INSIDER Dairy & Dairy Products October 2022

Shifting preference towards dairy products for protein enrichment



RIÓN MERGERS AND ACQUISITIONS









Global demand for dairy continues to increase in large part due to population growth, rising incomes, urbanization, and the westernization of diets. Rising disposable income, shifting consumer preferences, rising consumption of milk in households, and rising consumer awareness regarding the health benefits associated with the consumption of dairy products are driving the growth of the dairy products market globally.

Our Food and Beverage Team provides extensive dairy industry expertise and close relationships with buyers and sellers, within both local and global markets. Many of our dairy-related advisory transactions are cross-border.

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Introduction



Dairy Industry Overview

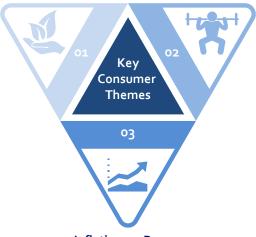
The long-term outlook on the global dairy industry remains positive with expected growth driven by population growth, rising incomes, urbanization, and westernization of diets in countries such as China and India.

However, in the near term, the dairy industry is experiencing significant uncertainty. Even before the Russia–Ukraine conflict, global dairy commodity prices were soaring due to a supply shortfall. Major export regions have been grappling with poor weather or margin erosion, resulting in a year-on-year deficit that was much worse than anticipated in the second half of 2021. The seven biggest dairy-producing regions, including the US, EU, New Zealand, Australia, Brazil, Argentina, and Uruguay, have seen record-high feed costs and weather-related issues directly impacting the profitability of dairy farmers. Global herds have contracted or are facing barriers to growth, making it harder for milk output to rebound after the current slump. If weakening commodity prices translate into lower farmgate prices in the coming quarters, it may result in a slower recovery.

Against this backdrop, several key themes are driving headwinds and tailwinds for the industry:

Commitment to Sustainability

- ✓ The dairy industry was responsible for 3.4% of the world's greenhouse gas (GHG) emissions in 2021, almost twice as much as the aviation industry.
- ✓ The industry must continue investing in areas such as responsible waste disposal, water, energy management, recyclable packaging, and renewable energy.
- ✓ It is also important that dairy leaders support farmers in adopting green practices, wherever possible.



Inflationary Pressures

Health and Wellness

- ✓ Health and wellness remain key drivers for choosing dairy alternatives, with most consumers demanding "less fat" and "no artificial ingredients" as important characteristics.
- Leaders continue strengthening the narrative of dairy's many attributes.
- Product innovation can help position dairy as a formidable competitor to non-dairy alternatives, highlighting the benefit from natural protein, nutrients, and vitamins.

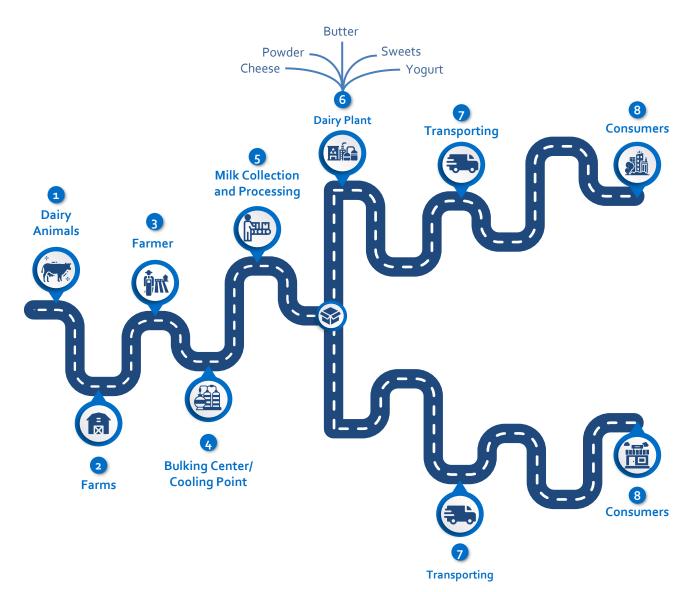
Inflationary pressures are expected to trigger lower demand in rich and poor countries, as consumers are being hit by a global inflation wave that has not been seen since the 1970s. While consumers from developed countries are usually more resilient to higher prices, the impact on energy and fuel prices is severe and has resulted in a change in consumer behavior.

