Chapter 6. Meat

This chapter describes the market situation and highlights the medium-term projections for world meat markets for the period 2019-28. Price, production, consumption and trade developments for beef and veal, pigmeat, poultry and sheepmeat are discussed. The chapter concludes with a discussion of important risks and uncertainties affecting world meat markets during the coming ten years.

6.1. Market situation

World meat production increased by 1.0% to 327 Mt in 2018, reflecting increases in the production of bovine (hereafter "beef"), pig and poultry meats, with very modest gains in sheepmeat. Much of the world meat production increase occurred in Australia, the European Union, the Russian Federation, and the United States, and to a certain extent in Argentina, India, and Mexico. Meat output, however, declined marginally in the People's Republic of China (hereafter "China") and Brazil, two of the largest meat producers in the world, slowing the pace of the overall global increase. Meat output increase is largely attributable to productivity improvements, but in several cases, in particular Australia and the European Union, the higher rate of drought-induced slaughter was a factor. In the case of China, the slower growth in meat output was mainly the result of a decline in pigmeat output due to the outbreak of African Swine Fever (ASF), and the output decline in Brazil was largely caused by a loss of export markets, especially that of the Russian Federation, due to an import embargo triggered by food safety concerns.

Measured by the FAO Meat Price Index, average prices in 2018 were 2.2% lower than in 2017, reflecting the decline in annual average prices of pig and poultry meats, while those of beef remained stable. Sheepmeat prices increased, but due to their smaller volumes, its impact on the Index was limited. The spread of ASF and the consequent import restrictions weighed on international pigmeat price quotations, while generally sluggish import demand caused poultry prices to decline. The international market for beef was characterised by abundant export availability and robust demand, both of which contributed to price stability. Strong import demand, along with limited supplies from Oceania, was behind the strength of sheepmeat prices.

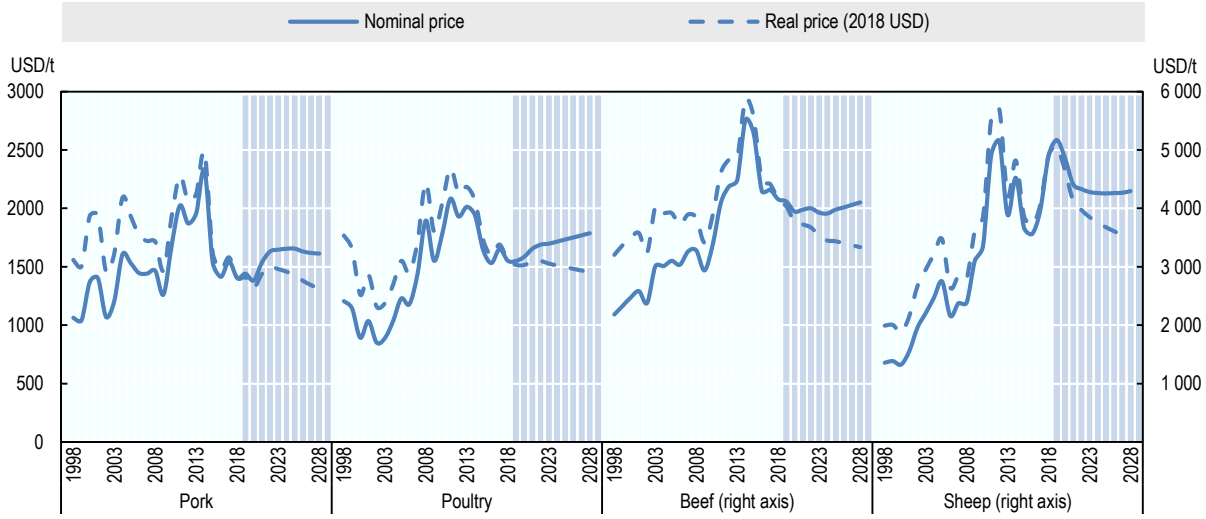
World total meat exports increased to 34 Mt in 2018, up 1.5% from 2017. In 2018, export expansion was mainly driven by increased shipments from Australia, Argentina, Thailand, and the United States, but offset by declines in Brazil and India. On imports, China, the world's largest meat importer, increased its purchases significantly as consumer demand for meat continued to rise amid a contraction in domestic pig meat output.

6.2. Projection highlights

This year's *Outlook* projects that, relative to the base period (average 2016 to 2018), meat prices will decline in real terms over the medium term. This decline is a result of slower growth in meat consumption combined with expanding supply, which will be supported by low feed grain prices relative to the past decade. Although feed costs are projected to rise slowly, meat-to-feed price margins will generally remain within historical levels.

The real price (at 2018 prices) for beef and sheepmeat are projected to decrease the most by 2028 to USD 3336/t and 3493/t carcass weight equivalent (c.w.e.) respectively, while real pigmeat and poultry prices are projected to decline to USD 1 311/t c.w.e. and USD 1 453/t product weight (p.w.), respectively. In nominal terms, all meat prices will increase modestly by 2028, with the exception of sheepmeat as current prices are high relative to historic levels (Figure 6.1). Sheepmeat prices are projected to remain high during the early outlook period as a result of supply constraints in Oceania arising from a combination of drought-induced flock reductions in Australia combined with a strong import demand from China. A projected increase of Australia sheep inventory once the present drought is over will lower sheepmeat prices in the second part of the projection period.

