.36	1.55
Mexico	7 386	8 127	2.93	0.78	2 243	2 670	4.30	1.25	579	654	11.45	1.22
Paraguay	647	1 004	6.03	2.66	35	36	3.66	0.33	376	666	3.87	3.16
Peru	2 141	2 767	3.94	2.33	109	97	13.87	-3.46	1	1	-27.87	0.53
EUROPE	64 591	63 718	1.76	-0.23	4 875	5 003	-3.55	-0.10	10 231	8 645	5.65	-1.71
European Union[1]	44 789	43 247	1.38	-0.47	1 402	1 498	-1.77	0.56	7 728	6 343	5.12	-2.11
United Kingdom	4 003	3 911	1.74	-0.28	1 730	1 975	0.82	0.61	875	651	2.15	-2.80
Russia	10 655	11 339	4.05	0.48	700	399	-14.22	-5.48	592	500	30.25	0.58
Ukraine	2 236	2 279	0.53	0.63	411	396	0.93	-0.35	488	547	16.30	0.77
AFRICA	18 023	22 687	2.36	2.28	2 949	4 933	1.65	3.74	330	348	2.25	0.68
Egypt	2 158	3 084	1.34	3.49	321	383	-3.23	1.04	4	2	-0.47	-1.16
Ethiopia	790	938	3.56	1.57	1	2	5.13	11.96	14	17	-0.53	3.83
Nigeria	1 223	1 396	1.28	1.34	7	16	13.78	4.18	0	0	..	..
South Africa	3 458	4 146	2.23	1.51	530	451	1.03	-0.88	149	222	0.81	3.85
ASIA	132 982	166 333	0.35	1.39	21 363	20 806	7.34	-0.39	5 030	5 783	1.82	1.57
China[2]	75 416	94 292	-1.26	0.91	8 237	6 198	23.83	-2.60	708	607	-2.24	-0.27
India	7 475	10 394	1.90	2.76	2	2	4.13	0.34	1 347	1 444	-2.45	0.16
Indonesia	4 675	5 805	8.36	1.96	250	356	20.55	1.81	3	3	-6.16	1.34
Iran	3 033	3 825	1.34	1.78	135	117	0.28	2.56	75	146	-1.92	5.53
Japan	3 445	3 354	0.76	-0.12	3 105	3 093	2.60	-0.09	19	23	7.72	0.24
Kazakhstan	1 010	1 235	4.00	1.15	321	382	1.36	1.49	28	32	26.29	-1.44
Korea	2 680	2 713	2.57	0.14	1 419	1 621	5.72	0.70	62	51	6.56	-0.75
Malaysia	2 015	2 587	1.47	2.06	340	404	3.24	1.29	221	221	5.50	-1.16
Pakistan	4 723	6 462	6.66	2.52	2	2	-12.82	0.21	81	55	4.27	-2.83
Philippines	3 075	4 280	-0.55	4.54	713	1 175	10.84	1.00	7	8	-10.64	-0.22
Saudi Arabia	915	1 323	7.28	3.26	841	823	-3.60	-0.91	61	68	-1.16	1.15
Thailand	3 128	3 612	0.78	1.60	30	34	-7.11	-0.02	1 313	1 682	6.32	2.31
Turkey	3 400	4 137	3.02	2.29	74	83	-1.61	-0.56	716	1 155	7.11	5.93
Viet Nam	5 435	7 025	3.18	2.03	770	518	-3.07	-2.58	35	25	5.96	1.36
OCEANIA	6 357	7 262	0.29	1.11	582	696	3.12	1.22	2 737	3 171	-1.46	1.25
Australia	4 768	5 598	-0.02	1.31	379	424	2.74	0.64	1 629	2 068	-3.31	1.81
New Zealand	1 450	1 511	1.31	0.40	82	97	4.89	1.25	1 105	1 100	1.90	0.29
DEVELOPED COUNTRIES	**134 332**	**138 788**	**1.79**	**0.29**	**12 658**	**13 248**	**-0.21**	**0.08**	**23 544**	**22 594**	**3.09**	**-0.31**
DEVELOPING COUNTRIES	**194 952**	**238 417**	**0.78**	**1.36**	**24 906**	**27 171**	**6.79**	**0.45**	**15 398**	**17 442**	**3.33**	**1.17**
LEAST DEVELOPED COUNTRIES (LDC)	11 268	14 605	3.00	2.55	1 219	2 487	2.16	5.36	82	47	14.58	-5.19
OECD[3]	**130 488**	**135 381**	**1.73**	**0.34**	**14 475**	**16 013**	**2.75**	**0.49**	**23 607**	**23 133**	**2.98**	**-0.11**
BRICS	**124 570**	**149 868**	**-0.10**	**0.93**	**9 518**	**7 095**	**10.98**	**-2.68**	**9 803**	**10 327**	**2.29**	**0.79**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Gross indigenous production.
5. Least-squares growth rate (see glossary).
6. Excludes trade of live animals.

