

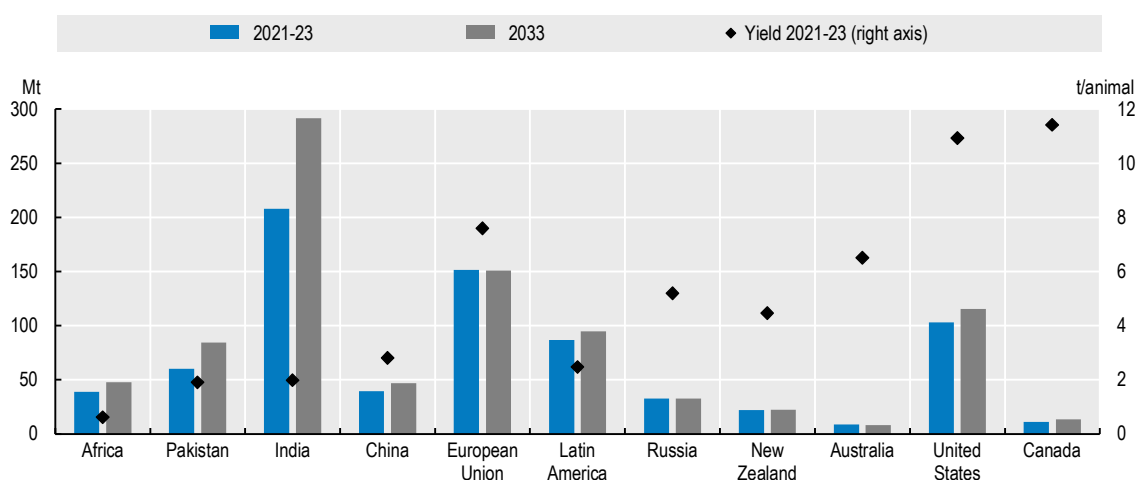
7 Dairy and dairy products

This chapter describes market developments and medium-term projections for world dairy markets for the period 2024-33. Projections cover consumption, production, trade and prices for milk, fresh dairy products, butter, cheese, skim milk powder and whole milk powder. The chapter concludes with a discussion of key risks and uncertainties which could have implications for world dairy markets over the next decade.

7.1. Projection highlights

Milk and dairy products are nutrient-rich foods, providing energy and high-quality protein with a range of essential micronutrients. The dairy sector supports the livelihoods for millions of people in its value chains across the world. World milk production (roughly 81% cow milk, 15% buffalo milk, and 4% for goat, sheep and camel milk combined) is projected to grow at 1.6% p.a. over the next decade (to 1085 Mt in 2033) supported by yield per animal. This rate of growth is faster than other main agricultural commodities. More than half of the growth in production is anticipated to come from India and Pakistan which will jointly account for over 30% of world production in 2033 (Figure 7.1). In the People's Republic of China (hereafter "China") and many African countries noticeable production growth is also projected. Production in the second largest milk producing region, the European Union (EU), is forecast to decline slightly due to the stagnating demand, production constraints due to environmental policies, and the expansion of alternative production systems (e.g. organic, pasture-based), which together cause a decline in cow numbers. In Oceania, the production is expected to continue a moderate growth, more slowly than in North America, due to policies on sustainable production and the expansion of organic production and pasture-based production systems. Globally, the projected growth in the number of cows is expected to be moderate. Over the projection period, yields across the world are expected to grow steadily with the strongest growth expected in Southeast Asian and some African countries, albeit from low base.

Figure 7.1. Milk production and yield in selected countries and regions



Note: The yield is calculated per cow/buffaloes.

Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

Although milk production in the three major dairy exporters, New Zealand, the European Union, and the United States increased modestly, their exports of dairy products remained strong due to stable domestic consumption. The largest milk producer, India, is expected to maintain relatively fast growth with almost all production being consumed domestically. The United States is forecast to remain the country with the fastest growing production of skim milk powder (SMP), while the European Union, the biggest producer of cheese is expected to continue its long-term growth of cheese production. With lower international demand and declining milk production, EU whole milk powder production (WMP) is expected to continue its downward trend over the next decade.

Dairy products continue to be highly valued by consumers as a key component to an overall healthy, balanced and nutritious diet. As income and population increase, more dairy products are expected to be consumed globally over the medium term. Asia, particularly India and Pakistan, will continue to have the strongest growth in demand for fresh dairy products. Further increases in cheese consumption are expected in Europe and North America. After several years of growth, EU per capita consumption of butter is projected to remain flat over the next decade as consumers shift to diets with a lower fat content.

Milk is traded internationally mainly in the form of processed dairy products. The EU, New Zealand, and the United States are expected to remain the top exporters of processed dairy products and are projected to jointly account for nearly 70% of total exports. New Zealand is the leading exporter of butter and WMP, while the European Union is the main exporter of cheese. Since 2021, the United States has surpassed the EU as the world's dominant exporter of skim milk powder (SMP) and this trend is expected to continue over the medium term.

China is projected to remain the world's largest importer of milk products including cheese, butter and SMP. China is also the world's largest WMP importer but is anticipated to import less in response to the buildup of stocks, government subsidies to stabilise the domestic processing sector and developing consumer preferences for raw milk products over reconstituted products. The projected increase in import demand for dairy products in Southeast Asian countries and in African countries will be driven by population growth as well as an expanding middle class which consumes more livestock products in its diet. The Russian Federation (hereafter "Russia"), Mexico and countries in the Near East and North Africa (NENA) region will also continue to be important net importers of dairy products.

In 2023, prices dropped significantly from their high 2022 levels for all dairy products, mainly driven by a decrease in input costs and lower global consumption due to 2022's high prices. Overall, prices for dairy products are projected to develop in line with other major agricultural commodities and to resume a gradual nominal increase following a downward adjustment in the first projection years. Since 2015, the price of butter has been considerably higher than for the SMP and the gap is expected to persist throughout the projection period. This development is attributed to a relatively stronger demand for milk fat compared to non-fat milk solids on the international market.

The dairy sector in major exporting countries is facing several economic and environmental challenges which are expected to continue over the next decade. Although the growth rate of plant-based replacements is strong in certain regions, especially in East Asia, Europe, Oceania and North America, there are conflicting views regarding their environmental impact and health benefits which lead to uncertainties about their long-term impact on dairy demand. Nevertheless, per-capita consumption of fresh dairy products is expected to decline in Europe, Oceania and North America, partly displaced by an increasing consumption of plant-based alternatives. The introduction of a wide range of sustainable production policies and growing consumer concerns about the health implication of consumption of dairy products would impact the projections for the dairy sector. In some countries, dairy production accounts for a substantial share of overall greenhouse gas emissions (GHG), resulting in discussions on how adjustments to dairy production scale and technology could contribute to reducing such emissions. The risk of animal disease outbreaks in some countries could threaten production and trade and limit the development of dairy sector growth, especially in Western Europe. Despite its position as the world's largest milk producer, India has, so far, played only a minor role in the global dairy market. As such, any further integration of India into the international market could have a strong impact. This seems more and more plausible as some Indian dairy companies are actively exploring the prospects of exporting to neighboring countries.

7.2. Current market trends

Dairy prices in 2023 fell significantly from historical high levels

In 2023 the FAO Dairy Price Index value fell sharply by 21% from its high 2022 levels for all dairy products. International dairy prices declined slowly between mid-2022 and the end of 2023. The drivers of this sharp decline were mainly the decrease in input costs and lower global consumption due to the high prices.

World milk production grew 1.5% in 2023 to about 927 Mt. In India and Pakistan, production increased by 3% to reach 220 Mt and 63 Mt respectively, but with little impact on the world dairy market as they trade only marginal quantities of milk and dairy products. Among the three major exporters, the production in 2023 increased in the United States and the European Union but declined in New Zealand. The decrease in milk production in New Zealand is partly explained by dry weather, lower farmgate milk prices, higher production costs and a shrinking dairy herd.

World dairy trade fell in 2023 for a second consecutive year by around 0.2% due to the considerably smaller import demand from China, especially for whole milk powder (WMP). However, other major importers of dairy products-Saudi Arabia and Mexico- increased their imports. Of the major exporters, the United States would be a strong beneficiary of any additional export demand due to production constraints in the European Union and New Zealand.

7.3. Market projections

7.3.1. Consumption

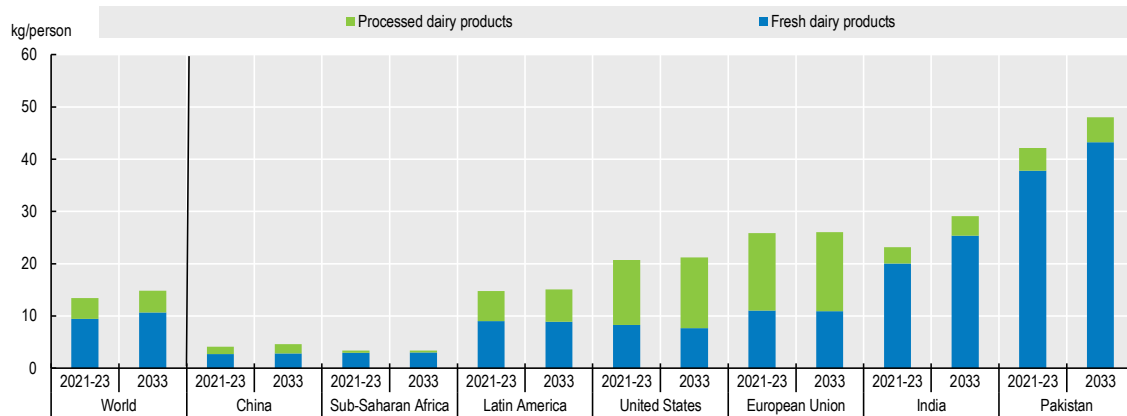
Strong demand in India and Pakistan is leading increased global dairy consumption

Although milk is a highly perishable product which must be processed shortly after collection, most milk is consumed in the form of fresh dairy products,¹ including those fermented and pasteurised. The share of fresh dairy products in global consumption is expected to increase over the next decade due to stronger demand growth in India and Pakistan, which in turn is driven by income and population growth. World per capita consumption of fresh dairy products is anticipated to grow by 1.0% p.a. over the coming decade, primarily driven by higher per-capita income growth.

Milk consumption per capita (in terms of milk solids) varies widely across countries (Figure 7.2), driven by varying growth in incomes and regional preferences. The most significant growth is expected in India and Pakistan, where consumption is expected to increase to 25 and 45 kg per capita, respectively. The average fresh dairy consumption per capita in China is significantly lower than in the European Union and North America. In low- and lower middle-income countries most of the production is consumed in the form of fresh dairy products.

In Europe and North America, overall per capita demand for fresh dairy products is stable or declining but the composition of demand has been shifting over recent years against dairy fat such as full-fat drinking milk and cream. Plant-based dairy replacements are increasingly established and competing more with fresh dairy products than with processed dairy products.

Figure 7.2. Per capita consumption of processed and fresh dairy products in milk solids



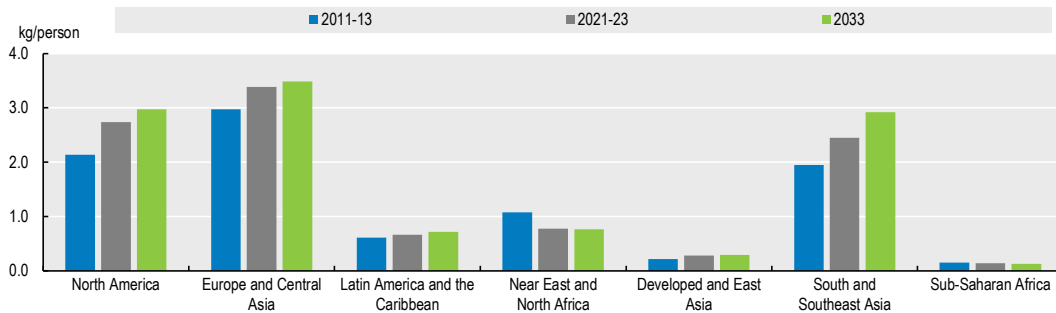
Note: Milk solids are calculated by adding the amount of fat and non-fat solids for each product; Processed dairy products include butter, cheese, skim milk powder and whole milk powder.

Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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The share of processed dairy products, especially cheese, in overall consumption of milk solids is expected to be closely related to incomes, with variations due to local preferences, dietary constraints, and urbanisation. The largest share of total cheese consumption, the second most consumed dairy product, occurs in Europe and North America, where per capita consumption is expected to continue to increase over the projection period. Butter consumption has seen a recovery in North America and Southeast Asia due to shifting preferences. Consumers may be influenced by recent studies that have shed a more positive light on the health impact from butter consumption, contrary to earlier messaging. In Southeast Asian countries, butter is not only the most consumed processed dairy product, accounting for almost half of all processed dairy consumption in terms of milk solids, but it also has the strongest projected growth (Figure 7.3). Most of it will be used as an ingredient in a wide range of products including cookies, cakes, pies and other baked goods.

Figure 7.3. Per capita consumption of butter in selected regions



Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

The dominant use of SMP and WMP will continue to be in the manufacturing sector, notably in confectionery, infant formula, and bakery products. A small share of dairy products, especially SMP and whey powder, are used in animal feed. Whey powders are gaining prominence globally because of their use in the processing of nutritional products, especially of clinical, infant, and elderly preparations and as an import alternative for reconstituted fresh dairy products, such as milk and yogurt especially in Africa and other regions with limited milk production.

In contrast to non-perishable commodities, dairy products experience relatively higher levels of food loss and waste, especially for fresh milk due to its highly perishable nature. Approximately 4.5% is lost during processing. At retail level, distribution waste reduces global food availability by an additional 2.5%, while household waste estimates reach 12%. Over the next decade, food waste volumes in the dairy sector are projected to rise by 17% by 2033, while loss volumes are expected to increase by 13% and 24%, at distribution and at household level respectively compared to current levels.

7.3.2. Production

Greater efficiency in milk production from yield growth

World milk production is projected to grow at 1.6% p.a. (to 1 085 Mt by 2033) over the next decade, faster than most other important agricultural commodities. Growth in the number of cows is expected to be moderate in North America and China but strong in Sub-Saharan Africa and in major milk-producing countries such as India and Pakistan – where yields are low. Yields across the world are expected to grow steadily over the next decade. Nevertheless, in most regions, yield growth is expected to contribute more to production increases than herd growth (Figure 7.4). This yield growth will be achieved through optimising milk production systems, improved animal health and feed efficiencies and improved genetics.

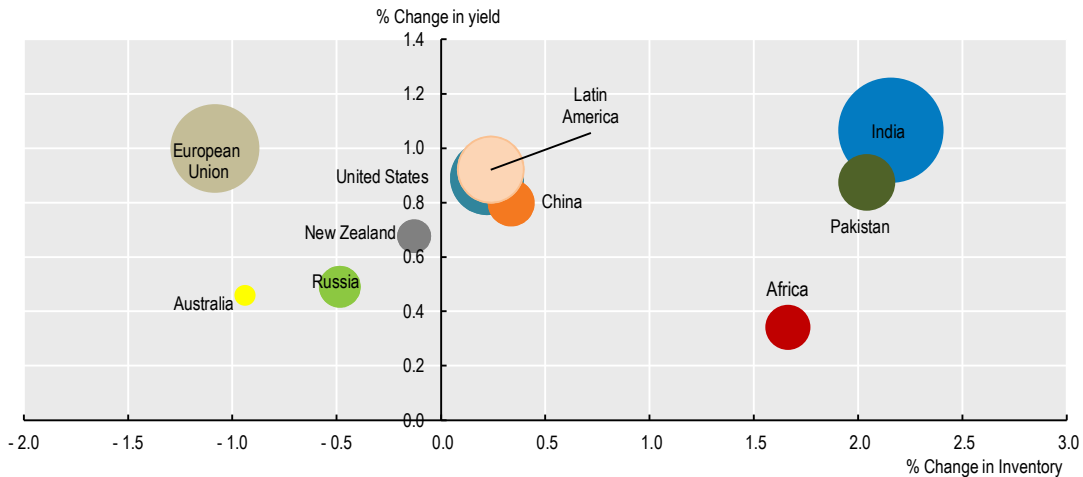
India is the largest producer of milk and is expected to experience a continued strong production growth. Production is based on small households connected to cooperatives for processing and distribution. This integration into the wider supply chains is also important for the value added to dairying in India. The growth is expected to come from more milking cows and buffaloes as well as from yield increases.

Production in the European Union is projected to decline with fewer dairy cows and slower yield growth. Production originates from a mix of grass- and feed-based production systems. A growing share of milk is expected to be organic or from other non-conventional production systems. At present, more than 10% of dairy cows are within, but not limited to, organic systems located in Austria, Denmark, Greece, Latvia, and Sweden. Germany, France and Italy have also seen an increase in organic dairy production. However, as organic yields are about a quarter lower than in conventional production systems and organic systems incur higher production costs, they need to command a substantial price premium to compensate.

The average yields per cow in North America is four times higher than the global average, as their share of grass-based production is low, and feeding is focused on high yields from specialised dairy herds (Figure 7.4). Dairy herds in the United States and Canada are expected to remain largely unchanged and production growth to originate from further yield increases. As domestic demand is projected to remain stronger for milk fats, the United States will continue to expand SMP production.

Although the share of New Zealand in world milk production is only 2.5%, it is the most export-orientated country. After expanding milk production strongly over the last twenty years, milk output growth has stalled in recent years, and is projected to grow at 0.5% p.a. over the next decade. Milk production is mainly grass-based, and yields are considerably lower than in North America and Europe. However, the cost efficiency of grass management allows New Zealand to be competitive. The main constraining factors for growth are land availability, increasing environmental restrictions and the pricing of enteric methane from 2025 (Zero Carbon Amendment Act of 2019 to the Climate Change Response Act of 2002). Nevertheless a shift to more feed-based production systems is not likely.

Figure 7.4. Annual changes in inventories of dairy herd and yields between 2024 and 2033



Note: The size of the bubbles refers to the total cow milk production in the base period 2021-23.

Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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Strong production growth is expected in Africa, mostly due to larger herds. These will usually have low yields, and a considerable share of milk production will come from goats and sheep. Most cows, goats and sheep graze, and are used for other purposes including meat production, traction, and as capital assets (savings). Additional grazing occurs on the same pasture, leading to a more intensive use which may lead to local over-grazing. Over the projection period, about a third of the global dairy animal population is projected to be in Africa and to account for around 6% of world milk production.

Globally, around 30% of milk will be further processed into products such as butter, cheese, SMP, WMP, or whey powder in the coming decade. However, there are notable regional differences. In high-income countries, most of the milk production is transformed into dairy products. Butter and cheese currently account for a large share of consumption of milk solids in Europe and North America due to the significant direct food demand for these products. SMP and WMP are largely produced for trade, for use in the food processing sector, notably in confectionery, infant formulae, and bakery products. In low- and lower middle-income countries most of the milk production goes into fresh dairy products.

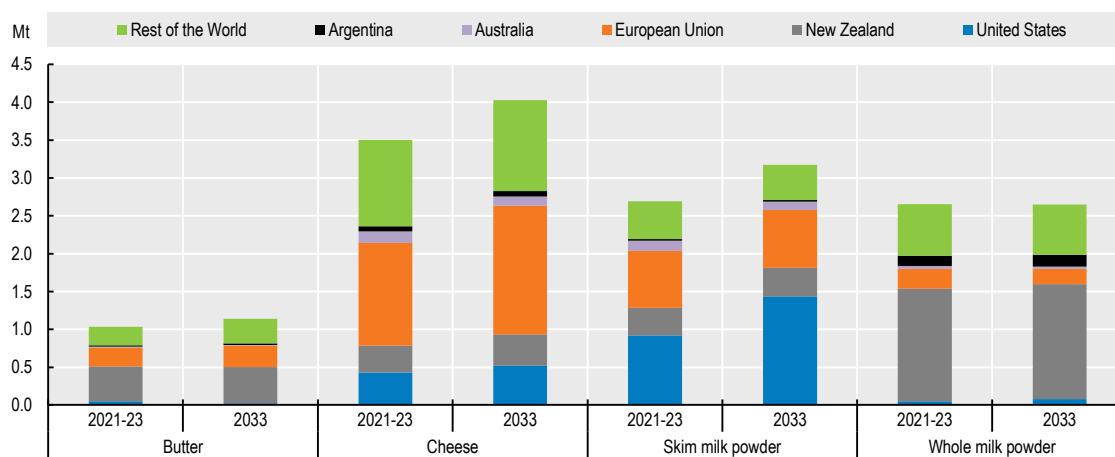
7.3.3. Trade

Trade growth will be driven by an increasing import demand from diversified destination countries

Most dairy products are domestically consumed. Only a small share (around 7%) of world milk production, is traded internationally, primarily due to its perishability and high-water content (more than 85%). Over 50% of world production of WMP and SMP is traded since these products are often produced only to store and trade milk over a longer time period or distance. Fresh dairy products such as fermented milk products are traded in small amounts between neighbouring countries Canada and the United States, or the European Union and Switzerland, for example. An exception is imports of liquid milk by China from the European Union and New Zealand, due to Ultra-High Temperature milk and cream products capable of being shipped long distances, but also favourable Chinese freight rates in some cases. China's net imports of fresh dairy products over the base period reached 1.2 Mt, and this is not projected to increase much over the next decade.

World dairy trade is projected to expand over the next decade to reach 13.9 Mt in 2033, 12% higher than during the base period. Most of this growth will be met by increased exports from the United States, the European Union and New Zealand. These three countries are projected to jointly account for around 65% of cheese, 70% of WMP, 75% of butter, and 80% of SMP exports in 2033 (Figure 7.5). Australia has lost market shares although it remains a notable exporter of cheese and SMP. Argentina is also an important exporter of WMP and is projected to account for 6% of world exports by 2033. In recent years, Belarus has become an important exporter, orienting its exports primarily to the Russian market due to the Russian embargo as of 2015 on several major dairy exporting countries.

Figure 7.5. Exports of dairy products by region



Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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The European Union will continue to be the main world cheese exporter, followed by the United States and New Zealand. The United Kingdom, Russia, Japan, Saudi Arabia and China are projected to be the top five cheese importers in 2033. Since consumers value variety, these countries are often also exporters of cheese and international trade is expected to offer wider choices of cheeses in the domestic markets.

New Zealand remains the primary source for butter and WMP on the international market, and its market shares are projected to be around 45% and 60%, respectively, by 2033. China is the principal importer of WMP from New Zealand, but trade between the two countries is projected to be less dynamic over the projection period. The expected growth in domestic milk production in China will limit the growth in WMP imports. However, as China removed imports tariffs on milk powder from New Zealand this year, some exporters may start taking advantage. It is also expected that New Zealand will diversify and slightly increase its production of cheese over the *Outlook* period. Russia, the second largest importer of butter, together with China are expected to account for 25% of world imports.

The United States is expected to be the most dynamic large exporter over the next decade and to expand SMP exports especially. This would require growth in drying capacity beyond current investments. SMP imports are dispersed globally as it is often the easiest dairy product to trade for use in food processing.