Figure 6.1. World meat prices



Note: US Choice steers, 1 100-1 300 lb c.w.e., Nebraska. New Zealand lamb price c.w.e., all grade average. US Barrows and gilts, National base 51-52% lean c.w.e., Brazil: Export unit value for chicken (f.o.b.) product weight.
Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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At the global level, growth in demand for animal protein in the next decade is projected to slow down. In light of continued income growth, global meat consumption per capita is projected to increase to 35.1 kg retail weight equivalent (r.w.e.) by 2028, an increase of 0.4 kg r.w.e.or 1.2% compared to the base period.

Historically, lower product prices have contributed to making poultry the meat of choice, particularly for consumers in developing countries. With income growing over the projection period, this will remain true as poultry will constitute the largest share of additional per capita consumption at the global level. At the same time, many consumers are expected to diversify their meat consumption, adding more expensive meat protein such as beef and sheepmeat, thereby supporting gains in per capita consumption of these meat types globally by 2028. Pigmeat consumption per capita, however, is projected to decline over the outlook period, as it is not a significant element in the national diets of several developing countries.

This year's *Outlook* projects continued expansion in meat supply over the next decade. Global meat production is projected to be 13% higher in 2028 relative to the base period, with developing countries projected to account for the vast majority of the total increase. Greater use of a grain-intensive feeding systems in the production process will result in shorter time required to reach heavier carcass weights.

The global cattle inventory has increased over the past few years. This expansion, particularly in the main exporting countries of the Americas such as Argentina, Brazil and the United States, as well as in India in spite of uncertainty regarding cattle slaughter policies, will contribute to an additional supply entering the market in the early years of the projection period. In Australia, beef supply remains tight in the short term as a result of ongoing drought conditions.

Numerous outbreaks of ASF around the world in 2018 are expected to reduce global pigmeat output for 2019. China, the largest producer, was severely affected. This *Outlook* assumes a return to a steady global increase in production from 2021 onwards. Moreover, as the effects of the Avian Influenza (AI) outbreak in China abate in the early years of the projection period, world poultry output growth will return to historic trends. Poultry meat will continue to be the primary driver of meat growth, increasing its share of total meat production over the projection period, but at a slower rate than in the past decade

Production of sheepmeat is also expected to increase at a slower rate when compared to the last decade. Production increases will mostly originate in Asia, led by China, but important production increases are also projected to occur in Africa. In Oceania, a major exporter, production growth is expected to increase slightly, in particular in New Zealand, because of ongoing competition from beef and dairy sector.

Globally, the share of meat output traded is expected to increase marginally over the projection period. It is expected that meat production growth in developing countries will remain insufficient to satisfy demand growth, particularly in Africa. As a result, import demand is expected to remain strong throughout the outlook period.

Globally, animal disease outbreaks (e.g. ASF), sanitary restrictions, and trade policies will remain the main factors that drive the evolution and dynamics in world meat markets. Uncertainties related to existing or future trade agreements over the outlook period (e.g. the United Kingdom's exit from the European Union) could impact and diversify meat trade patterns. Other factors that could influence the meat outlook include consumer preferences and attitudes towards meat consumption with respect to its impacts on health, the environment, and global GHG emissions.

6.3. Prices

Meat prices have declined from recent peaks, in both nominal and real terms (Figure 6.1). Over the outlook period, real meat prices will continue to trend downwards due to slower growth in meat consumption, combined with an expanding supply supported by relative low feed grain prices. The actual path over time will differ by meat type.

In the short term, real beef prices will decline faster due to the ample beef supply from major producing countries such as Argentina, Brazil, and the United States following a rapid increase in herd inventory. However, as beef cow herds decline and the rate of production growth slows, nominal prices are projected to slowly start to increase.

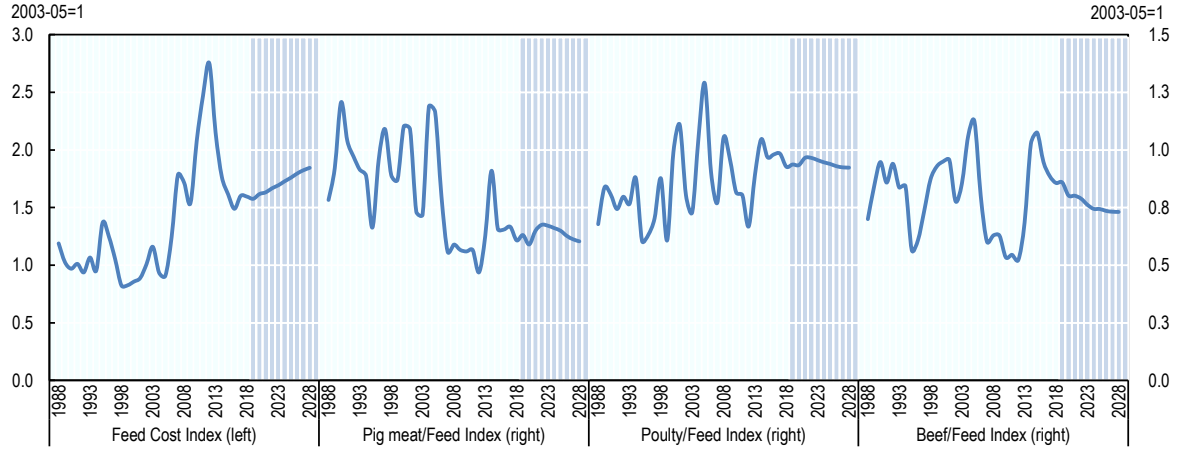
Pigmeat prices are projected to decrease in real terms but expected to oscillate in a typical cycle for the projection period. Notable features of the global sector that shape this trend are increased supply from Brazil and the United States and higher imports, in particular from China where production has been affected by ASF.