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

Table C.25.2. Meat projections: Consumption, food

Calendar year

	CONSUMPTION (kt cwe)		Growth (%)[4]		FOOD (kg rwe/cap)[5]		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**327 683**	**377 206**	**1.25**	**0.96**	**34.1**	**35.6**	**0.21**	**0.09**
NORTH AMERICA	45 281	48 420	1.97	0.66	98.5	99.2	1.34	0.12
Canada	3 320	3 646	1.38	0.79	70.5	71.3	0.52	0.05
United States	41 961	44 774	2.02	0.65	101.7	102.5	1.41	0.13
LATIN AMERICA	49 061	55 424	1.32	0.90	60.9	63.4	0.47	0.19
Argentina	5 162	5 555	1.26	0.81	89.6	88.4	0.41	0.05
Brazil	20 519	22 088	0.68	0.39	77.7	79.2	0.07	-0.06
Chile	1 760	2 038	2.56	0.84	73.4	83.2	1.27	0.69
Colombia	3 080	3 882	3.35	1.85	49.6	59.6	2.29	1.45
Mexico	8 825	9 909	2.99	0.92	56.0	57.2	1.84	0.08
Paraguay	302	371	8.67	1.62	32.2	35.3	7.03	0.59
Peru	2 248	2 863	4.36	2.08	58.4	67.7	2.97	1.24
EUROPE	58 926	59 858	0.62	0.03	63.2	65.0	0.56	0.16
European Union[1]	38 136	38 178	0.59	-0.10	68.5	69.4	0.53	0.02
United Kingdom	4 857	5 235	1.34	0.42	58.0	60.1	0.76	0.08
Russia	10 775	11 238	0.76	0.19	59.8	63.7	0.75	0.43
Ukraine	2 154	2 125	-1.55	0.40	40.4	43.0	-0.98	1.15
AFRICA	20 713	27 445	2.30	2.57	12.7	13.1	-0.18	0.29
Egypt	2 509	3 496	0.56	3.16	20.0	23.3	-1.25	1.64
Ethiopia	753	918	3.97	1.74	5.1	4.8	1.44	-0.51
Nigeria	1 283	1 493	1.32	1.47	5.0	4.5	-1.19	-0.93
South Africa	3 778	4 295	1.80	1.16	52.6	53.2	0.41	0.15
ASIA	149 784	181 671	1.10	1.15	26.3	29.6	0.22	0.53
China[2]	82 995	99 809	-0.09	0.65	46.3	54.7	-0.51	0.54
India	6 118	8 941	3.12	3.25	3.7	5.0	2.10	2.51
Indonesia	5 053	6 317	8.75	1.93	15.7	17.8	7.77	1.08
Iran	3 080	3 780	1.50	1.69	31.0	34.4	0.10	0.79
Japan	6 530	6 425	1.59	-0.11	41.5	43.0	1.83	0.39
Kazakhstan	1 307	1 589	3.08	1.28	55.0	60.8	1.68	0.42
Korea	4 026	4 283	3.53	0.36	62.2	66.4	3.29	0.41
Malaysia	2 152	2 788	1.32	2.23	56.5	65.4	-0.01	1.22
Pakistan	4 634	6 399	6.68	2.58	16.6	19.2	4.71	0.92
Philippines	3 788	5 454	1.16	3.66	28.4	35.9	-0.09	2.47
Saudi Arabia	1 850	2 254	1.02	1.39	45.7	48.8	-1.10	0.25
Thailand	1 592	1 631	-3.09	0.70	18.5	18.9	-3.53	0.67
Turkey	2 778	3 082	1.66	1.11	26.9	28.2	0.15	0.56
Viet Nam	6 193	7 533	2.23	1.64	50.6	57.6	1.43	1.04
OCEANIA	3 918	4 389	2.45	0.87	75.6	75.0	1.01	-0.23
Australia	3 237	3 594	2.68	0.80	101.9	102.2	1.30	-0.13
New Zealand	424	469	1.12	0.69	72.2	74.2	0.38	0.04
DEVELOPED COUNTRIES	**123 141**	**129 040**	**1.32**	**0.38**	**69.0**	**70.8**	**0.97**	**0.21**
DEVELOPING COUNTRIES	**204 542**	**248 166**	**1.20**	**1.27**	**26.2**	**28.3**	**0.01**	**0.25**
LEAST DEVELOPED COUNTRIES (LDC)	12 448	17 161	3.06	2.95	11.2	12.3	0.72	0.81
OECD[3]	**120 817**	**127 640**	**1.63**	**0.44**	**69.5**	**71.4**	**1.14**	**0.20**
BRICS	**124 186**	**146 371**	**0.30**	**0.73**	**31.0**	**34.6**	**-0.35**	**0.30**

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).
5. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.

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

ANNEX C

Table C.26.1. Beef and veal projections: Production and trade

Calendar year

	PRODUCTION (kt cwe)[4]		Growth (%)[5]		IMPORTS (kt cwe)[6]		Growth (%)[5]		EXPORTS (kt cwe)[6]		Growth (%)[5]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**70 556**	**76 384**	**0.92**	**0.61**	**11 011**	**12 782**	**4.45**	**0.99**	**10 680**	**12 525**	**2.63**	**0.99**
NORTH AMERICA	13 590	14 111	1.47	0.33	1 696	1 800	2.86	0.16	1 981	2 231	4.50	0.88
Canada	1 534	1 575	1.80	0.20	223	304	-2.21	2.29	555	616	7.07	0.70
United States	12 056	12 536	1.43	0.35	1 474	1 496	3.89	-0.22	1 426	1 616	3.65	0.95
LATIN AMERICA	18 041	19 987	0.47	0.56	808	885	0.65	0.46	4 074	5 141	7.28	1.19
Argentina	3 101	3 415	2.04	0.76	7	7	0.00	-0.05	715	936	20.16	1.86
Brazil	8 727	9 377	-0.63	0.29	39	41	-3.28	0.00	1 964	2 351	5.84	1.05
Chile	235	255	1.00	0.55	369	423	8.71	0.79	23	21	18.48	-0.78
Colombia	818	890	-1.33	0.35	8	22	13.28	2.12	44	85	15.13	1.55
Mexico	2 054	2 178	1.73	0.52	126	115	-1.70	-0.65	271	300	9.13	1.39
Paraguay	530	851	5.42	2.80	5	4	12.03	-0.17	364	654	3.50	3.24
Peru	188	203	-0.32	0.67	10	7	7.43	-2.99	0	0	..	..
EUROPE	10 771	10 177	0.48	-0.51	1 207	1 134	-3.16	-0.81	1 098	1 177	3.93	0.47
European Union[1]	7 166	6 612	0.68	-0.76	338	390	0.07	1.18	591	644	3.84	0.63
United Kingdom	912	870	0.69	-0.15	333	387	1.13	0.54	152	111	1.06	-1.13
Russia	1 634	1 669	0.13	0.17	372	196	-9.43	-5.66	75	85	38.86	-1.22
Ukraine	352	288	-2.19	-0.97	7	9	4.20	-1.33	39	52	7.89	3.16
AFRICA	6 373	7 660	1.20	1.86	489	917	-2.14	5.12	90	136	-3.08	5.38
Egypt	566	808	-4.50	2.17	294	366	2.81	0.88	1	1	15.43	-0.08
Ethiopia	445	504	2.12	1.24	0	0	..	..	0	0	31.92	..
Nigeria	277	296	-0.98	0.62	2	3	-3.69	0.91	0	0	..	..
South Africa	1 096	1 299	2.37	1.47	10	10	-19.92	1.91	56	127	4.50	8.48
ASIA	18 719	20 966	1.50	0.90	6 773	8 012	8.55	1.13	1 681	1 739	-1.53	0.00
China[2]	6 740	7 216	1.31	0.51	2 536	3 255	42.13	0.85	16	20	-11.05	0.03
India	2 425	2 683	-0.73	0.35	0	0	..	..	1 330	1 433	-2.40	0.18
Indonesia	386	421	-2.10	1.03	246	348	21.62	1.78	1	1	-3.53	-0.14
Iran	483	606	3.39	0.69	97	62	-3.82	8.00	6	7	12.32	-1.59
Japan	477	460	-0.77	-0.43	859	844	2.36	0.00	9	13	30.46	0.00
Kazakhstan	515	592	4.23	1.18	66	71	0.20	0.35	9	7	38.12	-0.90
Korea	294	309	-1.53	0.48	569	610	7.65	0.46	5	4	0.86	-1.98
Malaysia	29	33	0.40	0.78	199	227	1.39	0.82	11	13	-0.66	-0.81
Pakistan	2 306	2 907	5.01	1.96	1	1	-6.29	0.39	67	41	7.11	-3.55
Philippines	180	166	-7.48	-0.67	171	274	5.73	3.61	4	4	-1.51	-1.20
Saudi Arabia	41	44	-1.64	1.16	172	213	0.62	1.27	11	9	-10.53	-1.26
Thailand	185	170	-3.21	-0.06	25	30	-4.89	-0.04	46	51	-1.69	0.04
Turkey	974	1 044	2.74	1.61	6	3	-8.86	-0.50	28	69	4.96	2.29
Viet Nam	448	522	3.35	0.83	370	275	-9.49	1.68	1	1	37.26	-0.16
OCEANIA	3 062	3 484	-1.10	1.21	37	33	0.80	0.00	1 756	2 101	-2.76	1.59
Australia	2 329	2 730	-1.99	1.47	18	14	5.95	0.00	1 103	1 460	-5.22	2.18
New Zealand	724	747	2.13	0.35	10	10	1.32	0.02	650	638	2.98	0.40
DEVELOPED COUNTRIES	**31 108**	**31 969**	**0.96**	**0.25**	**4 076**	**4 162**	**0.57**	**-0.01**	**4 911**	**5 657**	**1.34**	**1.16**
DEVELOPING COUNTRIES	**39 449**	**44 415**	**0.89**	**0.87**	**6 935**	**8 620**	**7.50**	**1.51**	**5 770**	**6 868**	**3.86**	**0.86**
LEAST DEVELOPED COUNTRIES (LDC)	3 848	4 658	2.04	1.90	89	340	-4.05	9.95	13	5	0.51	-8.64
OECD[3]	**29 879**	**30 527**	**0.85**	**0.21**	**4 530**	**4 875**	**3.17**	**0.44**	**4 861**	**5 581**	**1.49**	**1.10**
BRICS	**20 622**	**22 245**	**0.17**	**0.43**	**2 957**	**3 502**	**14.70**	**0.34**	**3 442**	**4 016**	**2.06**	**0.83**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Gross indigenous production.
5. Least-squares growth rate (see glossary).
6. Excludes trade of live animals.