The dairy industry continues to face increasing inflationary pressure due to three main factors:

- ✓ **Labor Shortages**: The labor market is undergoing the highest supply-and-demand pressures since the Great Recession. Job openings are at a record high, 41.0% above pre-pandemic rates. Dairy manufacturing and processing plants are operating, on average, with 11.0% of their target labor force unfilled. This, coupled with high employee attrition and high competition for hiring, is resulting in increased wage costs.
- ✓ Freight Challenges: The past few years marked a major reconfiguration of the freight landscape, with ocean and land-freight prices increasing in 2021 by up to 400.0% and 25.0%, respectively across industries. This results in longer lead times and skyrocketing prices for simple, necessary goods.
- ✓ **Input-Cost Escalation**: Some of the major consequences of labor and freight disruptions have been limited supply, stalled distribution, and cost elevation of hard and soft commodities, ranging from feed and chemicals to packaging materials and energy.

Source(s): FAO Website and Web Research





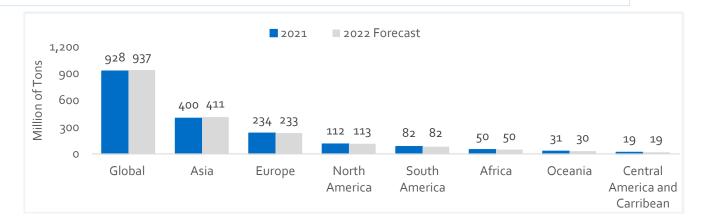
1	Dairy Animals	The supply chain starts with animals producing milk through their natural processes
2	Farms	Milk is collected from dairy animals either manually or by automated technologies via pipes
3	Farmer	Milk is transported to cooling storage tanks
4	Bulking Center/ Cooling Point	Milk remains in the storage tanks, where it is kept at below 40° F for no more than 48 hours
5	Milk Collection and Processing	Milk collected from all the cooperative societies is tested to ensure it has been properly chilled and is free of bacteria. At the processor, milk is homogenized, pasteurized, and packaged
6	Dairy Plant	Milk is further processed into products such as cheese, butter, yogurt, and milk powder, among others
7	Transporting	Milk and milk products are collected from the milk collector and dairy plants, respectively, and transported to retailers in refrigerated trucks
8	Consumers	Milk and milk products are utilized as nutritious food

Source(s): Web Research

II. Dairy Macro Overview



World Milk Production



Global



- Rising by 1.0% YoY, global milk production is forecasted to reach 937.0 million tons in 2022, indicating a slowdown in growth relative to the 1.3% growth in 2021.
- The optimization of milk production systems, improved feeding efficiency, animal health, and genetics are thought to be the main drivers of production growth and increased yield between now and 2030.
- Lower dairy cattle numbers, higher input costs leading to reduced producer margins, environmental regulations, and labor shortages have contributed to a contraction of milk production in recent years.

Europe



- Milk output is forecasted to decline by 0.5% in 2022, to 232.6 million tons following a 0.4% decline in 2021.
- Farming infrastructure damages and disruptions to the milk processing chain due to the Russia–Ukraine war are expected to reduce output by 15.0% in Ukraine
- Shrinking dairy herd and rising costs could reduce output in the UK by ~1.0%.
- However, these are likely to be compensated by expansions elsewhere in the region. Output in the EU is likely to remain stable with anticipated yield increases despite reduced producer margins and falling dairy herd numbers.

Asia



- Majority of the 3.0% expansion in 2022 will be driven by India and China.
- Increase in dairy herd numbers, moderate yield gain, and efficient milk collection by cooperatives can be attributed to India's 3.2% 2022 growth forecast.
- China's launch of the national dairy revitalization strategy in 2018 along with rising efficiencies in its dairy value chain are expected to continue its growth momentum with a 5.5% expansion in 2022.