The 2017 spread of AI in China seems to be contained; however, low breeding stock availability will restrict chicken production in the first year of the outlook period. At the global level, a slow increase in poultry flock is projected combined with rising feed costs (Figure 6.2), resulting in a moderate increase in poultry price early in the projection period.

Sheepmeat prices in real terms are expected to remain high until 2020 as contractions in flock will reduce supply and restrict trade of the two leading exporters, Australia and New Zealand. This will keep pressure on global prices in the early years of the projection period. Strong import demand growth from China is expected to subside in the early part

of the projection period as the spread of ASF in 2018 resulted in sustained imports of meat protein, including that of sheepmeat.

Figure 6.2. Feed cost index and meat to feed nominal price ratios



Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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6.4. Production

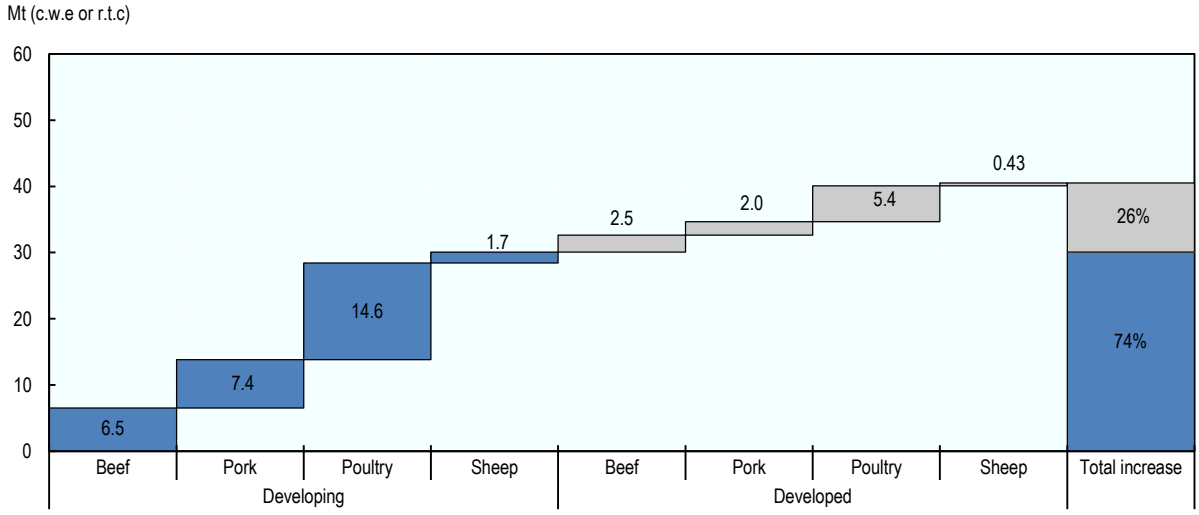
Over the medium term, production will benefit from favourable feed price (Figure 6.2). Inherent differences in the production system imply that favourable meat to feed ratios are more beneficial to certain types of meat than others. For instance, poultry and pigmeat production make the most intensive use of feed in the production system, whereas beef producers have more flexibility to move between intensive and extensive systems. Sheepmeat production is mostly pasture-based and producers benefit less from lower meat to feed price ratios.

Over the course of the outlook period, a combination of herd and flock expansion in the Americas and increased productivity in the region will support a supply-driven market. Poultry meat remains the primary driver of growth in total meat production. Low production costs, high feed conversion ratios, and low product prices have contributed to making poultry the meat of choice, both for producers and consumers.

Total meat production is projected to expand by more than 40 Mt by 2028, reaching nearly 364 Mt. Overall, the bulk of meat production growth is attributed to developing region, which will account for 74% of the additional output, but the increase in production will vary according to the region (Figure 6.3). In the short term, the supply response of the various meat types remain influenced by disease outbreaks in China (poultry and pigmeat), as well as weather-induced sheep flock reductions in Australia. Post-2021, these factors will stabilise, providing a constant yearly increase in the different meat types produced.