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

Table C.26.2. Beef and veal projections: Consumption, food

Calendar year

	CONSUMPTION (kt cwe)		Growth (%)[4]		FOOD (kg rwe/cap)[5]		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**70 684**	**76 386**	**1.12**	**0.61**	**6.4**	**6.2**	**0.00**	**-0.29**
NORTH AMERICA	13 556	13 921	1.19	0.20	25.7	24.8	0.51	-0.36
Canada	1 012	1 079	0.39	0.54	18.8	18.4	-0.57	-0.23
United States	12 544	12 842	1.26	0.17	26.5	25.6	0.60	-0.37
LATIN AMERICA	14 300	15 244	-1.01	0.35	15.3	15.1	-1.97	-0.38
Argentina	2 393	2 487	-0.57	0.38	37.1	35.2	-1.54	-0.42
Brazil	6 714	6 969	-1.85	0.00	22.1	21.7	-2.63	-0.47
Chile	560	635	4.63	0.77	20.5	22.8	3.41	0.61
Colombia	728	763	-2.06	0.29	10.0	10.0	-3.29	-0.18
Mexico	1 661	1 751	1.08	0.48	9.0	8.6	-0.09	-0.36
Paraguay	168	197	10.60	1.46	16.5	17.2	9.17	0.41
Peru	198	210	-0.02	0.53	4.2	4.1	-1.44	-0.32
EUROPE	10 660	9 973	-0.57	-0.58	10.0	9.4	-0.70	-0.47
European Union[1]	6 680	6 196	0.23	-0.67	10.5	9.8	0.11	-0.58
United Kingdom	1 093	1 145	0.76	0.18	11.3	11.3	0.14	-0.17
Russia	1 952	1 787	-3.52	-0.60	9.4	8.8	-3.67	-0.38
Ukraine	314	239	-3.13	-1.71	5.0	4.1	-2.65	-1.03
AFRICA	6 878	8 625	1.02	2.16	3.6	3.5	-1.51	-0.13
Egypt	891	1 204	-2.47	1.70	6.1	6.9	-4.49	0.09
Ethiopia	421	500	2.48	1.58	2.6	2.4	-0.22	-0.68
Nigeria	329	375	-0.74	1.17	1.1	1.0	-3.29	-1.23
South Africa	987	1 103	0.60	1.06	11.7	11.6	-0.82	0.04
ASIA	24 222	27 586	3.42	0.99	3.7	3.9	2.45	0.34
China[2]	9 358	10 474	5.47	0.55	4.6	5.0	4.97	0.43
India	1 095	1 250	2.24	0.54	0.6	0.6	1.15	-0.28
Indonesia	777	936	3.54	1.26	2.0	2.2	2.32	0.40
Iran	577	662	2.90	1.22	4.8	5.0	1.54	0.31
Japan	1 326	1 293	1.19	-0.16	7.3	7.5	1.40	0.35
Kazakhstan	574	659	3.54	1.10	21.4	22.2	2.10	0.21
Korea	854	914	3.45	0.48	11.7	12.5	3.18	0.53
Malaysia	233	263	0.73	0.85	5.0	5.1	-0.61	-0.19
Pakistan	2 230	2 857	4.94	2.08	7.1	7.5	2.80	0.38
Philippines	354	443	-2.14	1.78	2.3	2.5	-3.56	0.60
Saudi Arabia	202	249	1.20	1.35	4.1	4.4	-0.91	0.21
Thailand	121	111	-3.30	-0.14	1.2	1.1	-3.63	-0.17
Turkey	974	994	1.77	1.51	8.1	7.8	0.27	0.98
Viet Nam	838	809	-3.35	1.10	6.0	5.4	-4.31	0.47
OCEANIA	1 069	1 037	2.37	-0.01	17.9	15.3	0.93	-1.14
Australia	976	949	3.21	0.05	26.8	23.4	1.86	-0.90
New Zealand	76	75	-3.84	-0.55	11.0	10.1	-4.73	-1.22
DEVELOPED COUNTRIES	**30 033**	**30 163**	**0.71**	**0.04**	**14.7**	**14.4**	**0.30**	**-0.14**
DEVELOPING COUNTRIES	**40 652**	**46 223**	**1.43**	**0.99**	**4.5**	**4.6**	**0.14**	**-0.06**
LEAST DEVELOPED COUNTRIES (LDC)	3 992	5 111	2.26	2.30	3.1	3.2	-0.08	0.14
OECD[3]	**29 055**	**29 283**	**1.05**	**0.08**	**14.6**	**14.2**	**0.51**	**-0.18**
BRICS	**20 106**	**21 583**	**1.17**	**0.30**	**4.3**	**4.4**	**0.41**	**-0.16**

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).
5. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.