Source(s): Research and Markets, Cargill – Beverage Industry Outlook



North America



- In 2022, milk output is forecasted to increase by 0.3% to 112.7 million tons.
- Declining producer margins have led to a rise in dairy cattle slaughter in the US since July 2021.
 - This contraction is expected to be compensated by yield improvements with likely marginal growth of 0.2% up to a production level of 102.8 million tons in 2022.
- An increase in milk prices announced in November 2021 under Canada's Supply Management System could compensate for rising input costs and drive production.

Central America and Caribbean



- Milk output in the combined region is likely to increase by 1.6% in 2022
- Countries such as El Salvador and the Dominican Republic, however, face reduced output due to deteriorated pasture and fodder availability owing to dry weather conditions.

South America



- Rising feed, fertilizer, and fuel costs along with heat waves in late 2021 and early 2022 are expected to contribute to steep output declines in Colombia, Brazil, and Argentina.
- Moderated by likely expansions in Uruguay and Peru, production is forecasted to reduce by 1.0% to 81.5 million tons in 2022.

Africa



- Niger, parts of Ethiopia, Somalia, and Kenya are facing fodder shortages along with erratic rainfall or droughts in Morroco, Sudan, and Uganda, and conflicts in sub-Saharan Africa are likely to limit production growth in the region
- Increased fodder availability and coarse grain harvests are likely to spur milk output growth in Algeria, Egypt, and South Africa, allowing Africa's overall milk output to remain largely stable at around 49.7 million tons in 2022.
- In the long term, larger herd numbers are expected to drive strong production growth in the region with Africa projected to account for about a third of the worldwide herd population and a little over 5.0% of world milk production.

Oceania

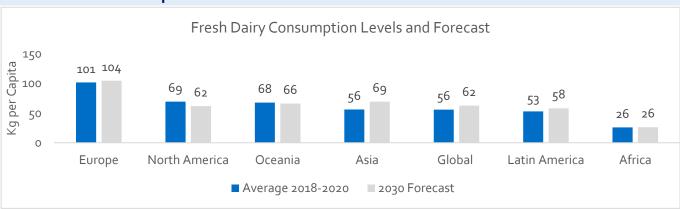


- Milk production output in Australia in recent years has been constrained due to labor shortages and shrinking dairy herd.
 - However, easing travel restrictions, strong milk prices, and further improvements in feed and water availability could provide relief.
- In addition to rising input costs in New Zealand, the country's freshwater environmental protection regulations are expected to contribute to a long-term downward trend in dairy cattle numbers.
 - Oceania's milk production in 2022 is expected to fall by around 1.5% to 30.5 million tons.

Source(s): Research and Markets, Cargill – Beverage Industry Outlook



World Milk Consumption



Highlights

- Global milk consumption per capita is set to grow at 1.2% p.a. until 2030. Consumption levels are expected to vary largely based on a country's per capita income growth, regional differences, and population growth. Countries like India and Pakistan are expected to sustain strong income and population growth to meet milk consumption demand.
- Milk consumption per capita in Europe and North America is projected to remain stable. Consumption preferences in developed nations tend towards the consumption of processed dairy products (butter, cheese, skim, and whole powder), as these products are closely related to income development and levels of urbanization.
- Consumption is expected to grow significantly in countries like Ethiopia where fresh dairy accounts for 99.0% of dairy consumption compared to the lower levels in East Asian countries where the majority of the population is lactose intolerant.

Key Trends



Demographic Shifts

- Population changes, especially in the US, are expected to drive milk consumption levels which have already been in a downward trend over the last several decades (2.6% decline in the 2010's).
- The share of the population for the under 10 and 10–19 age groups has declined 1.0% and 1.2%, respectively, between 2010 and 2019.
- It has also been found that Non-Hispanic Caucasians consume more milk than other racial groups, with children and teenagers consuming more than the adults.
- With the US population more ethnically diverse and older than ever, a declining share of the higher milk-consuming age and racial groups contribute to falling milk consumption levels in the country.