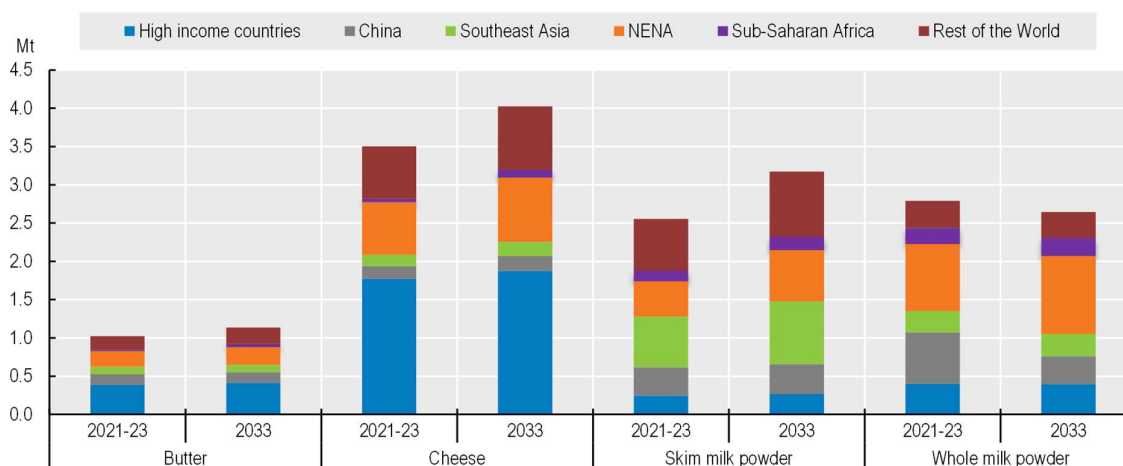
Imports are spread more widely across countries, with the dominant destinations for all dairy products being the NENA, high-income countries, Southeast Asia, and China (Figure 7.6). China is expected to continue to be the world's major dairy importer. WMP imports from China are projected to represent 14%

of global imports in 2033, a 10% drop from the base period. Africa is expected to surpass China as a main destination of WMP in 2033. Per capita consumption of dairy products in China is relatively low compared to traditional markets, but there have been significant increases in demand over the past decade, with growth projected to continue. Most of its dairy imports are sourced from Oceania, although in recent years the European Union has increased its exports of butter and SMP to China.

The global whey powder market is growing driven by rising demand for diets high in protein and animal feeding. Trade of whey powder is expected to increase over the medium with China the top import market mainly for animal feed additives. The European Union is projected to remain the dominant exporter of whey powder, which together with the United States account for more than 40% of the world exports.

While some regions, such as India and Pakistan, are self-sufficient, total dairy consumption in Africa, Southeast Asian countries, and the NENA is projected to grow faster than production, leading to an increase in dairy imports. As liquid milk is expensive to trade (high volume/value ratio), this additional demand growth is expected to be met with milk powders, where water is added for final consumption or further processing. Imports by NENA are expected to originate primarily from the European Union, while the United States and Oceania are expected to be the main suppliers of powders to Southeast Asia.

Figure 7.6. Imports of dairy products by region



Note: NENA stands for Near East and North Africa, and is defined as in Chapter 2. Southeast Asia contains Indonesia, Malaysia, Philippines, Thailand and Viet Nam.

Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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7.3.4. Prices

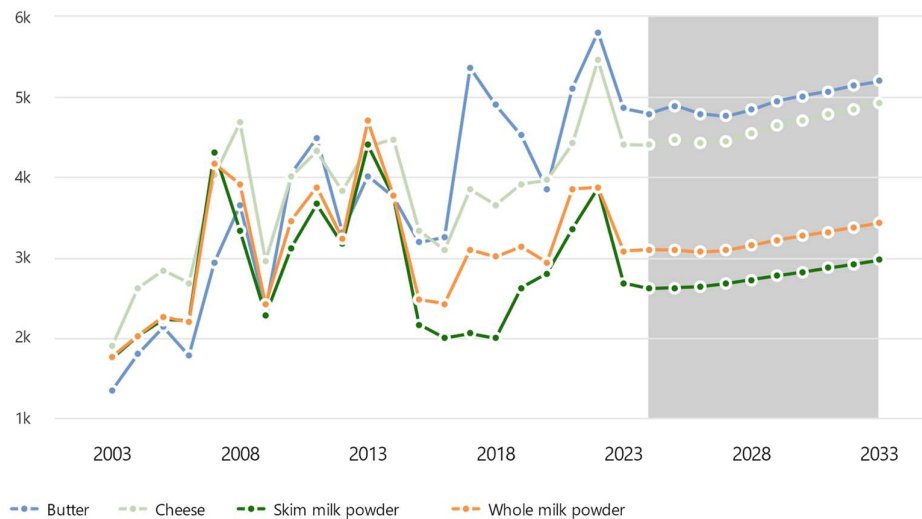
Nominal international dairy prices will gradually and slightly increase

International dairy prices are prices of processed products from the main exporters in Oceania and Europe. The two main reference prices are butter and SMP, where butter is the reference for milk fat and SMP for other milk solids. Milk fat and other milk solids together account for about 13% of the overall weight of milk, the remainder being water. Since 2015, the price of butter has increased considerably more than SMP. Increased demand for milk fat resulted in a price gap emerging between the two products and the price of butter will continue to be supported by stronger demand for milk fat compared to other milk solids on the

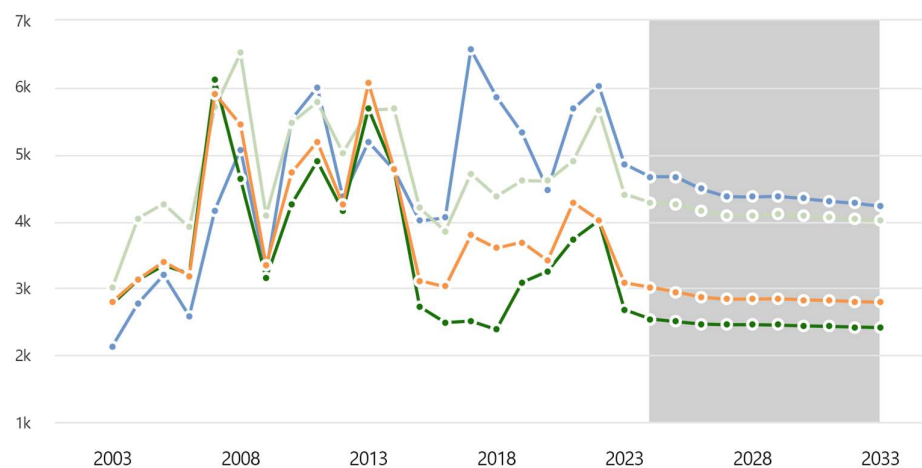
international market. Therefore, the gap between the price of butter and SMP is assumed to remain a defining feature over the coming decade (Figure 7.7). Prices of butter and SMP are foreseen to increase slightly in nominal terms over the projection period after a significant drop in 2023 from historically high levels as input prices are expected to resume with a gradual increase. World prices for WMP and cheese are expected to be affected by butter and SMP price trends, in line with the respective content of fat and non-fat solids.

Figure 7.7. Dairy product prices, 2003-2033

USD/t (nominal price)



USD/t (real price)



Note: Butter, FOB export price, 82% butterfat, Oceania; Skim Milk Powder, FOB export price, non-fat dry milk, 1.25% butterfat, Oceania; Whole Milk Powder, FOB export price, 26% butterfat, Oceania; Cheese, FOB export price, cheddar cheese, 39% moisture, Oceania. Real prices are nominal world prices deflated by the US GDP deflator (2023=1).

Source: OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

The strong volatility of international dairy prices stems from its small trade share, the dominance of a few exporters, and a widely restrictive trade policy environment. Most domestic markets are only loosely connected to those international dairy prices as fresh dairy products dominate consumption, and only a small share of milk is processed as compared to that which is fermented or pasteurised.

7.4. Risks and uncertainties

Environmental and health concerns are becoming more significant

Plant-based dairy alternatives (e.g. soya, almond, rice, and oat drinks) have increased in popularity in many regions, especially in North America, Europe and East Asia. Available replacements have continued to expand beyond the more traditional options, branching into various sources from nuts, legumes and other crops. Key drivers of the expansion include health concerns and increasing consumer awareness of the environmental impact of dairy production, and lactose intolerance. The growth rates of plant-based replacements for dairy products are strong, albeit from a low base, although the evidence regarding their environmental impact and relative health benefits is contested. The sustainability of popular replacements such as almond and soya drinks have been questioned as more consumers consider other environmental issues in addition to GHG emissions, such as water usage and deforestation. Similarly, lactose intolerance is a concern for some consumers with a range of lactose-free dairy products becoming available for those who do not prefer plant-based replacements. Overall, there is uncertainty surrounding the long-term impact of plant-based replacements on the dairy sector.

Environmental legislation could have a strong impact on the future development of dairy production. GHG emissions from dairy activities make up a significant share of total emissions in some countries, such as New Zealand and Ireland, and more stringent environmental policies and initiatives such as the Pathways to Dairy Net Zero launched in September 2021 by the dairy sector could affect the level and nature of dairy production to curb such emissions. The growing trend towards sustainable practices such as those related to water access and manure management are associated areas where policy changes could impact on dairy production. Nevertheless, stricter environmental legislation could also lead to innovative solutions that improve the long-term competitiveness of the sector. Overall, the global level of GHG emissions will largely depend on efficiency gains in India and other countries with high cattle populations and extensive production. In addition, climate change and extreme weather events, already experienced in some countries and regions, could aggravate the viability of milk production in the affected countries.

Russia's war against Ukraine has significantly heightened the uncertainty of energy, fertiliser and other agricultural supplies and may slow down economic growth. Market impacts could be felt in related sectors such as dairy through increased input costs for these products. It could also increase the interest in circular agriculture with a focus on using fewer external inputs, an option available and widely used in dairy production.

Changes in domestic policies remain an uncertainty. Under the United States-Mexico-Canada Agreement (USMCA), Canada has reorganised SMP exports, allowing increased market access. In the European Union, intervention buying of SMP and butter at fixed prices remains possible under certain circumstances, and this already had a considerable market impact in recent years.

Dairy trade flows could be substantially altered by changes in the trade environment. Modifications to existing trade agreements or the creation of new ones, could affect dairy demand and trade flows. In addition, India and Pakistan, the big dairy consuming countries, have not integrated into the international dairy market as domestic production is projected to expand fast enough to respond to growing home demand. Future investment in cold chain infrastructure in these regions will contribute to increase their degree of dairy self-sufficiency. Another challenge faced by the sector is the risk of disease outbreak. As

the world is increasingly inter-connected through trade, including trans-boundary movement of animals, animal disease could rapidly spread across the borders and disrupt the dairy industry growth.

Note

¹ Fresh dairy products contain all dairy products and milk which are not included in processed products (butter, cheese skim milk powder, whole milk powder, whey powder and, for few cases casein). The quantities are in cow milk equivalent.