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

ANNEX C

Table C.27.1. Pigmeat projections: Production and trade

Calendar year

	PRODUCTION (kt cwe)[4]		Growth (%)[5]		IMPORTS (kt cwe)[6]		Growth (%)[5]		EXPORTS (kt cwe)[6]		Growth (%)[5]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**110 613**	**128 895**	**-0.48**	**0.63**	**11 617**	**10 470**	**6.37**	**-1.19**	**11 623**	**10 201**	**5.07**	**-1.32**
NORTH AMERICA	14 690	15 415	2.45	0.82	729	839	2.12	-0.44	4 655	4 644	3.82	0.27
Canada	2 189	2 191	1.56	0.01	271	278	2.51	-0.04	1 535	1 488	2.93	-0.21
United States	12 501	13 225	2.61	0.96	458	562	1.93	-0.63	3 119	3 156	4.28	0.50
LATIN AMERICA	8 744	9 814	2.93	0.87	1 781	2 263	8.09	1.51	1 477	1 366	8.86	-0.51
Argentina	647	730	7.53	0.94	28	25	7.76	1.36	33	18	24.46	-1.35
Brazil	4 254	4 578	2.98	0.62	2	1	-8.85	-2.08	851	699	8.32	-1.23
Chile	565	622	0.32	0.21	153	183	22.65	0.15	262	276	6.46	-0.15
Colombia	441	577	8.26	1.68	127	199	14.00	1.61	0	0	..	..
Mexico	1 624	1 772	3.80	0.53	1 061	1 387	6.78	2.07	302	345	14.27	1.00
Paraguay	63	80	9.60	1.47	4	5	5.66	0.41	6	5	15.42	-0.52
Peru	173	225	4.26	2.08	10	27	6.80	9.41	0	0	..	..
EUROPE	30 405	29 573	1.51	-0.54	1 231	1 343	-6.85	0.84	5 237	3 882	5.94	-3.35
European Union[1]	23 397	22 075	0.94	-0.81	160	177	0.99	-0.01	4 727	3 561	6.21	-3.44
United Kingdom	933	952	2.21	-0.14	748	762	0.40	0.28	269	222	4.28	-2.00
Russia	4 210	4 639	6.21	0.51	69	57	-31.00	3.05	165	30	25.99	-2.75
Ukraine	707	778	-0.20	0.56	42	47	-11.39	1.54	5	8	-15.75	-0.22
AFRICA	1 593	1 955	3.58	2.09	275	531	2.19	5.83	30	28	2.62	-2.97
Egypt	1	1	4.74	-1.70	2	3	31.97	3.19	0	0	..	..
Ethiopia	2	3	1.90	1.90	0	1	..	..	0	0	..	..
Nigeria	296	323	2.30	1.28	5	13	33.26	4.97	0	0	..	..
South Africa	303	364	4.68	0.80	31	40	-1.99	3.39	26	23	2.77	-3.28
ASIA	54 612	71 492	-2.59	1.03	7 161	4 982	12.13	-3.36	191	245	-4.90	2.57
China[2]	42 580	57 051	-3.41	0.78	4 044	1 749	25.69	-6.60	69	95	-11.45	2.68
India	342	374	-0.47	1.24	1	1	2.94	0.10	1	2	25.10	-0.10
Indonesia	252	303	-2.36	1.84	3	6	3.52	3.64	0	0	..	..
Iran	0	0	..	..	1	0	157.39	..	1	0	125.69	..
Japan	1 313	1 282	0.25	-0.06	1 340	1 338	2.84	0.01	2	4	5.30	1.49
Kazakhstan	88	92	-1.96	-0.10	40	61	-1.20	1.92	1	1	17.28	-0.33
Korea	1 380	1 372	2.36	-0.01	631	760	4.32	0.85	6	3	8.15	-5.85
Malaysia	220	227	0.20	0.53	23	36	5.85	3.85	4	3	-6.84	-1.69
Pakistan	0	0	..	..	0	0	..	..	0	0	..	..
Philippines	1 432	2 158	-2.60	6.81	184	129	7.82	-12.50	2	3	-4.37	1.63
Saudi Arabia	0	0	..	..	17	16	13.96	0.00	2	2	15.77	0.00
Thailand	1 105	1 242	0.75	1.64	1	1	-18.71	0.27	45	65	5.17	7.25
Turkey	0	0	..	..	20	27	4.69	0.00	20	27	4.69	0.00
Viet Nam	3 534	4 546	1.46	2.03	179	31	71.96	-21.88	16	14	-4.00	3.08
OCEANIA	569	647	2.05	1.07	441	512	3.14	0.92	33	36	2.60	0.49
Australia	426	489	2.67	1.08	361	409	2.58	0.67	31	35	2.15	0.56
New Zealand	45	47	-0.88	0.54	69	83	5.94	1.47	1	1	..	0.01
DEVELOPED COUNTRIES	**47 338**	**47 343**	**1.76**	**-0.07**	**3 843**	**4 175**	**-1.44**	**0.35**	**9 958**	**8 595**	**4.88**	**-1.53**
DEVELOPING COUNTRIES	**63 274**	**81 552**	**-1.91**	**1.05**	**7 773**	**6 295**	**13.28**	**-2.09**	**1 665**	**1 606**	**6.23**	**-0.10**
LEAST DEVELOPED COUNTRIES (LDC)	2 195	2 948	4.88	3.11	146	334	1.63	7.07	1	1	-5.76	-0.53
OECD[3]	**45 191**	**44 990**	**1.60**	**-0.09**	**5 425**	**6 189**	**3.68**	**0.62**	**10 281**	**9 124**	**5.16**	**-1.38**
BRICS	**51 689**	**67 006**	**-2.36**	**0.75**	**4 146**	**1 849**	**13.37**	**-6.28**	**1 112**	**849**	**6.67**	**-1.00**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Gross indigenous production.
5. Least-squares growth rate (see glossary).
6. Excludes trade of live animals.