Consumer Preferences

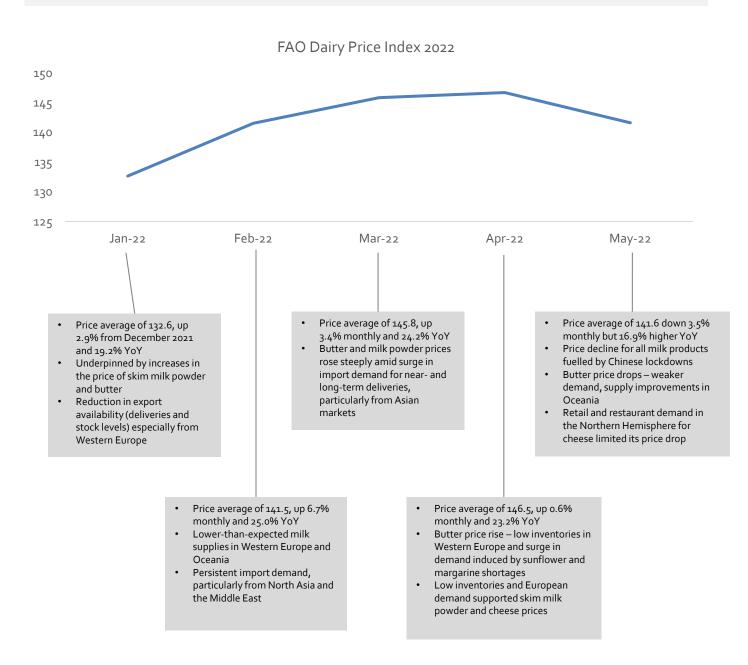
- A growing interest in vegan diets (i.e. milk alternatives) and growing environmental concerns are expected to negatively affect milk purchases.
- Competing product offerings continue to diversify beyond soy, almond, and coconut alternatives into oat, rice, and hemp-based milk drinks along with nut-based drinks (hazelnut, macadamia, and cashew).
 - The growth of these substitutes is particularly expected in regions like East Asia, Europe, and the US where individuals are increasingly looking for lactose-free, vegan, and sustainable alternatives to dairy products.
- Declining consumption of breakfast cereals, a complementary product to milk, especially among children, is also a contributing factor to declining milk consumption in the US.
- In 2017–18, the per capita daily milk consumption fell 35.0% for children, 19.0% among teenagers, and 20.0% among adults.
- Increased alternatives in breakfast bars, yogurt, and fast-food breakfast meal options have negatively affected cereal and therefore, milk sales, where cereal manufacturers have launched 'on-the-go' products that can be consumed without milk.



FAO Dairy Price Index



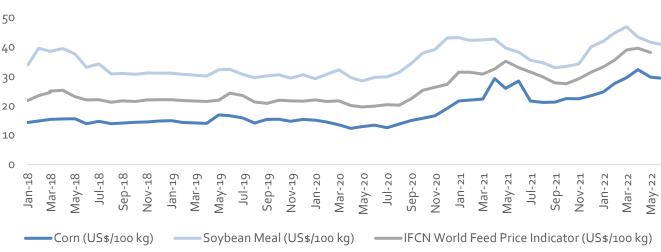
The FAO Dairy Price Index consists of price quotations of four dairy products – butter, skim milk powder, whole milk powder, and cheese – weighted by world average export trade shares in 2014–2016.



Source(s): Research and Markets, Cargill – Beverage Industry Outlook







• The International Farm Comparison Network (IFCN) develops a World Feed Price Indicator based on the prices of the two major constituents of cattle dairy feed, soybean meal, and corn, representative of their share in a simplified compound feed ration.