Table C.5. World dairy projections: Milk, butter and cheese
Calendar year

		Average 2021-23est	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
MILK												
World												
Production (Total milk)	Mt pw	915.3	942.9	955.2	975.3	992.6	1 006.7	1 021.3	1 038.3	1 054.8	1 070.4	1 086.1
Production (Cow milk)	Mt pw	884.2	911.1	922.8	942.4	959.3	973.0	987.0	1 003.4	1 019.4	1 034.5	1 049.7
Inventory (Cow milk)	Mn hd	340.6	343.6	349.7	358.2	362.3	365.3	370.3	375.7	380.2	384.4	388.8
Yield (Cow Milk)	t/head	2.60	2.65	2.64	2.63	2.65	2.66	2.67	2.67	2.68	2.69	2.70
Developed countries												
Production (Total milk)	Mt pw	411.4	415.0	416.1	419.2	421.3	423.5	425.2	427.5	429.6	431.5	433.5
Production (Cow milk)	Mt pw	407.7	411.3	412.3	415.4	417.5	419.7	421.3	423.6	425.6	427.5	429.5
Inventory (Cow milk)	Mn hd	63.3	62.2	62.1	62.2	62.1	61.8	61.6	61.5	61.3	61.2	61.0
Yield (Cow Milk)	t/head	6.45	6.61	6.64	6.68	6.73	6.79	6.84	6.89	6.94	6.99	7.04
Developing countries												
Production (Total milk)	Mt pw	503.9	527.9	539.0	556.1	571.3	583.2	596.1	610.8	625.2	638.9	652.6
Production (Cow milk)	Mt pw	476.5	499.8	510.4	527.1	541.8	553.3	565.6	579.8	593.8	606.9	620.2
Inventory (Cow milk)	Mn hd	277.3	281.4	287.6	295.9	300.2	303.5	308.6	314.2	318.9	323.3	327.8
Yield (Cow Milk)	t/head	1.72	1.78	1.77	1.78	1.80	1.82	1.83	1.85	1.86	1.88	1.89
OECD¹												
Production (Total milk)	Mt pw	375.3	379.3	380.5	382.8	384.3	386.4	388.1	390.4	392.6	394.5	396.6
Production (Cow milk)	Mt pw	370.7	374.8	375.7	378.0	379.5	381.6	383.2	385.5	387.6	389.5	391.4
Inventory (Cow milk)	Mn hd	53.7	53.2	53.0	52.9	52.6	52.4	52.3	52.2	52.1	52.0	51.9
Yield (Cow Milk)	t/head	6.90	7.04	7.09	7.15	7.21	7.28	7.33	7.39	7.44	7.50	7.55
FRESH DAIRY PRODUCTS												
World												
Consumption	Mt pw	481.5	499.6	509.0	520.2	529.8	538.9	548.2	558.3	568.1	577.6	587.4
Developed countries												
Consumption	Mt pw	141.0	141.2	141.3	142.2	142.1	142.1	142.0	142.1	142.0	141.9	141.8
Developing countries												
Consumption	Mt pw	340.5	358.4	367.7	378.0	387.7	396.8	406.2	416.2	426.1	435.7	445.5
OECD¹												
Consumption	Mt pw	106.0	106.3	106.4	107.2	107.1	107.0	107.0	107.1	106.9	106.7	106.5
BUTTER												
World												
Production	Mt pw	13.1	13.5	13.6	14.0	14.4	14.5	14.7	15.0	15.3	15.5	15.7
Consumption	Mt pw	13.0	13.5	13.6	14.0	14.4	14.5	14.7	15.0	15.3	15.5	15.7
Price ²	USD/t	5 258	4 792	4 894	4 791	4 757	4 838	4 951	5 014	5 071	5 140	5 194
Developed countries												
Production	Mt pw	4.9	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.2
Consumption	Mt pw	4.4	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6
Developing countries												
Production	Mt pw	8.1	8.5	8.6	9.0	9.3	9.4	9.6	9.9	10.1	10.3	10.6
Consumption	Mt pw	8.6	9.0	9.1	9.5	9.8	10.0	10.1	10.4	10.7	10.9	11.1
OECD¹												
Production	Mt pw	4.9	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.2	5.2
Consumption	Mt pw	4.4	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6
CHEESE												
World												
Production	Mt pw	25.6	26.1	26.4	26.7	27.1	27.4	27.6	27.9	28.2	28.5	28.8
Consumption	Mt pw	25.7	26.1	26.4	26.7	27.0	27.4	27.6	27.9	28.2	28.5	28.8
Price ³	USD/t	4 760	4 399	4 471	4 435	4 454	4 541	4 638	4 711	4 778	4 853	4 922
Developed countries												
Production	Mt pw	21.1	21.5	21.7	21.9	22.2	22.4	22.6	22.8	23.1	23.3	23.5
Consumption	Mt pw	19.9	20.3	20.4	20.6	20.8	21.0	21.2	21.4	21.5	21.7	21.9
Developing countries												
Production	Mt pw	4.5	4.6	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.2	5.3
Consumption	Mt pw	5.7	5.9	6.0	6.1	6.2	6.3	6.5	6.6	6.7	6.8	6.9
OECD¹												
Production	Mt pw	20.4	20.8	21.0	21.2	21.4	21.6	21.8	22.0	22.2	22.4	22.6
Consumption	Mt pw	19.4	19.7	19.9	20.1	20.3	20.4	20.6	20.8	20.9	21.1	21.3

Note : Calendar Year; except year ending 30 June for New Zealand in aggregates. Average 2021-23est: Data for 2023 are estimated. Prices are in nominal terms.

1. Excludes Iceland and Costa Rica but includes all current European Union member countries.

2. FOB export price, butter, 82% butterfat, Oceania.

3. FOB export price, cheddar cheese, 39% moisture, Oceania.

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.6. World dairy projections: Powders and casein
Calendar year

		Average 2021-23est	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
SKIMMED MILK POWDER												
World												
Production	Mt pw	4.6	4.6	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.3	5.4
Consumption	Mt pw	4.5	4.6	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.3	5.4
Price ¹	USD/t	3 300.2	2 609.9	2 621.8	2 633.8	2 671.1	2 722.1	2 770.2	2 815.5	2 865.0	2 912.8	2 963.6
Developed countries												
Production	Mt pw	3.8	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.1	4.2	4.3
Consumption	Mt pw	1.6	1.5	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Developing countries												
Production	Mt pw	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1
Consumption	Mt pw	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.6	3.7	3.8
OECD²												
Production	Mt pw	3.6	3.6	3.6	3.7	3.8	3.8	3.9	3.9	4.0	4.1	4.1
Consumption	Mt pw	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9
Stock changes	Mt pw	-0.005	0.003	-0.001	-0.002	-0.001	0.000	0.000	0.000	0.000	0.000	0.000
WHOLE MILK POWDER												
World												
Production	Mt pw	5.0	5.0	5.1	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8
Consumption	Mt pw	5.1	5.0	5.1	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8
Price ³	USD/t	3 601.6	3 096.2	3 091.7	3 063.7	3 085.8	3 148.0	3 215.8	3 267.5	3 319.9	3 373.8	3 427.0
Developed countries												
Production	Mt pw	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Consumption	Mt pw	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Developing countries												
Production	Mt pw	2.6	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.3	3.3	3.4
Consumption	Mt pw	4.5	4.4	4.5	4.6	4.7	4.8	4.8	4.9	5.0	5.1	5.2
OECD²												
Production	Mt pw	2.7	2.6	2.6	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Consumption	Mt pw	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
WHEY POWDER												
Price ⁴	USD/t	1 134.9	832.9	820.7	808.5	817.7	832.1	848.7	864.0	879.0	893.1	908.4
CASEIN												
Price ⁵	USD/t	10 620.7	10 878.6	10 693.8	10 654.5	10 755.5	10 927.1	11 108.9	11 288.1	11 463.9	11 629.3	11 802.9

Note : Calendar Year; except year ending 30 June for New Zealand in aggregates. Average 2021-23est: Data for 2023 are estimated. Prices are in nominal terms.

1. FOB export price, non-fat dry milk, 1.25% butterfat, Oceania.
2. Excludes Iceland and Costa Rica but includes all current European Union member countries.
3. FOB export price, WMP 26% butterfat, Oceania.
4. FOB export price, sweet whey non-hygroscopic, Western Europe.
5. Export price, New Zealand.

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.31.1 Butter projections: Production and trade
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		IMPORTS (kt)		Growth (%) ⁴		EXPORTS (kt)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	13 054	15 717	2.20	1.73	1 024	1 138	0.68	0.80	1 034	1 138	-0.31	0.80
NORTH AMERICA	1 058	1 204	2.00	0.99	76	77	14.54	-1.41	49	24	5.95	-6.65
Canada	116	146	3.94	2.23	28	36	11.72	0.40			..	..
United States	942	1 058	1.79	0.83	49	41	16.45	-2.79	49	24	6.19	-6.65
LATIN AMERICA	464	512	0.95	0.99	54	76	-2.35	1.67	43	38	-1.36	-0.11
Argentina	31	35	-3.34	1.10	0	0	..	..	21	20	9.46	0.15
Brazil	113	111	2.05	0.10	3	10	9.98	6.63	1	1	-5.56	-7.78
Chile	29	32	3.80	0.79	5	3	-2.77	1.16	1	1	-12.05	-0.86
Colombia	22	24	0.43	1.19	0	0	..	..	0	0	..	..
Mexico	211	246	1.03	1.21	24	37	-4.64	1.19	2	3	-13.20	0.00
Paraguay	1	1	5.35	2.67	0	0	..	..	1	1	17.86	2.42
Peru	7	7	7.92	0.26	6	8	-1.69	3.24	0	0	..	..
EUROPE	3 082	3 117	1.10	0.08	250	257	-0.36	0.40	406	444	0.54	1.09
European Union ¹	2 334	2 343	1.19	-0.01	52	45	5.49	-2.44	251	285	1.09	1.11
United Kingdom	207	203	5.11	-0.03	58	68	-6.94	2.14	49	45	-1.17	0.87
Russia	302	316	2.35	0.26	120	124	0.62	0.89	4	4	-2.97	0.00
Ukraine	43	32	-12.28	1.09	4	3	-0.90	2.07	11	2	-3.13	-2.03
AFRICA	320	368	-0.07	1.66	64	62	-9.79	2.24	10	13	-3.11	-0.05
Egypt	90	90	-4.09	0.33	19	14	-14.85	3.56	4	6	11.35	-2.51
Ethiopia	19	25	3.22	3.08	0	0	..	..	0	2	..	24.98
Nigeria	12	14	-0.23	1.88	2	3	-10.66	7.84	0	0	..	..
South Africa	16	16	1.64	1.12	3	2	-4.67	0.42	3	2	-5.50	-0.41
ASIA	7 600	9 953	3.30	2.55	539	625	2.12	1.09	84	135	8.54	4.78
China ²	99	111	0.70	1.01	135	138	7.58	0.33	2	2	1.10	1.00
India	5 194	6 889	3.68	2.83	0	1	-26.43	..	26	1	16.45	-27.33
Indonesia	0	0	..	..	23	23	-0.22	0.57	0	0	..	..
Iran	197	230	0.66	1.77	1	0	-50.37	..	10	35	36.72	12.07
Japan	75	73	2.54	-0.45	12	15	0.88	0.10	0	0	..	..
Kazakhstan	28	29	7.02	1.73	7	11	-3.23	0.76	4	2	34.75	-0.75
Korea	55	51	-3.45	-0.48	28	36	22.32	1.47	0	0	..	..
Malaysia	0	0	..	..	22	23	2.00	0.53	6	8	-0.87	0.00
Pakistan	1 286	1 697	3.12	2.07	0	1	-0.98	11.03	0	0	..	..
Philippines	0	0	..	..	30	30	3.66	1.17	1	1	..	0.00
Saudi Arabia	8	10	2.16	3.09	54	64	-0.53	0.83	12	12	16.13	-0.83
Thailand	3	4	4.19	1.63	13	12	-0.22	0.02	1	1	-2.42	5.42
Türkiye	270	407	3.13	2.97	3	2	-23.95	-2.09	6	59	0.49	16.52
Viet Nam	0	0	..	..	12	11	-0.53	0.43	0	0	..	..
OCEANIA	530	563	-2.34	0.24	40	40	4.94	0.34	443	484	-2.30	0.35
Australia	70	59	-6.29	-1.04	35	35	5.77	0.00	17	7	-10.92	-1.07
New Zealand	459	503	-1.56	0.40	1	1	0.26	1.00	425	477	-1.89	0.37
DEVELOPED COUNTRIES	4 933	5 161	1.00	0.33	421	452	2.29	0.36	911	964	-0.69	0.37
DEVELOPING COUNTRIES	8 121	10 556	2.98	2.49	603	685	-0.36	1.11	123	174	2.93	3.68
LEAST DEVELOPED COUNTRIES	305	359	2.40	1.94	12	30	-7.33	4.85	2	0	-18.68	..
OECD³	4 851	5 208	1.08	0.50	306	335	1.85	0.02	801	903	-1.06	0.86

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.31.2 Butter projections: Consumption, food
Calendar year