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

Table C.27.2. Pigmeat projections: Consumption, food

Calendar year

	CONSUMPTION (kt cwe)		Growth (%)[4]		FOOD (kg rwe/cap)[5]		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**110 471**	**128 893**	**-0.39**	**0.63**	**11.1**	**11.7**	**-1.49**	**-0.26**
NORTH AMERICA	10 773	11 607	1.92	0.97	22.8	23.1	1.23	0.41
Canada	775	832	0.13	0.27	16.0	15.8	-0.82	-0.49
United States	9 998	10 775	2.06	1.03	23.6	23.9	1.41	0.48
LATIN AMERICA	9 070	10 718	2.99	1.20	10.8	11.8	1.99	0.47
Argentina	642	737	6.94	1.02	11.1	11.6	5.90	0.22
Brazil	3 405	3 880	1.92	1.02	12.5	13.5	1.11	0.55
Chile	456	530	1.12	0.38	18.6	21.2	-0.06	0.22
Colombia	568	776	9.34	1.66	8.7	11.3	7.97	1.18
Mexico	2 405	2 821	4.03	1.20	14.5	15.5	2.83	0.35
Paraguay	61	80	8.89	1.55	6.7	7.7	7.48	0.50
Peru	183	252	4.43	2.62	4.3	5.4	2.94	1.75
EUROPE	26 382	27 017	0.25	0.00	27.5	28.4	0.11	0.11
European Union[1]	18 802	18 666	-0.08	-0.21	32.9	33.0	-0.20	-0.12
United Kingdom	1 413	1 490	0.89	0.38	16.2	16.4	0.26	0.03
Russia	4 109	4 660	2.16	0.56	22.0	25.4	2.00	0.79
Ukraine	746	820	-2.19	0.62	13.3	15.8	-1.70	1.32
AFRICA	1 838	2 458	3.36	2.86	1.1	1.1	0.76	0.55
Egypt	3	3	22.60	2.14	0.0	0.0	20.07	0.52
Ethiopia	2	4	1.11	5.47	0.0	0.0	-1.55	3.12
Nigeria	302	337	2.53	1.39	1.1	1.0	-0.11	-1.02
South Africa	308	381	3.98	1.36	4.0	4.5	2.52	0.34
ASIA	61 432	75 970	-1.53	0.66	10.4	11.9	-2.46	0.00
China[2]	46 506	58 607	-2.33	0.45	25.2	31.2	-2.79	0.33
India	341	373	-0.51	1.24	0.2	0.2	-1.57	0.42
Indonesia	241	300	-2.28	2.08	0.7	0.8	-3.42	1.21
Iran	0	0	..	..	0.0	0.0	23.39	-0.90
Japan	2 650	2 616	1.48	-0.03	16.3	17.0	1.69	0.47
Kazakhstan	127	152	-1.72	0.66	5.3	5.7	-3.09	-0.22
Korea	2 000	2 129	3.02	0.30	30.4	32.5	2.75	0.36
Malaysia	239	261	0.83	0.95	5.8	5.6	-0.51	-0.08
Pakistan	0	0	..	..	0.0	0.0	21.31	-1.67
Philippines	1 614	2 284	-1.47	4.09	11.5	14.3	-2.91	2.88
Saudi Arabia	15	14	15.48	0.00	0.3	0.3	13.07	-1.13
Thailand	849	883	-1.23	0.91	9.5	9.8	-1.56	0.87
Turkey	0	0	..	..	0.0	0.0	-1.48	-1.22
Viet Nam	3 698	4 565	2.19	1.40	29.6	34.0	1.18	0.76
OCEANIA	977	1 123	2.53	1.02	18.2	18.4	1.09	-0.12
Australia	756	863	2.68	0.90	23.1	23.7	1.34	-0.06
New Zealand	113	129	2.68	1.13	18.2	19.3	1.73	0.45
DEVELOPED COUNTRIES	**41 216**	**42 902**	**0.79**	**0.29**	**22.4**	**22.8**	**0.38**	**0.10**
DEVELOPING COUNTRIES	**69 256**	**85 991**	**-1.04**	**0.80**	**8.5**	**9.4**	**-2.30**	**-0.24**
LEAST DEVELOPED COUNTRIES (LDC)	2 351	3 293	4.62	3.44	2.1	2.3	2.22	1.25
OECD[3]	**40 331**	**42 033**	**1.10**	**0.32**	**22.5**	**22.8**	**0.56**	**0.06**
BRICS	**54 669**	**67 901**	**-1.78**	**0.50**	**13.2**	**15.5**	**-2.51**	**0.05**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).
5. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.

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

ANNEX C

Table C.28.1. Poultry meat projections: Production and trade

Calendar year

	PRODUCTION (kt rtc)		Growth (%)[4]		IMPORTS (kt rtc)		Growth (%)[4]		EXPORTS (kt rtc)		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**132 476**	**153 850**	**2.82**	**1.39**	**13 831**	**16 081**	**2.23**	**0.90**	**15 496**	**16 081**	**2.46**	**0.90**
NORTH AMERICA	24 146	25 969	2.03	0.73	253	281	-0.50	0.57	3 714	3 605	-0.32	0.42
Canada	1 462	1 648	2.36	1.25	180	205	-1.12	0.77	145	160	-4.76	1.04
United States	22 684	24 321	2.01	0.70	73	76	1.16	0.04	3 569	3 445	-0.10	0.39
LATIN AMERICA	27 575	31 315	2.00	1.16	2 358	2 741	2.84	0.74	4 685	5 067	1.03	1.30
Argentina	2 306	2 551	1.76	1.35	6	7	-10.44	-1.88	235	280	-2.24	2.32
Brazil	14 447	15 588	1.88	0.66	5	0	296.33	..	4 194	4 503	1.13	1.29
Chile	762	906	1.74	1.55	153	164	8.69	-0.91	180	205	5.41	0.91
Colombia	1 670	2 212	4.34	2.57	112	129	9.19	1.18	0	0	-42.05	..
Mexico	3 603	4 068	3.34	1.06	1 052	1 167	3.14	0.55	4	7	0.25	6.96
Paraguay	51	70	10.70	2.56	25	28	1.80	0.40	6	6	279.19	-0.40
Peru	1 742	2 301	4.60	2.56	88	64	15.96	-6.20	1	1	-27.90	0.54
EUROPE	22 128	22 669	2.90	0.30	2 194	2 334	-1.43	-0.07	3 733	3 433	6.02	-0.40
European Union[1]	13 587	13 896	2.62	0.21	756	827	-2.96	0.90	2 355	2 063	3.39	-0.44
United Kingdom	1 849	1 790	2.29	-0.47	564	748	2.05	1.27	361	249	2.61	-4.19
Russia	4 597	4 820	3.98	0.60	257	145	-9.31	-7.26	345	385	30.89	1.39
Ukraine	1 165	1 206	2.06	1.12	361	340	5.84	-0.56	443	486	19.96	0.56
AFRICA	6 716	8 917	3.42	2.83	2 174	3 477	3.30	3.14	178	145	6.86	-1.70
Egypt	1 533	2 199	5.61	4.06	25	14	-20.15	5.94	2	1	-4.95	-1.72
Ethiopia	64	78	0.25	1.73	1	1	..	0.35	0	0	..	..
Nigeria	238	281	2.22	1.58	0	0	..	..	0	0	..	..
South Africa	1 881	2 300	2.05	1.73	487	400	2.54	-1.26	65	68	-2.36	0.90
ASIA	50 311	63 108	3.57	2.03	6 771	7 121	3.16	0.32	3 130	3 781	4.83	2.33
China[2]	21 164	24 448	2.48	1.30	1 284	799	12.32	-4.70	622	493	-0.07	-0.76
India	3 862	6 379	4.23	4.37	1	1	22.88	0.73	5	3	-6.34	-3.74
Indonesia	3 897	4 931	11.50	2.10	0	0	-27.84	..	2	2	-6.39	1.83
Iran	2 223	2 865	1.57	2.33	24	55	-22.14	-1.38	67	139	-2.94	6.07
Japan	1 656	1 612	1.68	-0.08	884	888	2.59	-0.30	8	6	-1.26	0.00
Kazakhstan	235	372	9.53	1.90	216	250	2.29	1.75	16	23	22.55	-1.68
Korea	1 003	1 031	4.43	0.24	200	233	4.69	1.00	52	44	6.91	-0.07
Malaysia	1 765	2 326	1.68	2.24	85	103	7.50	1.19	206	206	6.36	-1.18
Pakistan	1 669	2 591	8.96	3.25	1	1	-15.91	0.12	9	8	10.24	-1.19
Philippines	1 430	1 913	3.59	3.00	358	771	15.92	5.56	1	2	-23.34	-0.42
Saudi Arabia	874	1 279	7.91	3.34	630	566	-4.40	-1.73	48	56	4.06	1.66
Thailand	1 836	2 197	1.31	1.72	3	3	-13.39	0.69	1 222	1 566	6.76	2.23
Turkey	2 308	2 973	3.34	2.65	47	53	2.79	-0.84	668	1 057	7.30	6.42
Viet Nam	1 432	1 933	8.73	2.38	221	212	2.10	2.71	17	10	61.08	-0.56
OCEANIA	1 598	1 872	2.84	1.24	82	127	7.30	3.06	57	50	1.38	0.41
Australia	1 333	1 574	2.69	1.27	0	0	..	..	40	35	-0.29	0.18
New Zealand	233	263	3.88	1.00	1	1	64.57	0.00	16	15	6.63	1.00
DEVELOPED COUNTRIES	**52 469**	**55 810**	**2.44**	**0.61**	**4 310**	**4 530**	**0.27**	**0.04**	**7 615**	**7 197**	**2.41**	**0.00**
DEVELOPING COUNTRIES	**80 006**	**98 040**	**3.07**	**1.86**	**9 522**	**11 551**	**3.21**	**1.27**	**7 881**	**8 884**	**2.52**	**1.70**
LEAST DEVELOPED COUNTRIES (LDC)	3 185	4 332	3.47	2.91	982	1 811	3.02	4.43	65	40	24.22	-4.16
OECD[3]	**52 976**	**57 253**	**2.45**	**0.75**	**4 074**	**4 552**	**1.43**	**0.53**	**7 414**	**7 290**	**1.61**	**0.63**
BRICS	**45 951**	**53 535**	**2.55**	**1.38**	**2 033**	**1 344**	**4.53**	**-4.16**	**5 230**	**5 452**	**1.72**	**1.08**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).