Figure 6.3. Growth of meat production by region and meat type

2028 vs 2016-18



Note: c.w.e. is carcass weight equivalent, r.t.c. is ready to cook equivalent.
Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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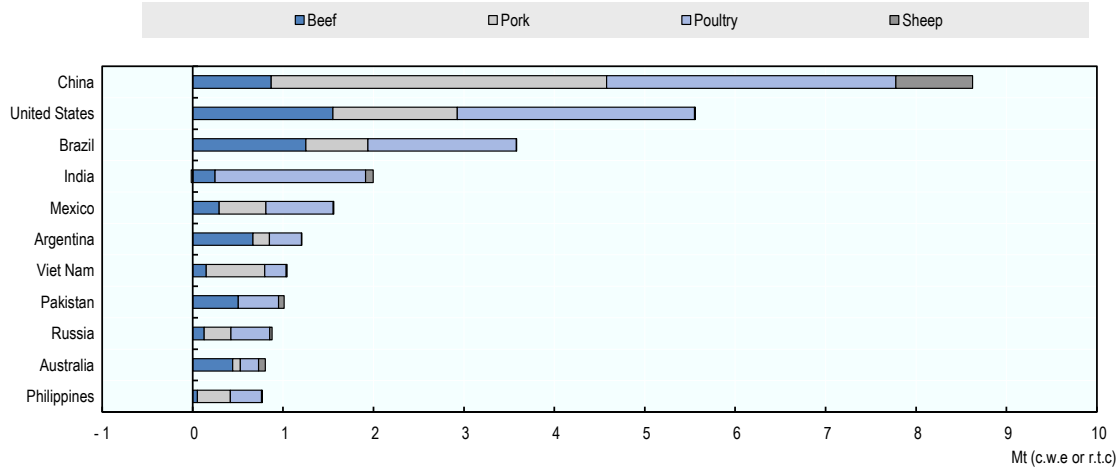
In some developing countries, production growth is supported by increasing productivity in the form of higher carcass weight per livestock unit and improving feed use efficiency. However, productivity in the least developed countries (LDCs) is not projected to improve at the same rate as smallholder structures and lack of investment in the livestock sector will continue to limit technological improvements and commercialisation.

Meat production continues to be dominated by Brazil, China, the European Union, and the United States. Production growth in Brazil will continue to benefit from an abundant supply of natural resources, feed, grassland availability, productivity gains, and to some extent the devaluation of the Real. Production in China will benefit increasingly from growing economies of scale as small production units grow into larger commercial enterprises. The introduction of new environmental regulations has resulted in the disappearance of many smaller farms, with large integrated producers expanding and increasing their market share. The ASF outbreak could accelerate this process as smaller producers could suffer more from an outbreak as they generally have weaker biosecurity measures. Production in the United States will benefit from strong domestic demand and higher slaughter weight, while overall meat production in the European Union will remain relatively stable. However, the European Union share of the different meats will depend on consumer preferences, export potential, and profitability. In the case of beef, changes in the dairy sector will also play an important role.

Other countries with noteworthy potential contributions to additional meat production include: Argentina – stimulated by export opportunities to China and increased domestic poultry consumption; Australia – with seasonal conditions improving for pasture; India – with small poultry producers organised under "contract farming" conditions; Mexico – with the modernisation of its infrastructure, as well as vertical integration and improved genetic and biosecurity; Pakistan – in response to growing export opportunities in the region; the Philippines and Viet Nam – due to rapidly increasing domestic demand (Figure 6.4).

Finally, the meat import ban imposed by the Russian Federation until the end of 2019 combined with the depreciation of its currency have resulted in increased domestic prices. This will continue to stimulate the country's domestic meat production.

Figure 6.4. Countries with the greatest share of additional meat production by meat type



Note: c.w.e. is carcass weight equivalent, r.t.c. is ready to cook equivalent.
Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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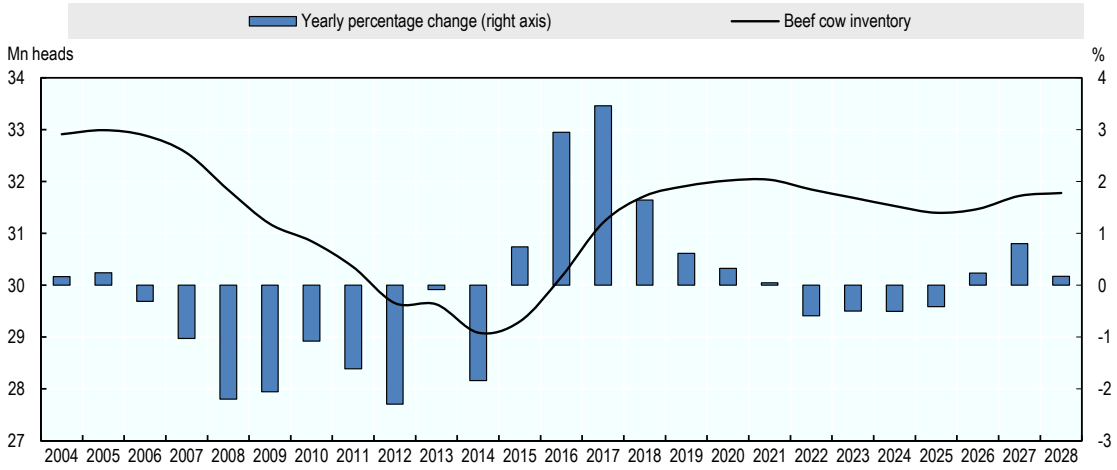
Beef production will continue to grow across the main producing countries over the outlook period (Figure 6.5). In developing countries, it is projected that it will be 17% higher in 2028, relative to the base period. Developing countries are projected to account for 72% of the additional beef produced. The majority of this expansion should occur in Argentina, Brazil, China, Mexico, Pakistan and South Africa. While in developed countries, production is projected to be 8% higher by 2028 compared to the base period, virtually all of this increase will be due to high growth, e.g. in the United States. In the short term, beef production will be supported by both higher carcass weights resulting from low feed costs and improved genetics, as well as increased slaughter numbers as multiple years of herd rebuilding in several producing regions lead to higher livestock numbers. In the United States, the total number of beef cows is projected to increase and reach its peak in 2021. Declining domestic per capita beef consumption in the latter part of the next decade underpins the projection that the US cow herd will enter a declining cycle post-2021.