	CONSUMPTION (kt)		Growth (%) ⁴		FOOD (kg/cap)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	13 048	15 716	2.33	1.74	1.6	1.7	1.40	0.91
NORTH AMERICA	1 091	1 255	2.57	1.10	2.7	3.0	3.23	0.60
Canada	142	182	5.31	2.13	3.5	4.0	4.23	1.34
United States	948	1 073	2.21	0.93	2.7	2.8	3.08	0.47
LATIN AMERICA	475	551	0.65	1.16	0.7	0.7	-0.19	0.52
Argentina	10	15	-13.90	2.53	0.2	0.3	-14.55	2.29
Brazil	115	120	2.42	0.54	0.5	0.5	1.73	0.11
Chile	32	34	4.20	0.88	1.5	1.6	2.90	0.60
Colombia	22	24	0.27	1.22	0.4	0.4	-1.10	0.68
Mexico	233	281	0.57	1.22	1.7	1.9	-0.38	0.60
Paraguay	0	0	..	..	0.0	0.0	..	..
Peru	13	15	2.58	1.74	0.4	0.4	1.13	0.81
EUROPE	2 927	2 931	1.09	-0.04	3.7	3.7	0.98	0.09
European Union ¹	2 135	2 102	1.37	-0.22	4.4	4.4	1.12	-0.09
United Kingdom	216	226	1.88	0.39	3.0	3.1	1.41	0.11
Russia	418	437	1.80	0.44	2.7	3.0	1.79	0.73
Ukraine	36	33	-13.56	1.30	0.8	0.8	-12.11	1.62
AFRICA	374	417	-2.23	1.80	0.2	0.2	-4.72	-0.41
Egypt	105	97	-6.99	0.94	0.9	0.7	-8.82	-0.50
Ethiopia	19	23	3.27	2.11	0.1	0.1	0.52	0.00
Nigeria	14	18	-2.44	2.77	0.1	0.1	-5.17	0.52
South Africa	16	16	2.65	1.31	0.2	0.2	1.53	0.41
ASIA	8 057	10 444	3.18	2.43	1.6	2.0	2.36	1.87
China ²	232	246	4.19	0.62	0.1	0.2	3.98	0.77
India	5 168	6 888	3.63	2.87	3.5	4.3	2.62	2.06
Indonesia	23	23	-0.29	0.57	0.1	0.1	-0.95	0.00
Iran	188	195	-2.92	0.64	2.0	1.9	-4.06	0.06
Japan	89	88	2.69	-0.36	0.7	0.7	3.03	0.24
Kazakhstan	31	38	3.43	1.57	1.5	1.6	2.22	0.54
Korea	83	88	0.93	0.29	1.5	1.6	0.72	0.47
Malaysia	16	15	3.03	0.82	0.4	0.4	1.80	0.00
Pakistan	1 286	1 698	3.11	2.08	5.2	5.6	1.51	0.24
Philippines	29	29	3.45	1.20	0.2	0.2	2.11	0.00
Saudi Arabia	50	62	-2.19	1.51	1.3	1.4	-3.71	0.30
Thailand	16	14	0.68	0.01	0.2	0.2	0.43	0.00
Türkiye	267	350	1.95	1.71	3.0	3.6	0.97	1.14
Viet Nam	12	11	-0.55	0.43	0.1	0.1	-1.19	0.00
OCEANIA	124	119	1.39	-0.16	2.4	2.0	0.06	-1.27
Australia	86	86	-0.19	-0.63	3.0	2.7	-1.66	-1.53
New Zealand	34	27	9.12	0.97	4.5	2.8	20.00	0.79
DEVELOPED COUNTRIES	4 447	4 649	1.63	0.33	2.9	3.0	1.57	0.18
DEVELOPING COUNTRIES	8 601	11 067	2.71	2.38	1.3	1.5	1.53	1.41
LEAST DEVELOPED COUNTRIES	315	389	2.11	2.14	0.3	0.3	-0.29	-0.02
OECD³	4 361	4 640	1.72	0.41	2.9	3.0	1.51	0.20

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.32.1 Cheese projections: Production and trade
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		IMPORTS (kt)		Growth (%) ⁴		EXPORTS (kt)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	25 640	28 803	1.55	1.09	3 505	4 025	2.68	1.49	3 502	4 025	2.21	1.49
NORTH AMERICA	6 843	8 083	2.32	1.60	190	193	1.14	-0.39	436	532	3.21	1.83
Canada	496	603	2.06	2.09	49	58	8.91	1.01	9	9	-4.76	0.44
United States	6 347	7 480	2.35	1.56	141	135	-0.74	-0.94	428	523	3.45	1.85
LATIN AMERICA	2 349	2 740	0.60	1.57	457	546	5.49	1.65	183	166	2.12	-0.40
Argentina	459	547	0.26	1.60	3	1	2.65	0.00	67	70	3.13	0.13
Brazil	768	935	0.43	2.04	35	30	4.68	-0.49	4	6	4.31	1.58
Chile	107	114	2.92	0.33	63	74	11.05	2.79	7	6	1.47	-2.65
Colombia	63	59	0.43	0.89	7	21	11.91	5.26	1	1	20.17	-2.79
Mexico	332	400	-0.72	1.30	147	172	3.73	2.30	12	9	13.41	0.00
Paraguay	0	0	..	..	4	4	5.63	0.91	0	0	..	..
Peru	28	31	2.32	1.20	10	17	13.86	5.04	0	0	..	..
EUROPE	12 667	13 619	1.43	0.63	1 101	1 124	0.99	1.05	1 965	2 380	2.67	2.14
European Union ¹	10 814	11 445	1.41	0.48	186	181	0.22	0.78	1 359	1 697	2.07	2.27
United Kingdom	521	581	2.80	0.41	404	383	-2.25	0.89	160	122	1.35	-0.45
Russia	551	669	1.36	1.53	321	344	3.64	1.53	37	23	5.51	-2.96
Ukraine	82	62	-10.21	2.85	41	62	25.65	1.51	8	5	-5.91	-1.49
AFRICA	939	1 068	-0.58	1.36	148	214	-0.42	4.16	51	25	-14.58	-6.47
Egypt	547	592	-1.54	0.84	17	24	-11.48	10.03	33	10	-16.99	-11.28
Ethiopia	7	10	5.73	3.08	0	0	..	..	0	1	..	25.03
Nigeria	10	7	-0.42	-3.69	1	10	6.33	21.55	0	0	..	..
South Africa	59	61	1.49	0.95	8	11	-6.08	2.40	9	6	0.49	-2.34
ASIA	2 009	2 384	1.59	1.60	1 497	1 826	4.02	1.72	361	388	6.21	0.01
China ²	208	248	1.02	1.74	164	189	10.65	1.02	0	0	..	..
India	6	9	8.01	3.16	2	2	4.96	0.00	9	12	8.19	2.42
Indonesia	0	0	..	..	30	33	4.31	1.40	3	2	15.56	-1.38
Iran	331	370	1.80	1.12	0	0	..	..	99	107	13.83	1.16
Japan	166	191	2.42	1.11	273	297	1.47	1.47	1	0	11.71	..
Kazakhstan	38	38	6.04	1.56	34	52	7.00	2.30	3	2	14.05	-2.19
Korea	43	44	1.45	0.31	152	173	5.10	1.76	1	1	21.64	0.00
Malaysia	0	0	..	..	34	38	7.33	2.05	3	3	34.21	-2.01
Pakistan	0	0	..	..	1	2	-13.85	2.89	0	0	..	..
Philippines	0	0	..	..	50	83	10.13	4.90	1	1	19.98	-4.67
Saudi Arabia	127	160	-1.15	2.63	208	233	3.35	0.47	81	77	-2.49	-0.47
Thailand	2	2	-9.66	1.63	19	20	6.52	0.01	1	1	18.48	2.97
Türkiye	231	325	1.15	1.95	9	5	-3.81	-1.34	46	85	0.45	1.36
Viet Nam	0	0	..	..	16	17	17.63	0.40	1	1	..	0.00
OCEANIA	833	908	2.76	0.71	113	122	1.40	0.60	506	535	1.04	0.73
Australia	439	453	3.25	0.34	98	103	0.64	0.38	150	125	-1.47	-0.43
New Zealand	394	455	2.26	1.09	13	16	8.70	2.00	356	410	2.29	1.11
DEVELOPED COUNTRIES	21 098	23 481	1.81	0.99	1 756	1 871	1.27	1.10	2 928	3 459	2.44	1.84
DEVELOPING COUNTRIES	4 542	5 322	0.44	1.57	1 749	2 154	4.30	1.84	575	566	1.18	-0.45
LEAST DEVELOPED COUNTRIES	439	526	1.17	2.15	28	83	2.58	6.89	0	0	..	..
OECD³	20 374	22 597	1.75	0.92	1 652	1 757	1.13	1.25	2 609	3 072	1.95	1.72

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated

1. Refers to all current European Union member countries.

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 current European Union member countries.

4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.32.2 Cheese projections: Consumption, food
Calendar year

	CONSUMPTION (kt)		Growth (%) ⁴		FOOD (kg/cap)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	25 656	28 792	1.63	1.09	3.0	3.1	0.57	0.26
NORTH AMERICA	6 586	7 733	2.30	1.53	16.8	18.7	1.65	1.01
Canada	537	652	2.89	2.02	13.3	14.8	1.87	1.24
United States	6 048	7 081	2.25	1.49	17.2	19.1	1.64	1.00
LATIN AMERICA	2 623	3 120	1.21	1.70	3.7	4.1	0.34	1.06
Argentina	395	478	-0.13	1.83	8.2	9.3	-0.86	1.28
Brazil	800	959	0.55	1.93	3.5	4.0	-0.12	1.49
Chile	163	182	5.54	1.37	7.9	8.5	4.23	1.09
Colombia	68	80	1.00	1.85	1.2	1.4	-0.37	1.30
Mexico	467	563	0.28	1.61	3.4	3.9	-0.57	0.99
Paraguay	4	4	7.04	0.97	0.5	0.4	5.56	0.00
Peru	38	47	4.26	2.41	1.0	1.1	2.80	1.47
EUROPE	11 827	12 363	1.22	0.40	14.8	15.7	1.11	0.53
European Union ¹	9 666	9 929	1.33	0.21	20.1	20.8	1.09	0.33
United Kingdom	764	842	0.12	0.76	10.8	11.6	-0.37	0.49
Russia	834	990	1.92	1.66	5.5	6.8	1.92	1.97
Ukraine	115	120	-5.64	2.21	2.7	3.0	-4.00	2.53
AFRICA	1 036	1 258	0.83	2.03	0.7	0.6	-1.72	-0.19
Egypt	530	606	0.03	1.49	4.4	4.3	-1.89	0.04
Ethiopia	8	9	5.43	2.10	0.1	0.1	2.62	0.00
Nigeria	11	16	0.21	4.45	0.0	0.0	-2.58	2.18
South Africa	58	66	0.30	1.54	0.9	0.9	-0.81	0.64
ASIA	3 145	3 822	2.21	1.83	0.6	0.7	1.38	1.27
China ²	372	437	4.31	1.43	0.2	0.3	4.09	1.57
India	0	0	..	..	0.0	0.0	-54.93	0.00
Indonesia	27	31	3.71	1.64	0.1	0.1	3.05	0.97
Iran	232	263	-1.11	1.11	2.4	2.6	-2.26	0.58
Japan	438	489	1.76	1.33	3.3	4.0	2.17	1.92
Kazakhstan	69	88	6.22	2.08	3.3	3.8	5.00	1.05
Korea	194	215	4.12	1.46	3.5	3.9	3.94	1.65
Malaysia	31	35	6.32	2.44	0.8	0.9	5.07	1.55
Pakistan	1	2	-13.89	2.90	0.0	0.0	-15.27	1.24
Philippines	49	82	10.04	5.03	0.4	0.5	8.66	3.64
Saudi Arabia	253	316	3.03	1.78	6.6	7.1	1.47	0.56
Thailand	20	21	3.32	0.01	0.3	0.3	3.08	0.00
Türkiye	194	246	1.03	2.07	2.1	2.6	0.06	1.57
Viet Nam	15	16	17.19	0.43	0.1	0.1	16.54	0.00
OCEANIA	441	495	4.28	0.66	9.4	9.4	2.74	-0.39
Australia	387	432	4.41	0.58	14.1	14.2	3.08	-0.29
New Zealand	51	61	3.40	1.18	8.2	9.2	1.84	0.57
DEVELOPED COUNTRIES	19 940	21 882	1.70	0.87	13.1	14.1	1.34	0.71
DEVELOPING COUNTRIES	5 716	6 910	1.41	1.84	0.8	0.9	0.20	0.86
LEAST DEVELOPED COUNTRIES	467	608	1.25	2.67	0.5	0.5	-1.14	0.49
OECD³	19 430	21 272	1.70	0.84	13.0	13.9	1.19	0.64