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

Table C.28.2. Poultry meat projections: Consumption, food

Calendar year

	CONSUMPTION (kt rtc)		Growth (%)[4]		FOOD (kg rwe/cap)[5]		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**130 832**	**153 846**	**2.80**	**1.39**	**14.8**	**15.8**	**1.66**	**0.49**
NORTH AMERICA	20 717	22 643	2.52	0.80	49.4	50.8	1.83	0.24
Canada	1 496	1 695	2.85	1.22	34.9	36.3	1.87	0.45
United States	19 220	20 949	2.50	0.77	51.1	52.4	1.84	0.23
LATIN AMERICA	25 248	28 990	2.26	1.09	34.1	36.0	1.28	0.36
Argentina	2 077	2 277	2.25	1.23	40.4	40.6	1.25	0.43
Brazil	10 258	11 085	2.21	0.42	42.5	43.4	1.40	-0.05
Chile	735	865	2.13	1.19	33.9	39.0	0.94	1.03
Colombia	1 782	2 342	4.63	2.49	30.9	38.4	3.32	2.00
Mexico	4 651	5 227	3.29	0.93	31.7	32.4	2.10	0.09
Paraguay	70	91	5.56	2.08	8.7	10.0	4.19	1.02
Peru	1 829	2 364	5.08	2.21	48.8	57.3	3.58	1.36
EUROPE	20 577	21 569	1.88	0.37	24.2	25.6	1.75	0.48
European Union[1]	11 978	12 660	2.05	0.36	23.7	25.2	1.93	0.45
United Kingdom	2 052	2 290	2.19	0.61	26.6	28.5	1.56	0.25
Russia	4 506	4 580	1.84	0.16	27.2	28.2	1.69	0.39
Ukraine	1 083	1 059	-0.50	0.80	21.8	23.0	0.00	1.49
AFRICA	8 712	12 249	3.34	2.99	5.8	6.3	0.74	0.67
Egypt	1 555	2 212	4.35	4.08	13.4	15.9	2.20	2.42
Ethiopia	64	79	0.30	1.72	0.5	0.5	-2.34	-0.55
Nigeria	238	281	2.22	1.58	1.0	0.9	-0.41	-0.83
South Africa	2 303	2 631	2.32	1.23	34.2	34.8	0.88	0.22
ASIA	53 954	66 446	3.46	1.82	10.3	11.8	2.49	1.16
China[2]	21 826	24 754	2.99	1.08	13.3	14.9	2.50	0.96
India	3 859	6 377	4.26	4.37	2.5	3.7	3.15	3.52
Indonesia	3 895	4 929	11.51	2.10	12.5	14.4	10.20	1.23
Iran	2 180	2 781	1.72	2.09	22.8	26.2	0.37	1.17
Japan	2 532	2 494	1.95	-0.16	17.6	18.3	2.16	0.34
Kazakhstan	435	600	5.20	2.00	20.4	25.4	3.74	1.10
Korea	1 152	1 221	4.36	0.39	19.8	21.0	4.09	0.44
Malaysia	1 643	2 224	1.44	2.57	44.7	53.7	0.09	1.52
Pakistan	1 661	2 584	8.92	3.26	6.6	8.5	6.70	1.54
Philippines	1 787	2 682	5.41	3.68	14.4	18.9	3.87	2.47
Saudi Arabia	1 457	1 789	1.17	1.49	36.8	39.7	-0.94	0.35
Thailand	618	634	-5.18	0.57	7.8	7.9	-5.51	0.54
Turkey	1 688	1 969	1.78	1.00	17.6	19.3	0.28	0.48
Viet Nam	1 636	2 134	6.51	2.43	14.8	17.9	5.45	1.79
OCEANIA	1 624	1 949	3.08	1.37	34.2	36.1	1.63	0.23
Australia	1 293	1 539	2.79	1.30	44.6	47.6	1.44	0.33
New Zealand	217	249	3.72	1.00	39.6	42.2	2.76	0.32
DEVELOPED COUNTRIES	**49 184**	**53 140**	**2.25**	**0.65**	**30.2**	**31.9**	**1.84**	**0.46**
DEVELOPING COUNTRIES	**81 648**	**100 706**	**3.15**	**1.80**	**11.4**	**12.5**	**1.84**	**0.75**
LEAST DEVELOPED COUNTRIES (LDC)	4 103	6 102	3.19	3.41	4.1	4.8	0.82	1.22
OECD[3]	**49 658**	**54 512**	**2.52**	**0.75**	**31.3**	**33.3**	**1.97**	**0.49**
BRICS	**42 752**	**49 428**	**2.75**	**1.22**	**11.6**	**12.7**	**1.98**	**0.76**

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).
5. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.