Whilst the expansion cycle leading to higher cattle inventory in the United States is nearing its end, the herd expansion cycle in other countries, such as Argentina, Brazil, India and Mexico, is still strong and expected to slow down at a later time. Moreover, in spite of the introduction of a temporary export tax on beef in Argentina, higher cattle inventory is expected to increase beef production back to historical levels over the medium term. Production growth is expected in India relative to the past decade amid continued uncertainty regarding cattle slaughter policies. However, beef production in the European Union[1] is expected to enter a downward trend as dairy breeds, which make up approximately two-thirds of the beef supply, will decrease somewhat following productivity gains in the milk sector. There are other factors that will limit the beef sector's growth potential in the European Union, including low profitability, increased competition in the export market, and declining domestic demand which is expected to shift to

processed meat and ready-to-eat meals. In the United Kingdom, beef production is also expected to trend down over the outlook period as the price competitiveness of imports is anticipated to put pressure on domestic production.

Figure 6.5. US beef cow inventory



Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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The increase in global pork production will decelerate over the next decade, largely due to pigmeat not being an important element of national diets in many developing regions. The global increase in pigmeat production will continue to be driven by the Asian region, with China's production growth expected to provide half of the additional global output. Strong production growth rates, aimed mostly at the domestic market, are also expected in Brazil, the United States, and Viet Nam over the outlook period. The European Union's pigmeat production, however, is expected to decline marginally as environmental and public concerns on manure management is expected to limit the expansion of production.

China first emerged as a significant importer of pork during 2007-2008 when the Porcine Respiratory and Reproductive Syndrome (PRRS) epidemic reduced domestic supply. The ASF outbreak in 2018 had a similar impact on China's production growth and leaves an uncertain outlook over the projection period. This *Outlook* assumes that that production will be negatively affected in 2019 (by -5%). For 2020, production and consumption is projected to return to the 2018 level and resume its trend in growth for the remainder of the outlook period. As a result, China will face a supply shortage and its imports are projected to increase to nearly 2 Mt in 2019. With increased tariffs imposed on US exports of pigmeat, Brazil, Canada and the European Union are projected to benefit from China's increased import demand.

Poultry will continue to strengthen its dominant position within the meat complex, accounting for virtually half of all additional meat that will be produced over the next decade. Its short production cycle allows producers to respond quickly to market signals, while also allowing for rapid improvements in genetics, animal health, and feeding practices. Production will expand rapidly in countries that produce surplus feed grains, such as Brazil, and from the sustained productivity gains and investment made in the European Union, in particular in Hungary, Poland, Romania, and the United States. Rapid expansion

is also foreseen in Asia after 2019, led by China – where the effects of the previous AI outbreak will continue to abate and breeding stock availability is expected to increase - and India, Indonesia, Thailand and Turkey.

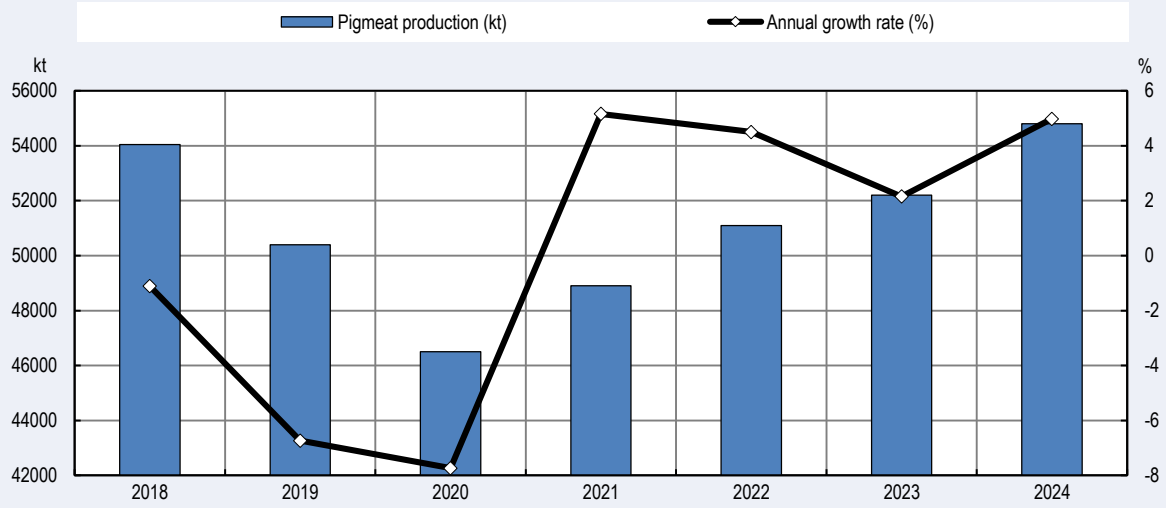
Supply remains constrained in the global sheepmeat market, mainly as a result of flock reductions in Australia, and stagnant production in the United Kingdom. This situation is expected to persist at least through 2019 and while global sheep meat production is expected to recover around 2020, this *Outlook* does not project large flock expansion, with the possible exception of Australia. Chinese producers are projected to increase supply in response to current high prices and will contribute more than 40% of additional production as domestic demand continues to grow. Production in the European Union is projected to increase slightly from the current level, with increased profitability for sheep farms and implementation of voluntary coupled support in the main sheep-producing Member States. The share of Africa in global sheepmeat production will slowly increase despite limitations linked to urbanisation, desertification, and the availability of feed in some countries.