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.33.1 Skim milk powder projections: Production and trade
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		IMPORTS (kt)		Growth (%) ⁴		EXPORTS (kt)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	4 640	5 399	0.58	1.83	2 554	3 172	1.45	2.10	2 691	3 172	1.89	2.10
NORTH AMERICA	1 272	1 754	1.46	3.87	5	8	-0.47	3.56	947	1 468	7.11	4.24
Canada	84	115	-1.69	3.69	3	6	-6.02	5.53	26	30	7.25	0.88
United States	1 188	1 639	1.73	3.88	2	2	11.40	0.00	921	1 438	7.13	4.32
LATIN AMERICA	294	333	-0.12	1.50	490	574	3.87	1.33	58	52	-2.69	0.62
Argentina	40	44	1.51	1.51	0	0	..	..	24	27	-0.15	2.90
Brazil	161	205	0.59	2.08	21	20	-5.36	0.00	0	0	..	..
Chile	14	12	-8.87	-1.44	8	9	-1.35	4.35	2	2	4.98	-4.16
Colombia	0	0	..	..	29	31	23.01	0.51	0	0	..	..
Mexico	46	48	0.84	0.79	341	391	3.95	1.10	11	11	-3.63	0.00
Paraguay	0	0	..	..	1	1	..	0.00	1	1	..	0.00
Peru	0	0	..	..	22	24	-0.92	2.45	0	0	..	..
EUROPE	1 821	1 852	-0.07	0.29	129	144	-6.60	0.38	960	983	1.09	0.66
European Union ¹	1 457	1 491	0.67	0.22	35	37	-4.29	0.10	752	765	1.79	0.56
United Kingdom	55	67	-6.49	1.86	24	24	-6.32	-0.32	55	67	-3.77	1.71
Russia	90	75	3.32	-1.36	57	73	-9.35	0.96	2	2	-0.03	0.00
Ukraine	52	51	-10.91	2.95	2	1	16.04	-3.14	19	21	-6.81	3.24
AFRICA	14	14	5.36	0.72	422	585	1.99	2.72	23	17	4.86	-1.88
Egypt	0	0	..	..	63	77	-2.40	3.76	0	0	..	..
Ethiopia	0	0	..	..	4	3	45.85	2.09	0	0	..	..
Nigeria	0	0	..	..	52	60	6.44	4.33	0	0	..	..
South Africa	3	3	-0.77	-1.47	13	18	8.95	0.86	9	8	4.78	-0.85
ASIA	725	942	5.69	2.74	1 483	1 838	1.49	2.31	205	173	1.53	0.79
China ²	26	39	-7.59	3.54	368	391	7.33	1.26	2	3	2.70	0.00
India	364	573	6.99	4.37	1	1	2.17	-0.37	25	0	-16.43	..
Indonesia	0	0	..	..	204	265	4.78	2.97	1	1	-7.48	-2.88
Iran	77	112	23.56	1.39	6	10	-3.57	0.00	83	121	25.36	1.27
Japan	153	147	2.45	-0.14	15	11	-14.59	-0.20	0	0	..	..
Kazakhstan	1	1	5.10	-0.35	22	26	-0.55	1.82	2	2	23.06	-1.79
Korea	31	22	-3.36	-3.16	13	20	-6.77	6.16	0	0	..	..
Malaysia	0	0	..	..	118	133	-2.50	2.23	3	4	-29.05	-2.18
Pakistan	0	0	..	..	22	40	-6.93	3.21	0	0	..	..
Philippines	0	0	..	..	170	248	4.24	4.90	1	0	..	..
Saudi Arabia	0	0	..	..	21	31	-16.44	0.91	9	9	-5.97	-0.90
Thailand	0	0	..	..	65	67	-0.49	0.02	5	4	10.67	0.27
Türkiye	61	38	16.36	1.89	4	3	28.94	0.00	37	11	0.98	6.01
Viet Nam	0	0	..	..	108	107	4.09	0.43	1	1	-7.78	0.00
OCEANIA	515	504	-3.78	0.21	24	22	10.17	0.83	497	480	-2.92	0.29
Australia	147	124	-6.60	-0.98	16	13	12.44	0.00	135	107	-4.21	-0.80
New Zealand	367	380	-2.41	0.62	3	3	6.54	0.00	362	372	-2.41	0.62
DEVELOPED COUNTRIES	3 778	4 271	-0.06	1.59	230	272	-4.34	1.08	2 419	2 941	2.05	2.22
DEVELOPING COUNTRIES	863	1 128	3.94	2.80	2 323	2 900	2.22	2.20	272	231	0.28	0.63
LEAST DEVELOPED COUNTRIES	6	7	23.17	1.48	104	153	-2.28	4.23	13	9	8.51	-2.61
OECD³	3 648	4 122	0.10	1.61	500	558	1.50	1.12	2 313	2 814	2.09	2.30

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.33.2 Skim milk powder projections: Consumption, food
Calendar year

	CONSUMPTION (kt)		Growth (%) ⁴		FOOD (kg/cap)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	4 508	5 399	0.79	1.83	0.5	0.5	-0.40	1.10
NORTH AMERICA	331	294	-7.59	2.22	0.7	0.6	-9.30	1.84
Canada	62	91	-2.46	5.03	0.8	1.4	-1.83	7.84
United States	269	203	-8.57	1.17	0.7	0.5	-10.01	0.26
LATIN AMERICA	726	855	2.67	1.44	0.8	0.9	2.52	0.60
Argentina	16	18	7.97	-0.28	0.3	0.3	7.62	-1.02
Brazil	182	224	-0.28	1.88	0.1	0.1	-4.82	-0.44
Chile	20	19	-7.65	1.23	0.9	0.9	-8.88	0.98
Colombia	29	31	23.21	0.51	0.5	0.5	21.68	0.00
Mexico	376	428	4.12	1.10	2.7	2.9	3.31	0.48
Paraguay	0	0	..	..	0.0	0.0	-51.50	0.00
Peru	22	24	-0.92	2.45	0.6	0.6	-2.35	1.52
EUROPE	989	1 014	-0.46	-0.06	1.0	1.1	-0.90	0.34
European Union ¹	740	763	1.60	-0.12	1.2	1.3	1.35	0.38
United Kingdom	24	24	-11.31	0.02	0.3	0.3	-12.29	-0.37
Russia	145	146	-3.07	-0.31	0.9	1.0	-3.08	-0.01
Ukraine	35	31	-13.04	2.64	0.8	0.8	-11.58	2.93
AFRICA	413	582	1.95	2.84	0.3	0.3	-0.66	0.58
Egypt	63	77	-2.28	3.76	0.5	0.5	-4.17	2.27
Ethiopia	4	3	45.85	2.09	0.0	0.0	41.99	0.00
Nigeria	52	60	6.45	4.34	0.2	0.2	3.54	2.05
South Africa	7	13	7.27	1.47	0.1	0.2	6.10	0.61
ASIA	2 009	2 607	2.92	2.57	0.4	0.5	1.96	2.06
China ²	392	428	5.61	1.45	0.2	0.3	5.41	1.60
India	340	574	8.90	4.38	0.2	0.4	7.89	3.56
Indonesia	203	265	4.88	2.99	0.6	0.8	4.23	2.29
Iran	0	0	-78.07	..	0.0	0.0	-79.59	0.00
Japan	174	158	0.25	-0.15	1.0	1.0	-1.83	0.49
Kazakhstan	21	25	-1.01	2.03	1.0	1.1	-2.20	1.01
Korea	44	41	-4.44	0.24	0.8	0.7	-4.72	0.42
Malaysia	114	129	1.39	2.41	3.1	3.2	0.17	1.51
Pakistan	21	40	-6.83	3.27	0.1	0.1	-8.35	1.42
Philippines	169	248	4.20	4.90	1.3	1.6	2.85	3.50
Saudi Arabia	12	22	-21.40	1.77	0.3	0.5	-22.73	0.58
Thailand	60	63	-0.63	0.01	0.8	0.8	-0.89	0.00
Türkiye	28	30	172.75	0.47	0.3	0.3	224.92	0.00
Viet Nam	107	106	4.29	0.44	1.0	0.9	3.66	0.00
OCEANIA	40	47	-9.08	-0.29	0.8	0.8	-11.12	-1.35
Australia	27	30	-12.26	-1.18	0.9	0.9	-14.78	-2.12
New Zealand	9	11	-0.76	0.66	1.7	1.9	-2.55	0.00
DEVELOPED COUNTRIES	1 594	1 602	-2.29	0.44	0.9	0.9	-3.43	0.48
DEVELOPING COUNTRIES	2 914	3 797	2.86	2.48	0.4	0.5	1.84	1.52
LEAST DEVELOPED COUNTRIES	97	151	-2.52	4.65	0.1	0.1	-4.81	2.47
OECD³	1 840	1 866	-0.78	0.52	1.1	1.1	-1.77	0.50

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.34.1 Whole milk powder projections: Production and trade
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		IMPORTS (kt)		Growth (%) ⁴		EXPORTS (kt)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	5 011	5 788	-0.72	1.56	2 791	2 645	0.57	0.43	2 653	2 645	0.43	0.43
NORTH AMERICA	73	88	15.90	1.44	14	14	-2.21	0.00	50	81	21.06	3.84
Canada	8	7	-1.53	-1.66	3	3	1.80	0.00	1	1	3.90	1.29
United States	65	81	21.50	1.74	11	11	-2.93	0.00	49	80	21.59	3.87
LATIN AMERICA	1 362	1 636	0.51	1.59	297	269	-4.14	-1.41	337	368	1.82	1.04
Argentina	188	211	-1.28	0.88	0	0	..	..	138	152	1.51	1.78
Brazil	590	748	-0.17	2.21	96	51	8.29	-6.87	6	16	-21.25	6.74
Chile	67	71	-4.26	0.58	4	4	-6.65	5.63	6	3	-10.47	-5.33
Colombia	44	45	0.43	0.01	20	28	7.04	2.93	2	2	14.05	-2.39
Mexico	232	276	1.27	1.25	31	34	-3.79	-0.75	16	10	6.42	0.00
Paraguay	11	16	422.84	2.67	0	0	-31.66	..	10	17	35.56	2.64
Peru	0	0	..	..	34	45	9.30	2.10	0	0	..	..
EUROPE	756	682	-2.14	-0.97	48	59	-9.66	1.76	338	285	-4.58	-1.23
European Union ¹	603	520	-1.94	-1.40	14	12	-11.02	0.00	256	202	-5.57	-1.90
United Kingdom	32	35	-8.65	1.02	8	5	-15.84	0.31	19	17	-12.94	0.62
Russia	57	59	-0.58	0.06	22	37	-7.74	3.08	21	21	56.83	0.00
Ukraine	7	5	-6.15	2.18	1	..	..	-0.79	3	2	5.39	0.80
AFRICA	23	24	-0.65	0.22	580	681	-0.42	2.23	17	15	-3.95	-2.20
Egypt	0	0	..	..	36	33	-9.16	2.65	3	4	-1.55	-2.58
Ethiopia	0	0	..	..	2	2	12.98	2.07	0	0	..	..
Nigeria	0	0	..	..	54	48	-5.98	2.22	..	..	..	..
South Africa	7	6	-0.82	-0.30	4	6	5.03	1.30	6	4	-4.24	-1.29
ASIA	1 246	1 807	-3.03	3.58	1 801	1 590	2.21	0.04	381	348	2.72	-0.50
China ²	1 078	1 653	-3.56	3.77	671	361	3.91	-2.32	4	8	-1.88	-0.09
India	5	7	5.33	3.16	0	0	..	..	2	4	-0.10	6.71
Indonesia	72	77	-0.85	2.35	83	99	7.58	0.75	1	0	-21.21	..
Iran	1	1	0.38	1.39	6	8	8.42	0.00	7	9	10.69	0.14
Japan	40	13	0.59	0.00	3	4	74.41	0.00	0	0	..	..
Kazakhstan	32	37	5.57	1.64	3	8	-3.13	3.86	1	1	..	-0.89
Korea	4	4	-2.47	0.00	5	6	11.40	1.04	0	0	..	..
Malaysia	0	0	..	..	47	57	3.12	1.08	23	19	2.10	-1.07
Pakistan	0	0	..	..	0	0	-25.92	..	0	0	-28.70	..
Philippines	0	0	..	..	14	12	-7.52	2.36	5	1	-15.80	-2.31
Saudi Arabia	0	0	..	..	111	134	-0.25	1.47	12	10	-5.26	-1.44
Thailand	0	0	..	..	69	69	6.03	0.02	3	1	-2.29	0.89
Türkiye	2	2	279.95	1.89	0	0	-23.82	..	1	1	-0.84	..
Viet Nam	0	0	..	..	64	59	4.89	0.31	17	17	7.94	0.00
OCEANIA	1 551	1 551	0.72	0.71	51	34	13.36	0.29	1 529	1 548	0.73	0.71
Australia	38	34	-9.52	-1.24	42	22	19.73	-0.50	38	31	-6.84	-1.23
New Zealand	1 513	1 517	1.15	0.76	3	3	3.16	0.00	1490	1517	1.00	0.76
DEVELOPED COUNTRIES	2 459	2 378	0.05	0.23	125	125	-1.70	1.12	1 923	1 919	-0.17	0.51
DEVELOPING COUNTRIES	2 552	3 410	-1.41	2.60	2 666	2 521	0.70	0.40	730	727	2.15	0.22
LEAST DEVELOPED COUNTRIES	8	9	-0.90	0.45	281	327	3.60	2.68	7	6	-5.42	-2.49
OECD³	2 664	2 620	0.02	0.31	151	139	-0.33	0.47	1 880	1 863	-0.36	0.49