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

ANNEX C

Table C.29.1. Sheep meat projections: Production and trade

Calendar year

	PRODUCTION (kt cwe)[4]		Growth (%)[5]		IMPORTS (kt cwe)[6]		Growth (%)[5]		EXPORTS (kt cwe)[6]		Growth (%)[5]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**15 640**	**18 076**	**2.03**	**1.21**	**1 104**	**1 086**	**0.59**	**0.20**	**1 143**	**1 229**	**0.81**	**0.60**
NORTH AMERICA	88	96	-1.16	0.75	155	161	7.05	-0.19	2	2	-9.39	0.12
Canada	17	18	0.40	0.82	21	22	2.02	0.00	0	0	..	..
United States	71	78	-1.50	0.73	134	139	8.07	-0.22	2	1	-9.38	0.13
LATIN AMERICA	456	497	1.06	0.49	14	9	-10.04	0.20	27	34	1.98	-0.35
Argentina	53	57	-1.49	0.69	0	0	..	..	4	5	5.35	0.45
Brazil	139	154	2.56	0.79	3	2	-11.34	1.73	0	0	..	..
Chile	14	13	-0.66	-1.45	0	0	..	..	6	5	1.03	-2.33
Colombia	1	1	3.73	-0.09	0	0	..	..	0	0	..	..
Mexico	105	110	0.98	0.40	4	1	-17.11	-1.76	1	2	..	0.00
Paraguay	3	3	-4.80	0.82	0	0	..	..	0	0	..	..
Peru	38	38	-1.07	-0.29	0	0	..	..	0	0	..	..
EUROPE	1 288	1 299	0.63	0.20	243	191	-3.02	-2.25	162	152	0.47	0.51
European Union[1]	640	664	0.49	0.44	149	104	-2.03	-2.78	55	76	5.61	3.62
United Kingdom	308	300	0.43	0.03	85	78	-3.74	-1.67	94	68	-2.52	-2.21
Russia	215	210	1.59	-0.20	2	1	-20.37	-2.54	6	0	79.78	..
Ukraine	12	7	-5.19	-2.49	0	1	..	-1.39	0	0	..	..
AFRICA	3 341	4 156	2.05	2.01	12	8	-21.78	-1.54	33	39	-0.80	1.43
Egypt	59	76	-10.29	2.56	0	0	-34.48	..	0	0	..	..
Ethiopia	279	352	7.45	2.01	0	0	..	..	14	17	-0.91	4.18
Nigeria	411	497	1.80	1.70	0	0	..	..	0	0	..	..
South Africa	177	182	-0.14	0.49	3	1	-20.88	-6.52	2	5	3.52	4.95
ASIA	9 339	10 768	2.57	1.15	658	692	3.69	1.11	28	18	-6.96	0.00
China[2]	4 932	5 578	2.51	1.01	374	396	9.48	0.51	0	0	-32.25	..
India	845	959	1.63	1.18	0	0	..	..	11	6	-7.18	-2.34
Indonesia	140	150	3.90	0.64	2	1	-0.03	3.52	0	0	..	..
Iran	327	355	-2.59	-0.37	13	0	0.18	..	0	0	..	..
Japan	0	0	..	..	22	22	0.10	-0.33	0	0	..	..
Kazakhstan	172	179	1.30	0.26	0	0	..	..	2	1	169.95	-0.28
Korea	2	2	5.38	0.00	18	18	17.78	-0.47	0	0	..	..
Malaysia	1	0	-10.63	..	33	38	3.94	2.35	0	0	..	..
Pakistan	748	964	7.38	2.35	0	0	..	..	6	5	-13.20	1.66
Philippines	33	44	-7.22	2.23	1	1	-3.77	6.34	0	0	..	..
Saudi Arabia	0	0	..	..	22	27	-11.65	1.33	1	0	-16.65	..
Thailand	2	3	3.77	0.31	1	0	-2.64	-2.85	0	0	..	..
Turkey	117	121	-0.36	-0.15	0	0	..	..	1	2	..	5.57
Viet Nam	21	25	13.28	1.43	0	0	-26.11	..	0	0	..	..
OCEANIA	1 128	1 259	0.09	0.69	22	24	-4.01	0.53	892	985	1.22	0.64
Australia	680	806	0.70	1.03	0	0	..	..	454	538	2.12	1.10
New Zealand	448	453	-0.76	0.13	3	3	-1.84	0.00	438	447	0.34	0.11
DEVELOPED COUNTRIES	**3 417**	**3 666**	**0.54**	**0.64**	**429**	**381**	**-0.33**	**-1.32**	**1 061**	**1 145**	**1.12**	**0.64**
DEVELOPING COUNTRIES	**12 222**	**14 410**	**2.47**	**1.37**	**675**	**705**	**1.35**	**1.12**	**82**	**85**	**-2.64**	**0.23**
LEAST DEVELOPED COUNTRIES (LDC)	2 039	2 667	2.30	2.53	2	2	-1.54	0.30	4	1	0.54	-16.96
OECD[3]	**2 442**	**2 610**	**0.19**	**0.49**	**446**	**396**	**0.45**	**-1.26**	**1 051**	**1 138**	**1.01**	**0.61**
BRICS	**6 308**	**7 082**	**2.28**	**0.98**	**382**	**400**	**7.49**	**0.48**	**19**	**11**	**-3.64**	**0.31**

.. Not available

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Gross indigenous production.
5. Least-squares growth rate (see glossary).
6. Excludes trade of live animals.

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

Table C.29.2. Sheep meat projections: Consumption, food

Calendar year

	CONSUMPTION (kt cwe)		Growth (%)[4]		FOOD (kg rwe/cap)[5]		Growth (%)[4]	
	Average 2019-21est	2031	2012-21	2022-31	Average 2019-21est	2031	2012-21	2022-31
WORLD	**15 695**	**18 081**	**2.07**	**1.21**	**1.8**	**1.9**	**0.94**	**0.31**
NORTH AMERICA	236	249	3.91	0.16	0.6	0.6	3.21	-0.40
Canada	38	40	1.11	0.36	0.9	0.9	0.15	-0.40
United States	198	209	4.53	0.12	0.5	0.5	3.85	-0.42
LATIN AMERICA	443	472	0.37	0.53	0.6	0.6	-0.60	-0.20
Argentina	50	53	-1.84	0.71	1.0	0.9	-2.79	-0.09
Brazil	142	155	1.99	0.75	0.6	0.6	1.18	0.27
Chile	8	8	-1.64	-0.85	0.4	0.3	-2.79	-1.01
Colombia	1	1	4.19	0.12	0.0	0.0	2.88	-0.35
Mexico	108	110	-0.54	0.38	0.7	0.7	-1.69	-0.46
Paraguay	3	3	-4.79	0.82	0.3	0.4	-6.02	-0.22
Peru	38	38	-1.07	-0.29	1.0	0.9	-2.48	-1.13
EUROPE	1 306	1 299	-0.42	-0.04	1.5	1.5	-0.55	0.07
European Union[1]	676	656	-0.90	-0.06	1.3	1.3	-1.02	0.03
United Kingdom	299	310	0.05	0.12	3.9	3.9	-0.57	-0.23
Russia	208	210	0.49	-0.22	1.3	1.3	0.34	0.01
Ukraine	12	7	-5.99	-2.74	0.2	0.1	-5.52	-2.06
AFRICA	3 284	4 113	1.89	2.05	2.2	2.1	-0.67	-0.25
Egypt	59	77	-14.00	2.56	0.5	0.5	-15.77	0.93
Ethiopia	265	335	8.23	1.95	2.0	2.0	5.38	-0.33
Nigeria	414	501	1.86	1.68	1.8	1.6	-0.76	-0.73
South Africa	180	179	-1.09	0.33	2.7	2.4	-2.48	-0.68
ASIA	10 177	11 668	2.63	1.15	1.9	2.1	1.66	0.50
China[2]	5 305	5 973	2.87	0.98	3.2	3.6	2.38	0.86
India	823	941	1.64	1.22	0.5	0.5	0.56	0.39
Indonesia	141	152	3.86	0.66	0.5	0.4	2.64	-0.19
Iran	323	337	-1.86	-0.40	3.4	3.2	-3.16	-1.30
Japan	22	22	0.10	-0.33	0.2	0.2	0.31	0.18
Kazakhstan	171	178	1.11	0.27	8.0	7.5	-0.30	-0.61
Korea	20	20	15.88	-0.43	0.3	0.3	15.58	-0.38
Malaysia	37	41	3.07	2.06	1.0	1.0	1.70	1.01
Pakistan	743	959	7.73	2.35	3.0	3.2	5.54	0.65
Philippines	33	44	-7.16	2.28	0.3	0.3	-8.52	1.09
Saudi Arabia	176	201	-1.02	0.68	4.4	4.5	-3.08	-0.45
Thailand	3	3	-0.83	-0.29	0.0	0.0	-1.17	-0.33
Turkey	117	119	-0.75	-0.23	1.2	1.2	-2.22	-0.75
Viet Nam	22	25	8.66	1.42	0.2	0.2	7.59	0.79
OCEANIA	249	279	-1.15	0.30	5.2	5.2	-2.54	-0.83
Australia	212	243	-0.15	0.39	7.3	7.5	-1.46	-0.58
New Zealand	18	16	-6.91	-1.23	3.3	2.6	-7.78	-1.89
DEVELOPED COUNTRIES	**2 709**	**2 836**	**0.31**	**0.39**	**1.7**	**1.7**	**-0.10**	**0.20**
DEVELOPING COUNTRIES	**12 986**	**15 245**	**2.47**	**1.37**	**1.8**	**1.9**	**1.17**	**0.32**
LEAST DEVELOPED COUNTRIES (LDC)	2 003	2 654	2.71	2.62	2.0	2.1	0.35	0.45
OECD[3]	**1 772**	**1 812**	**-0.01**	**0.07**	**1.1**	**1.1**	**-0.54**	**-0.20**
BRICS	**6 659**	**7 459**	**2.49**	**0.95**	**1.8**	**1.9**	**1.72**	**0.50**