Box 6.1. China's assumptions for African Swine Fever

The Chinese Ministry of Agriculture and Rural Affairs (MARA) released its *China Agricultural Outlook* (2019 – 2028) on 20 April 2019. This report provides projections for agricultural markets that incorporate the effects of the ASF outbreak and the Environment Protection Act, which aims to improve the sustainability of production, on the country's pigmeat market. It is expected that production capacity will decline substantially in the first two years of the outlook period. Import volumes are projected to to reach 2.1 Mt by 2020, an increase of more than 75 % over 2018, in order to make up for the shortfall. This would increase China's share of world imports from 17% in 2018 to about 23% in 2020. Most of the additional pigmeat imports are expected to originate from Brazil, Canada, and the European Union. Production volumes, however, are assumed to recover from 2021 and by 2024 reach the same production quantities as in 2018.

ASF will lead Chinese consumers to turn towards alternative sources of animal protein and, in particular, poultry meat, for which increased production is projected to supply the additional domestic demand. The growth in overall feedstock demand, however, is projected to slow down in the early years of the outlook period despite the increase in poultry production and, in the case of corn, decline in the first two years of the projection period, when Chinese pigmeat production is expected to be declining. This is principally because of the greater amount of feed required to produce a given volume of pigmeat than of poultry. Towards 2028, both the *OECD FAO Agricultural Outlook* and the China *Agricultural Outlook* project that pigmeat production will reach similar levels.

Figure 6.6. China pigmeat production



Note: As reported in the China Agricultural Outlook (2019 - 2028)
Source: Ministry of Agriculture and Rural Affairs (2019), "China Agricultural Outlook (2019 - 2028)".

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Note to Box 6.1: For additional information, please see FAO (May, 2019), "African Swine Fever: Challenges for some, opportunities for others?", in *Food Outlook*, FAO publications, Rome.

6.5. Consumption

Growth in meat consumption is expected to increase, particularly in Asia, over the outlook period, although growth rates are generally expected to be lower than over the past decade. Over the projection period, global meat consumption per capita is projected to increase 0.4 kg r.w.e. compared to the base period. Growth will stem from a combination of income and population growth, especially in Asian and Latin American countries with large middle classes.

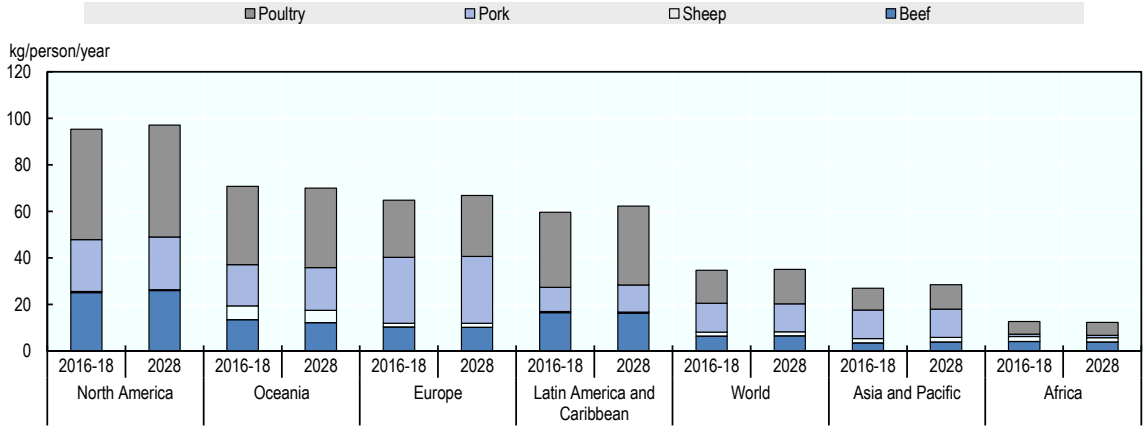
Generally speaking, consumption levels in the developed regions are already high, but meat demand continues to increase as meat become more affordable in some countries. This is particularly visible in the United States, where per capita consumption and meat prices will return to levels similar to those of a decade ago. However, a declining trend in meat consumption can be observed for some countries and growth rates in developed countries are generally expected to be lower than those in the developing countries (Figure 6.7).

Because both the level and growth of population in developing regions is higher, the overall growth in the volume of meat consumption is expected to be approximately four times that of developed countries. However, gains in per capita consumption are expected to remain small, particularly in regions where income growth occurs from a small base. This is evident in Africa, where total consumption growth is faster than any other region despite limited gains in per capita terms. Import demand is also expected to increase at the fastest rate in Africa, while in volume terms half of the global additional increase in meat imports

is driven by Asia, where strong consumption growth stems from a combination of population growth and increased consumption per capita due to rising incomes.