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.34.2 Whole milk powder projections: Consumption, food
Calendar year

	CONSUMPTION (kt)		Growth (%) ⁴		FOOD (kg/cap)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	5 149	5 787	-0.62	1.56	0.6	0.6	-1.62	0.71
NORTH AMERICA	37	21	3.88	-5.56	0.1	0.0	2.44	-7.37
Canada	10	9	-1.11	-1.41	0.2	0.2	-2.42	-2.19
United States	27	12	6.65	-7.90	0.1	0.0	5.03	-11.07
LATIN AMERICA	1 323	1 537	-0.99	1.12	1.9	2.0	-1.88	0.47
Argentina	50	59	-6.89	-1.14	1.0	1.1	-8.09	-1.91
Brazil	680	783	1.25	1.18	3.0	3.3	0.57	0.73
Chile	65	72	-3.89	1.19	3.1	3.4	-5.15	0.92
Colombia	62	71	2.25	1.12	1.1	1.2	0.87	0.58
Mexico	246	300	0.23	1.04	1.8	2.0	-0.71	0.42
Paraguay	1	0	7.74	..	0.1	0.0	3.11	0.00
Peru	34	45	9.30	2.10	0.9	1.1	7.81	1.16
EUROPE	466	456	-1.32	-0.49	0.6	0.6	-1.44	-0.33
European Union ¹	361	330	0.67	-1.03	0.7	0.7	0.56	-0.87
United Kingdom	21	24	-8.24	1.13	0.3	0.3	-9.24	0.87
Russia	58	75	-7.22	1.42	0.4	0.5	-7.61	1.75
Ukraine	4	4	-10.37	2.48	0.1	0.1	-8.81	2.86
AFRICA	586	690	-0.31	2.27	0.4	0.3	-2.72	0.04
Egypt	33	29	-11.65	3.63	0.3	0.2	-13.48	2.21
Ethiopia	2	2	13.15	2.09	0.0	0.0	10.12	0.00
Nigeria	54	48	-5.98	2.23	0.2	0.1	-8.64	-0.02
South Africa	6	8	21.82	1.49	0.1	0.1	30.80	0.64
ASIA	2 665	3 048	-0.60	2.07	0.5	0.5	-1.34	1.50
China ²	1 745	2 006	-1.33	2.39	1.1	1.3	-1.54	2.53
India	4	4	12.72	0.73	0.0	0.0	11.93	0.00
Indonesia	155	176	3.71	1.42	0.5	0.5	3.06	0.73
Iran	0	0	..	..	0.0	0.0	-72.19	0.00
Japan	42	17	1.58	0.00	0.3	0.1	1.99	0.59
Kazakhstan	35	44	4.43	2.02	1.7	1.9	3.22	0.98
Korea	9	9	3.62	0.37	0.2	0.1	3.80	0.06
Malaysia	24	37	3.79	2.40	0.6	0.9	2.50	1.57
Pakistan			-15.24	..	0.0	0.0	-15.18	0.00
Philippines	9	11	5.41	3.10	0.1	0.1	4.46	1.80
Saudi Arabia	99	124	0.51	1.73	2.6	2.8	-1.03	0.50
Thailand	66	67	6.39	0.01	0.9	0.9	6.17	0.00
Türkiye	1	1	..	0.46	0.0	0.0	152.82	0.00
Viet Nam	47	42	3.89	0.43	0.4	0.4	3.26	0.00
OCEANIA	72	36	7.77	0.33	1.6	0.7	6.16	-0.77
Australia	41	24	6.91	-0.59	1.6	0.8	5.48	-1.45
New Zealand	25	3	10.05	1.65	4.7	0.6	8.16	0.99
DEVELOPED COUNTRIES	661	584	0.28	-0.46	0.4	0.4	-0.08	-0.62
DEVELOPING COUNTRIES	4 488	5 203	-0.75	1.81	0.6	0.7	-1.89	0.82
LEAST DEVELOPED COUNTRIES	282	329	3.75	2.73	0.3	0.3	1.38	0.56
OECD³	935	896	0.67	-0.04	0.6	0.6	0.17	-0.24

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.35 Whey powder projections: Production and trade
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		IMPORTS (kt)		Growth (%) ⁴		EXPORTS (kt)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	3 493	3 817	2.23	0.72	1 717	1 962	2.91	1.59	2 012	2 256	1.01	1.37
NORTH AMERICA	488	532	-1.09	0.86	7	7	1.47	0.87	231	257	-2.04	1.06
Canada	40	48	0.89	2.09	7	7	1.47	0.87	43	43	2.21	0.00
United States	448	484	-1.26	0.75			..	..	188	214	-2.84	1.28
LATIN AMERICA	164	193	1.03	1.38	97	143	-2.63	2.21	150	206	-2.70	2.02
Argentina	76	90	1.86	1.60	1	1	-9.64	0.00	52	62	-2.69	1.61
Brazil	0	0	..	..	14	14	-5.01	0.01	1	1	..	0.00
Chile	11	12	3.38	0.33	10	19	17.90	5.74	15	23	3.18	3.80
Colombia	0	0	..	..	8		-2.97	-48.77	8	0	-2.97	-50.63
Mexico	59	72	1.00	1.30	31	66	-7.61	3.28	31	66	-7.61	3.28
Paraguay	0	0	..	..	1	1	11.66	0.00	0	0	..	..
Peru	0	0	..	..	11	14	3.03	2.07	11	14	3.04	2.07
EUROPE	2 470	2 654	2.67	0.59	142	157	-4.86	0.89	939	997	1.23	0.69
European Union ¹	2 192	2 327	2.73	0.48	44	52	-5.81	1.27	691	702	3.01	0.35
United Kingdom	77	84	1.37	0.73	45	37	3.51	-1.94	45	41	-0.93	-1.22
Russia	1	1	0.60	0.00	30	29	-12.64	0.00	30	29	-12.64	0.00
Ukraine	23	25	-1.80	0.86	5	12	25.10	7.84	28	37	2.24	2.64
AFRICA	3	3	3.76	0.95	95	167	10.52	5.46	65	131	9.55	6.67
Egypt	0	0	..	..	26	53	7.27	6.62	26	53	7.27	6.62
Ethiopia	0	0	..	..	1	1	22.06	0.00	0	0	..	..
Nigeria	0	0	..	..	10	21	8.54	6.77	10	21	8.54	6.77
South Africa	3	3	3.77	0.95	17	21	11.13	1.90	1	0	-15.41	..
ASIA	211	268	7.23	1.42	1 349	1 459	4.29	1.28	583	620	2.62	1.60
China ²	92	109	2.44	1.12	740	845	7.32	1.30	1	1	1.72	0.00
India	2	2	9.74	0.00	13	13	7.15	0.00	0	0	..	..
Indonesia	0	0	..	..	136	163	3.04	1.49	136	163	3.04	1.49
Iran	13	14	7.85	1.12	4	8	6.63	6.30	6	10	0.55	4.34
Japan	19	19	369.78	0.00	56	58	0.19	0.00	0	0	..	..
Kazakhstan	0	0	..	..	12	21	7.36	5.14	12	21	7.36	5.14
Korea	0	0	..	..	38	39	1.75	0.00	0	0	..	..
Malaysia	0	0	..	..	95	133	3.64	3.04	95	133	3.64	3.04
Pakistan	0	0	..	..	20	8	-2.70	-8.75	20	8	-2.70	-8.75
Philippines	0	0	..	..	59	59	7.32	-0.31	59	59	7.32	-0.31
Saudi Arabia	0	0	..	..	7	8	5.87	1.67	7	8	5.88	1.67
Thailand	0	0	..	..	3	0	-30.87	..	3	0	-30.88	..
Türkiye	85	123	11.15	2.00	3	8	20.28	8.89	88	132	14.62	2.33
Viet Nam	0	0	..	..	76	0	7.92	..	76	0	7.92	..
OCEANIA	157	166	3.03	0.50	28	27	1.78	-0.14	44	45	0.56	0.46
Australia	125	129	3.25	0.34	9	9	-2.67	0.00	30	29	-1.67	0.14
New Zealand	33	38	2.26	1.09	18	18	4.62	-0.22	14	16	9.31	1.10
DEVELOPED COUNTRIES	3 138	3 375	2.10	0.63	273	319	-1.75	1.41	1 238	1 348	0.65	0.92
DEVELOPING COUNTRIES	355	442	3.45	1.47	1 444	1 643	4.04	1.62	773	908	1.62	2.06
LEAST DEVELOPED COUNTRIES	0	0	..	..	23	30	5.44	2.29	14	17	4.67	1.83
OECD³	3 112	3 360	2.20	0.61	277	324	-1.20	0.77	1 160	1 273	1.32	0.75

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.36. Fresh dairy products projections: Production and food consumption

Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		FOOD CONSUMPTION		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	481 947	586 595	2.26	1.78	58.1	64.7	1.21	0.98
NORTH AMERICA	24 834	23 773	-1.13	-0.37	64.0	57.9	-1.73	-0.89
Canada	2 690	2 653	-1.06	-0.02	68.3	61.8	-1.96	-0.79
United States	22 144	21 120	-1.13	-0.42	63.5	57.4	-1.71	-0.90
LATIN AMERICA	50 006	52 866	1.04	0.45	72.4	71.2	0.18	-0.18
Argentina	1 624	1 698	0.80	0.38	27.5	27.1	0.39	-0.11
Brazil	28 975	29 489	1.62	0.07	130.5	126.4	0.93	-0.35
Chile	517	602	3.23	1.28	25.1	28.3	1.93	0.99
Colombia	5 880	6 575	0.44	1.02	109.0	115.0	-0.94	0.46
Mexico	3 436	3 258	-0.11	-0.46	25.7	22.8	-1.12	-1.07
Paraguay	454	570	-1.31	2.67	62.9	70.1	-2.71	1.60
Peru	1 936	2 511	2.01	2.50	53.9	63.2	0.56	1.56
EUROPE	85 743	81 935	-0.22	-0.44	108.5	105.6	-0.42	-0.27
European Union ¹	40 958	39 188	0.61	-0.43	82.3	80.3	0.11	-0.24
United Kingdom	6 215	6 417	-1.13	-0.12	92.2	92.6	-1.37	-0.31
Russia	24 650	22 179	-0.51	-0.92	167.7	156.0	-0.53	-0.62
Ukraine	6 462	6 994	-1.78	0.78	156.5	180.4	-0.03	1.08
AFRICA	36 720	46 388	1.41	2.24	24.4	24.1	-1.09	0.00
Egypt	1 258	1 704	-1.07	3.29	10.6	12.2	-2.97	1.80
Ethiopia	3 962	5 467	3.45	3.07	30.2	32.4	0.68	0.75
Nigeria	226	296	0.09	2.81	0.9	0.9	-2.70	0.55
South Africa	3 060	3 425	1.39	1.10	48.5	49.0	0.27	0.18
ASIA	280 933	378 345	3.89	2.69	57.7	73.0	3.09	2.13
China ²	31 544	34 672	6.02	0.27	20.8	23.3	6.07	0.53
India	144 500	207 245	4.99	3.35	99.1	130.3	3.95	2.54
Indonesia	1 156	1 417	1.87	1.42	3.6	4.1	1.22	0.73
Iran	1932	2106	0.24	0.89	20.5	21.0	-0.91	0.37
Japan	4 595	4 419	-0.88	-0.53	35.7	36.5	-0.50	0.05
Kazakhstan	5 361	6 915	2.42	2.20	267.3	307.5	1.21	1.15
Korea	499	457	5.67	-1.75	9.3	8.4	5.84	-1.84
Malaysia	48	56	-5.05	2.10	1.3	1.4	-6.24	1.19
Pakistan	45 907	65 748	2.55	3.21	189.7	222.1	0.94	1.36
Philippines	16	20	-3.92	3.20	0.1	0.1	-5.22	1.83
Saudi Arabia	1 998	2 460	5.80	1.80	52.4	56.2	4.21	0.56
Thailand	1 073	1 222	-0.07	1.63	14.0	15.9	-0.32	1.62
Türkiye	15 222	17 421	2.16	1.39	172.6	186.7	1.18	0.89
Viet Nam	1 150	1 733	7.26	4.19	10.7	15.2	6.62	3.69
OCEANIA	3 710	3 289	1.43	-1.40	65.3	60.0	-1.16	-0.84
Australia	3 120	2 678	1.18	-1.75	101.5	95.4	-0.63	-0.64
New Zealand	581	598	2.96	0.19	40.9	37.8	-4.28	-0.90
DEVELOPED COUNTRIES	142 578	142 513	-0.05	-0.03	93.6	92.4	-0.49	-0.13
DEVELOPING COUNTRIES	339 369	444 082	3.37	2.44	50.2	59.1	2.19	1.47
LEAST DEVELOPED COUNTRIES	21 580	28 613	1.06	2.72	21.4	22.4	-1.33	0.54
OECD³	107 835	107 475	0.23	-0.06	71.8	70.5	-0.39	-0.18