Note: Calendar year; except year ending 30 June for New Zealand. Average 2019-21est: Data for 2021 are estimated.

1. Refers to all current European Union member States (excludes the United Kingdom)
2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.
3. Excludes Iceland and Costa Rica but includes all EU member countries.
4. Least-squares growth rate (see glossary).
5. Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pigmeat and 0.88 for both sheep meat and poultry meat.

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

ANNEX C

Table C.30. Main policy assumptions for meat markets

		Average 2019-21est	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
ARGENTINA												
Beef export tax[2]	%	6.8	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
CANADA												
Beef tariff-quota	kt pw	129.2	129.2	129.2	129.2	129.2	129.2	129.2	129.2	129.2	129.2	129.2
In-quota tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Out-of-quota tariff	%	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
Poultry meat tariff-quota	kt pw	103.0	106.9	107.9	109.3	110.8	112.3	113.7	115.1	116.6	118.0	119.4
In-quota tariff	%	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Out-of-quota tariff	%	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0
EUROPEAN UNION[3,4]												
Voluntary coupled support												
Beef and veal[5]	mln EUR	1 693	1 693	1 693	1 693	1 693	1 693	1 693	1 693	1 693	1 693	1 693
Sheep and goat meat[6]	mln EUR	510	505	505	505	505	505	505	505	505	505	505
Beef basic price[1]	EUR/kg dwt	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Beef tariff-quota	kt cwe	347.9	324.0	325.6	327.1	328.7	329.2	329.7	330.2	330.7	331.2	331.2
Pig tariff-quota	kt cwe	211.0	212.1	213.0	213.9	214.8	215.7	216.6	217.5	218.4	219.3	220.2
Poultry tariff-quota	kt rtc	948.0	809.2	811.3	813.3	815.4	817.4	819.5	821.6	823.6	825.7	825.7
Sheep meat tariff-quota	kt cwe	251.8	163.1	163.3	163.5	163.7	163.9	164.1	164.3	164.5	164.7	164.9
JAPAN[7]												
Beef stabilisation prices												
Upper price	JPY/kg dwt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower price	JPY/kg dwt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beef tariff	%	27.7	24.3	23.5	22.7	21.8	21.0	20.2	18.6	16.8	15.0	13.1
Pigmeat stabilisation prices												
Upper price	JPY/kg dwt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower price	JPY/kg dwt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pig meat import system												
Tariff	%	2.2	1.5	1.3	1.0	0.8	0.5	0.3	0.1	0.0	0.0	0.0
Standard import price	JPY/kg dwt	365.2	454.4	337.1	300.2	274.9	266.7	258.3	248.1	241.4	234.9	227.6
Poultry meat tariff	%	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
KOREA												
Beef tariff	%	16.0	10.6	8.0	5.3	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Pigmeat tariff	%	16.0	10.6	8.0	5.3	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Poultry meat tariff	%	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
MEXICO[8]												
Beef and veal tariff-quota	kt pw	73.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
In-quota tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Out-of-quota tariff[9]	%	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Poultry meat tariff-quota	kt pw	110.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
In-quota tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Out-of-quota tariff	%	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
RUSSIA												
Beef tariff-quota	kt pw	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0
In-quota tariff	%	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Out-of-quota tariff	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Pigmeat tariff-quota[10]	kt pw	143.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
In-quota tariff	%	0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Out-of-quota tariff	%	38.3	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Poultry tariff-quota	kt pw	364.0	364.0	364.0	364.0	364.0	364.0	364.0	364.0	364.0	364.0	364.0
In-quota tariff	%	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Out-of-quota tariff	%	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
UNITED STATES												
Beef tariff-quota	kt pw	696.6	696.6	696.6	696.6	696.6	696.6	696.6	696.6	696.6	696.6	696.6
In-quota tariff	%	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Out-of-quota tariff	%	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4

Table C.30. Main policy assumptions for meat markets *(cont.)*

		Average 2019-21est	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
CHINA												
Beef tariff	%	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Pigmeat tariff	%	9.3	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Sheep meat tariff	%	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Poultry meat tariff	%	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
INDIA												
Beef tariff	%	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5
Pigmeat tariff	%	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Sheep meat tariff	%	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Poultry meat tariff	%	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4
SOUTH AFRICA												
Beef tariff	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Pigmeat tariff	%	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Sheep meat tariff	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Poultry meat tariff	%	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1

Note: Average 2019-21est: Data for 2021 are estimated.

1. Price for R3 grade male cattle.
2. In Argentina, a temporary export tax is applied on all goods from September 4th 2018 until December 31st 2020.
3. Since 2015 the Basic payment scheme (BPS) holds, which shall account for the maximum of the national direct payment envelopes. On top of this, compulsory policy instruments have been introduced: the Green Payment and young farmer scheme.More details can be found in here: https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/voluntary-coupled-support-note-revised-aug2018_en.pdf
4. Refers to all current European Union member States (excludes the United Kingdom)
5. Implemented in 24 Member States.
6. Implemented in 22 Member States.
7. Year beginning 1 April.
8. Intended for countries which whom Mexico has no free trade agreements.
9. 25% for frozen beef.
10. Eliminated in 2020 and replaced by import tariff.

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