Historically, lower product prices have contributed to making poultry and pigmeat the favourite choice for consumers in developing countries, but rising income levels are allowing those same consumers to gradually diversify their meat consumption to more expensive meat varieties such as beef and lamb. In addition to income levels and relative prices, other factors are influencing meat consumption trends, including religious beliefs, cultural norms, urbanisation, environmental, ethical, and health concerns.

Figure 6.7. Per capita meat consumption by region



Note: Per capita is expressed in retail weight.
Source: OECD/FAO (2019), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-outl-data-en.

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Beef and buffalo meat consumption will increase gradually over the next ten years. In per capita terms, beef consumption in the developing world is expected to remain low relative to developed countries, at about one-third in volume terms. In Asia, the main driver of growth in beef consumption includes a westernisation of consumer diet, together with a positive perception among Chinese consumers. Increased beef consumption levels are also expected in Kazakhstan, Korea, Turkey, and Viet Nam.

Global pigmeat consumption on a per capita basis is expected to decline slightly over the outlook period with consumption in most developed countries reaching saturation levels. Within developing countries, significant regional differences are evident in per capita pigmeat consumption. Growth is sustained in most of Latin America, where it has grown rapidly over the past few years fuelled by favourable relative prices that have positioned pork as one of the favoured meats, along with poultry, as the industry is continuously investing in expansion and vertical integration in an effort to meet rising demand from the middle class.. Several Asian countries with favourable economic conditions which traditionally consume pork, such as China, Japan, Korea, and Viet Nam, are increasing consumption on a per capita basis. The European Union consumption of pigmeat, however, is projected to decline as changes in the population structure influences diet in favour of poultry meat.

Consumption of poultry meat is expected to increase globally, independent of income level. Growth rates, however, are expected to remain higher in developing regions with the

exception of Saudi Arabia, where the decline is attributed to a number of factors, including weaker income growth since oil prices have decreased, the departure of large numbers of expatriate family members, and the imposition of a ban on electric immobilisation in poultry production which substantially increased retail prices. In China, consumption has recovered from the AI outbreaks and this *Outlook* assumes that growth in consumption will resume in 2019 and return to its historical trend. Among all the additional meat consumed over the projection period, poultry is expected to account for half.

Global sheepmeat consumption encompasses a broad mix of product types and cuisines but generally remains a niche, premium component of many diets. As a result, sheepmeat consumption worldwide on a per capita basis is expected to marginally increase over the projection period. Sheepmeat consumption per capita in Africa, North and Latin America, and Oceania is expected to decline slightly, but is expected to continue to expand in several Asian countries, such as China, where consumers associate sheepmeat with quality and nutritional benefits. With disease outbreaks in both poultry and pigmeat sectors, China's demand for sheepmeat has increased notably the past two years as an alternative animal protein. The projection expects China to represent 40% of all the additional sheepmeat consumed by 2028. In many Middle East countries, however, where sheepmeat is traditionally consumed, per capita consumption is projected to decline slightly. Demand growth in this region is tightly linked to the oil market, which heavily influences both the disposable income of the middle class and government spending patterns.

6.6. Trade

Meat exports at the global level (excluding live animals and processed products) are projected to be 18% higher in 2028 than in the base period. This represents a slowing down of meat trade growth to an annual average rate of 1.4%, compared to 3% during the previous decade. However, the share of total meat output traded on the global market will slightly increase.

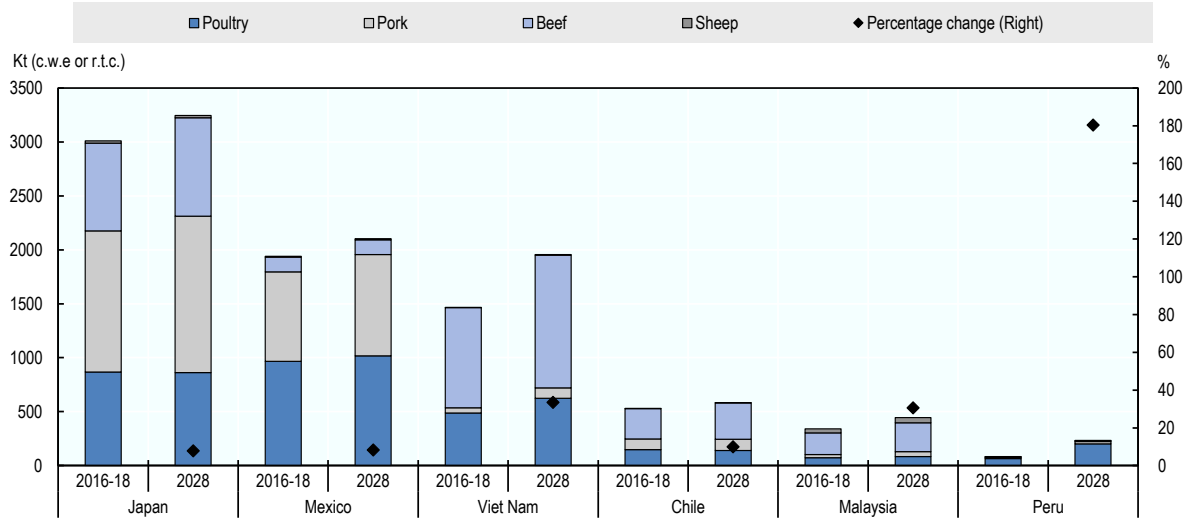
By 2028, developed countries are expected to account for slightly more than half of global meat exports, but their share will decrease steadily relative to the base period owing to faster growth in exports from developing countries. Meat exports are concentrated; the combined share of the two largest meat exporting countries, Brazil and the United States, is expected to increase to around 43%, contributing more than half of the expected increase in global meat exports over the projection period. The European Union has improved its access to Asian markets, but competition from North and South America will prevent it from taking full advantage of this opportunity. In Latin America, traditional exporting countries are expected to retain a high share of the global meat trade. Argentina, Brazil are expected to increase their share of world meat exports somewhat, benefiting from the depreciation of their currencies.