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
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 current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.37. Cow milk projections: Production, inventories, yield
Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		INVENTORIES ('000 hd)		Growth (%) ⁴		YIELD (t/head)		Growth (%) ⁴	
	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33	Average 2021-23est	2033	2014-23	2024-33
WORLD	884 199	1 049 667	1.97	1.60	340 584	388 820	0.73	1.34	2.60	2.70	1.23	0.25
NORTH AMERICA	114 071	128 508	1.31	1.15	10 389	10 521	0.18	0.20	10.98	12.21	1.13	0.96
Canada	11 098	13 326	2.70	1.73	971	965	0.35	-0.05	11.42	13.81	2.34	1.79
United States	102 973	115 182	1.17	1.09	9 418	9 556	0.16	0.22	10.94	12.07	0.98	0.89
LATIN AMERICA	86 672	94 711	1.07	0.93	34 924	35 402	-1.91	0.24	2.48	2.68	3.03	0.69
Argentina	11 401	12 241	0.37	1.08	1 713	1 695	-0.48	-0.10	6.65	7.22	0.91	1.18
Brazil	36 808	40 095	1.13	0.80	15 976	15 625	-3.80	-0.19	2.30	2.56	5.56	0.99
Chile	2 251	2 464	1.31	0.73	623	597	-2.48	-0.19	3.67	4.12	4.41	1.04
Colombia	7 034	7 751	0.43	0.98	3 577	3 467	-2.59	0.01	1.97	2.23	4.94	1.03
Mexico	13 155	13 611	1.91	0.45	2 675	2 706	1.21	0.25	4.95	5.04	0.71	0.31
Paraguay	547	705	1.06	2.67	217	265	-0.27	2.23	2.53	2.68	1.50	0.50
Peru	2 238	2 823	2.37	2.30	953	1 063	1.06	1.38	2.38	2.67	1.36	1.02
EUROPE	224 238	225 751	0.51	0.02	32 748	29 819	-1.56	-0.81	6.85	7.57	2.10	0.84
European Union ¹	151 301	150 778	0.73	-0.09	19 801	17 701	-1.06	-1.08	7.61	8.47	1.76	1.00
United Kingdom	15 625	16 219	0.53	0.04	1 854	1 708	-0.21	-0.82	8.43	9.49	0.61	0.90
Russia	32 686	32 873	1.16	0.00	6 204	5 730	-2.44	-0.48	5.20	5.72	3.68	0.49
Ukraine	7 750	7 908	-4.27	0.91	1 603	1 484	-4.80	-0.03	4.73	5.31	0.61	0.97
AFRICA	38 813	47 759	1.20	2.01	62 546	74 492	-0.26	1.66	0.62	0.64	1.46	0.34
Egypt	5 131	5 788	-0.22	1.39	2 398	2 401	-4.91	0.33	2.14	2.41	4.85	1.08
Ethiopia	4 023	5 582	3.59	3.14	9 063	10 921	-3.66	2.22	0.46	0.52	7.74	1.04
Nigeria	533	631	-0.12	1.77	2 294	2 716	0.39	1.90	0.23	0.23	-0.19	-0.03
South Africa	3 810	4 197	1.37	1.07	1 014	1 041	0.70	0.57	3.77	4.04	0.76	0.58
ASIA	389 945	522 603	3.66	2.68	193 743	232 727	2.21	1.83	2.01	2.25	1.42	0.83
China ²	39 373	47 096	3.31	1.14	14 047	14 595	1.06	0.34	2.81	3.23	2.74	0.80
India	207 759	291 804	4.83	3.23	105 147	129 933	2.52	2.16	1.99	2.27	2.20	1.07
Indonesia	1 060	1 321	1.62	2.23	717	790	1.33	1.27	1.49	1.68	-0.02	1.04
Iran	7 169	8 170	0.78	1.41	1 962	2 034	0.92	0.46	3.61	4.03	0.21	0.94
Japan	7 633	7 248	0.52	-0.25	837	772	-0.51	-0.50	9.06	9.36	1.03	0.25
Kazakhstan	6 340	7 963	3.00	2.14	2 672	2 951	2.55	1.15	2.40	2.71	0.43	1.00
Korea	1 945	1 839	-1.47	-0.53	239	217	-1.00	-0.88	8.10	8.42	-0.47	0.35
Malaysia	48	56	-5.05	2.10	42	43	-6.07	1.00	1.14	1.30	1.57	1.10
Pakistan	60 189	84 522	2.72	2.93	31 971	40 176	3.29	2.04	1.91	2.12	-0.57	0.87
Philippines	16	20	-3.92	3.20	6	6	-0.49	2.08	2.80	3.23	-3.54	1.25
Saudi Arabia	2 628	3 351	3.28	2.36	212	245	-2.38	1.43	12.33	13.78	5.98	0.96
Thailand	1 147	1 309	-0.03	1.63	222	223	-0.13	0.63	5.19	5.87	0.32	1.12
Türkiye	20 404	25 746	2.56	1.92	6 681	7 536	2.46	0.91	3.09	3.43	0.18	1.01
Viet Nam	1 150	1 733	7.26	4.19	350	467	2.94	3.07	3.29	3.76	3.43	1.13
OCEANIA	30 461	30 334	-0.50	0.16	6 234	5 859	-1.11	-0.27	4.89	5.18	0.63	0.43
Australia	8 606	8 031	-1.86	-0.65	1 301	1 123	-2.98	-0.94	6.51	7.15	1.08	0.46
New Zealand	21 834	22 282	0.11	0.46	4 883	4 677	-0.56	-0.13	4.46	4.76	0.62	0.68
DEVELOPED COUNTRIES	407 721	429 497	0.79	0.49	63 261	61 030	-0.77	-0.23	6.45	7.04	1.57	0.73
DEVELOPING COUNTRIES	476 479	620 170	3.07	2.44	277 324	327 790	1.10	1.66	1.72	1.89	1.95	0.76
LEAST DEVELOPED COUNTRIES	20 570	26 873	1.51	2.72	52 023	63 920	1.21	1.98	0.40	0.42	0.30	0.72
OECD³	370 706	391 446	0.88	0.50	53 728	51 851	-0.48	-0.29	6.90	7.55	1.38	0.79

.. Not available

Note : Calendar year; except year ending 30 June for New Zealand and Australia. Average 2021-23est: Data for 2023 are estimated.

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3. Excludes Iceland and Costa Rica but includes all current European Union member countries.
4. Least-squares growth rate (see glossary).

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

Table C.38. Main policy assumptions for dairy markets
Calendar year

		Average 2021-23est	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CANADA												
Milk target price ²	CADc/litre	84.5	95.0	97.1	99.1	101.3	103.5	105.7	108.1	110.4	112.7	115.2
Butter support price	CAD/t	9 379.8	10 423.4	10 752.8	11 091.2	11 440.3	11 782.1	12 128.7	12 503.7	12 874.2	13 260.2	13 650.2
Cheese tariff-quota	kt pw	50.4	57.1	58.4	59.1	59.7	60.4	61.0	61.7	62.1	62.5	62.6
In-quota tariff	%	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Out-of-quota tariff	%	245.6	245.6	245.6	245.6	245.6	245.6	245.6	245.6	245.6	245.6	245.6
EUROPEAN UNION												
Voluntary coupled support												
Milk and milk products ³	mIn EUR	752.9	829.8	835.0	838.4	824.3	824.3	824.3	824.3	824.3	824.3	824.3
Butter reference price ⁴	EUR/t	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5	2 217.5
SMP reference price	EUR/t	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0	1 400.0
Butter tariff-quotas	kt pw	63.6	63.7	63.7	63.8	63.8	63.9	63.9	64.0	64.0	64.1	64.1
Cheese tariff-quotas	kt pw	104.3	105.0	105.3	105.6	106.0	106.3	106.6	106.9	107.0	107.1	107.2
JAPAN												
Direct payments ⁵	JPY/kg	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Cheese tariff ⁶	%	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
Tariff-quotas												
Butter	kt pw	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
In-quota tariff	%	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Out-of-quota tariff	%	205.6	189.6	186.2	192.6	196.0	199.0	201.1	205.0	209.2	213.2	217.8
SMP	kt pw	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2
In-quota tariff	%	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Out-of-quota tariff	%	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0
MEXICO												
Butter tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tariff-quotas												
Cheese	kt pw	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
In-quota tariff	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Out-of-quota tariff	%	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
SMP	kt pw	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
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	%	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Licons social program	mIn MXN	1 271.6	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0	1 287.0
RUSSIA												
Butter tariff	%	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Cheese tariff	%	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
UNITED STATES⁷												
Butter tariff-quota	kt pw	8.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
In-quota tariff	%	2.4	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.3
Out-of-quota tariff	%	29.5	32.5	32.2	31.9	31.6	31.3	30.9	30.5	30.1	29.7	29.3
Cheese tariff-quota	kt pw	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
In-quota tariff	%	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Out-of-quota tariff	%	31.8	34.2	34.0	33.8	33.4	32.9	32.4	31.9	31.4	31.0	30.5
INDIA												
Butter tariff	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Cheese tariff	%	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Skim milk powder tariff	%	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Whole milk powder tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH AFRICA												
Butter tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cheese tariff	%	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9
Skim milk powder tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whole milk powder tariff	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note : Average 2021-23est: Data for 2023 are estimated.

1. Refers to all current European Union member countries.
2. For manufacturing milk.
3. Implemented in 19 Member States. The maximum quantity limit is 11.695 million dairy cow heads.
4. Buying-in when market prices go below the reference price for SMP and 90% of the reference price for butter is operable automatically for a maximum quantity of 109 000 tonnes for SMP and 50 000 tonnes for butter.
5. In April 2017, in addition to skim milk powder, butter and cheese, milk used for fresh cream, concentrated skim milk and concentrated whole milk production became covered by the direct payments.
6. Excludes processed cheese.
7. A milk margin (all-milk price minus the average feed margin) protection program applies, which has been updated February 2018, and provides a dairy safety net to farmers. Farmers have to decide on enrolment and coverage levels.

Source : OECD/FAO (2024), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en