Europe



- Europe is the fourth-largest producer and exporter of corn, however, the damage to Ukraine's infrastructure due to the war is expected to affect the prices of corn.
 - USDA⁽¹⁾ initially forecasted production at 19.5 million tonnes for 2022–23, a 53.0% decline from supply in 2021–22. This was revised higher in June 2022 for the year 2022–23 to 25.0 million tonnes based on larger-than-expected areas for corn data.
 - Farmers possibly held on to essential inputs before the invasion and went ahead with corn planting discounting factors like shortage of diesel and limitations to exporting grain out of the country.
- Russia's invasion has stressed EU markets with increases in prices, demand contraction, and intra EU trade (40.0% of EU grain imports met by Ukraine).
- A similar theme to the US can be seen playing out in the EU
 - For 2022–23, the EU corn area and production are expected to decrease by 0.2 million hectares facing competition from soybean due to its price attractiveness and lower input needs. This decline is pronounced in Romania, France, Hungary, Italy, and Bulgaria.
- EU corn production for 2022–23 is estimated to decline by 2.8%.
- Soybean meal production is estimated to be around 12.7 million tonnes for 2022–23, up 1.3%.

Asia



- The demand for soybean from China plays a significant role in prices of soybean meal, because it is the largest producer globally.
 - A 7.8% decline in yearly demand during 2021–22 was linked to falling hog inventories and was reflected in soybean meal production decline of 4.3%.
- Soybean crushing forecasts for 2022 were cut by 9.0% in India linked to an estimated 75.0% YoY rise in meal imports up to May 31, 2022.
 - Overall, the crushing of beans was down 29.0% YoY (May 31, 2022).



South America



- Brazil is the second-largest exporter of corn behind the US and a leading soybean producer and exporter.
 - The country's corn supplies stem from its second crop planted over February May and harvested over June – July, accounting for over three quarters of the full year output.
 - The corn production is estimated at around 125.5 million tonnes in 2022, which is expected to be heavily tested given recent unfavorable weather conditions.
 - Mato Grosso, a top Brazilian corn producing region, experienced its driest April in 17 years.
 - An increase in the crop planting area for a second corn in 2021–22 is expected to offset losses, while expected frosts in some regions were weaker than expected and no significant damage to crops was seen.
 - This is reflected in increased corn export estimates for 2022-23, at a record 44.5 million tonnes, more than double the exports in 2020–21.
 - Soybean meal production levels and stocks are expected to remain largely stable with a slight fall in exports (1.7%) over the next year, attributed to higher domestic crush demand.
- Argentina accounted for second largest exports of corn in 2020-21 at 40.9 million metric tons
 - Projected to produce 39 million tonnes of corn for 2021–22, a slight decrease from previous year estimates.
 - The halt in the recent export sales is linked to the 2021–22 crops and export tax hikes are likely to put an upward pressure on soybean meal prices.

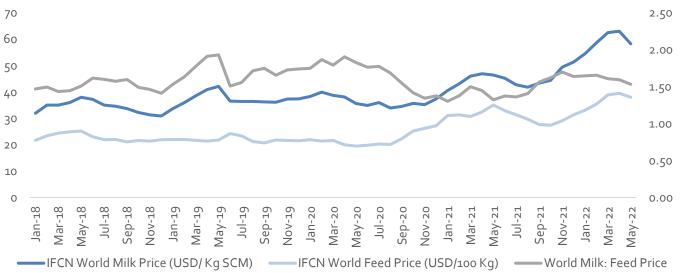
North America



- A supply-driven spike in energy prices in Europe and China, especially natural gas –
 which fertilizer production heavily relies on has pushed prices of nitrogen-based
 fertilizers to record levels.
- This is expected to negatively affect prices and output for corn in the US, given the crop's fertilizer intensive nature and US's position as a top fertilizer importer
 - Fertilizer costs account for 40% of operating costs for US corn farmers. Prices are
 expected to drive planting decisions in favour of soybeans (which naturally
 nitrogenate the soil) by farmers. Soybean inputs in the crushing process have a
 trickle-down effect on soybean meal output derived from this.
 - Corn in the US is expected to be planted in fewer acres than soybeans during 2022–23, which is only the third time where soybean acreage has been higher than that of corn.
 - Fertilizer, feed, and drying costs for soybeans are also forecasted to be \$226/acre cheaper than that of corn.
- Going forward, planting decisions coupled with supply-side statistics are expected to drive bullish and bearish outlooks for US corn and soybean meals, respectively.
 - Corn yield forecasts remain unchanged for years 2021–22 to 2022–23 at 177 bushels/acre; production in the US is likely to fall 4.3% YoY for 2022–23 to 14.5 billion bushels.
 - Soybean meal ending stocks for the year 2022–23 are expected to grow 25.0% YoY (500 thousand short tons) while production growth for the same year is expected to be around 2.3% (53.0 million short tons).