The Asian region will continue to dominate in the area of meat imports, accounting for 56% of global trade. The greatest increases will originate from the Philippines, along with CPTPP[2] members such as Japan, Malaysia and Viet Nam, where consumption and import growth, supported by favourable economic growth, will outpace domestic production expansion (Figure 6.8). While China imports are not expected to increase substantially over the projection period, they will remain at the high level of the base period. Outside of Asia, Africa is another fast-growing importing region. In the Russian Federation, the long-term effects of the 2014 import ban on meat, which this *Outlook* expects will be removed at the end of 2019, has stimulated domestic production and meat import level are expected to remain lower than before the embargo.

Rising imports over the next decade will be comprised mainly of poultry and beef, with poultry the largest contributor. Together, these two meat types are expected to account for the most of additional meat imports into Asia and African.

Globally, pigmeat imports are projected to account for 16% of the increase in meat imports. Rapid growth in imports from Latin America, where lower income consumers consider pork, along with poultry, as a lower cost alternative to beef, is projected to contribute 33% of the additional import demand of pigmeat by 2028. Developed countries will supply the bulk of additional exports in pigmeat.

Figure 6.8. Meat imports in selected CPTPP countries



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Sheepmeat exports from Australia and New Zealand have benefitted from broad-based strong demand as it remains a niche, premium component of many diets. Shipments to its three largest markets – the United States, China and the Middle East – broke all records in 2018. Sheepmeat supply has been unable to keep pace with the strong demand from China, which historically was a mutton market but is at present a major destination for lamb. As a result, Australia is expected to continue to increase its lamb production at the expense of mutton. In New Zealand, export growth is projected to be marginal as land use has shifted from sheep farming to dairy.

6.7. Main issues and uncertainties

Trade policies remain a major factor affecting the dynamics of world meat markets. As a result, the implementation of various trade agreements over the outlook period could diversify or consolidate meat trade considerably. Multilateral trade agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), and their impacts on the meat market is proving difficult to quantify as several other existing bilateral trade agreements have to be considered.

Unilateral and/or unexpected trade policy decisions are another risk factor in the projections. For example, in 2017 the Russian Federation extended until the end of 2019 the ban on imports of food from the United States, Australia, Norway, Canada, and the European Union in response to economic sanctions. This ban has resulted in a steep decline in meat imports, higher producer price volatility, and higher consumer prices. Domestic policies also influence the competitiveness of meat producers. For example, Argentina introduced a temporary export tax in 2018 that is applied to meat and other products that are exported. This is expected to negatively impact Argentina's competitiveness on the world meat market and hinder, in the short term, new opportunities for exports. Ongoing negotiation about the exit of the United Kingdom, a major meat producer, from the European Union will also impact the various meat markets according to their current importance in the European Union[3] and the world meat market.

Animal diseases have in the past disrupted poultry, beef and other livestock markets, and have the potential to do so again during the coming decade. A current epidemic affecting livestock production is the African Swine Fever, which is fatal to pigs and wild boars although it does not affect humans. In August 2018, China reported an outbreak of African Swine Fever, the first reported case in the country. In the meantime, the disease has also been detected in other countries in Asia and Europe. The medium-term impact of the disease on global pork production is uncertain. Measures to contain the outbreak are assumed to moderately depress global pork production in the short term. As their success is uncertain, the medium term impact of the epidemic may become more severe than currently anticipated.

Changing consumer preferences – such as the rise in vegetarian or vegan lifestyles, societal concerns such as the negative impact of meat production on the environment, and other various socio-cultural aspects such as those dictated by religion or cultural norms – will also have an impact. The increasing attention of consumers to animal treatment and how meat is produced (with a growing preference for free-range meat and antibiotic-free meat products) are relatively new factors that are difficult to assess. If adopted by an increasing share of the population, they could affect global meat markets, but the extent to which consumers are willing and able to pay a premium for such goods remains unclear.

Notes

[1] (2017) European Commission. "Box 4.1Insights on development in EU member states", *EU Agricultural Outlook for markets and income 2017-2030*.

[2] The rate of import growth is generally expected to be higher than what had been assumed in the past because of the ratification of the CPTPP. This trade agreement, in turn, is expected to have an impact on both the growth rates of domestic production and consumption.

[3] (2018) European Commission "What about the UK?", *EU Agricultural Outlook*, p.69, for markets and income 2018-2030.