Milk to Feed Price





- Feed prices are the single largest expense in the milk production process. Higher prices leave farmers with a smaller profit margin on their milk sales.
 - In Europe and parts of the Black Sea region, adverse weather conditions in 2021–22 coupled with stronger than expected demand from China in that year, have raised feed costs dramatically.
- The cost of milk production, which considers feed costs, is the most important factor while considering farm profitability. Two groups of region with high and low costs of milk production can be identified:
 - 1. Low-cost regions include Africa, Asia, Oceania, South America, and Central and Eastern Europe
 - 2. High-cost regions include Western Europe, North America, and the Middle East
- IFCN World Milk Price Indicator illustrates the world market price level for milk. It represents the price a milk processor could theoretically pay to its farmers if it was selling its products on the world spot market and producing at standardized costs.
- It is based on the weighted average of three IFCN world milk price indicators: SMP & butter (~32.0%), cheese & whey (~51.0%), and whole milk powder (~17.0%), based on quarterly updated shares of the related commodities traded on the world market.

III. Top Selling Finished Products



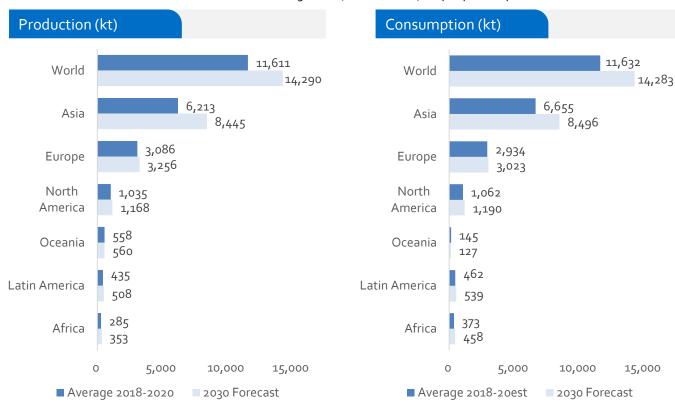
Butter



Market Size \$17.8 billion (2022E)

Market Overview and Outlook

- ✓ Global butter trade is forecasted to increase marginally in 2022 to 1.0 million tons, driven primarily by anticipated higher exports from New Zealand, Turkey, India, and Saudi Arabia, and offset by lower exports from Ukraine, the US, and the UK.
- ✓ Butter exports from Ukraine may fall by nearly 50.0%, impacted heavily by the ongoing Russia–Ukraine war.
- ✓ At the same time, shipments from the US and the UK could fall significantly, mainly due to limited milk production growth as well as likely increases in internal demand.
- ✓ Taking advantage of the tight supply situation and the sudden stop to exports from Ukraine, some countries with the capacity to increase production within short notice and having stocks, such as India, may expand exports in 2022.



Principal Exporting Countries

Thousand tons (product weight)

	Average 2018–20	2021	2022 Forecast	Change in 2022 over 2021
World	989	1,019	1,021	0.2
New Zealand	449	398	408	2.4
European Union*	228	262	263	0.1
Belarus	84	87	88	0.4
United States	36	58	55	(5.0)
United Kingdom	-	52	50	(4.2)

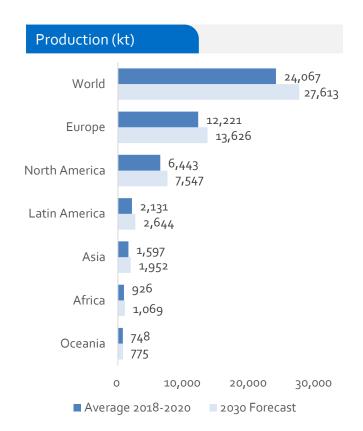
^{* -} From 2020 EU 27 | Source(s): FAO Website and Web Research

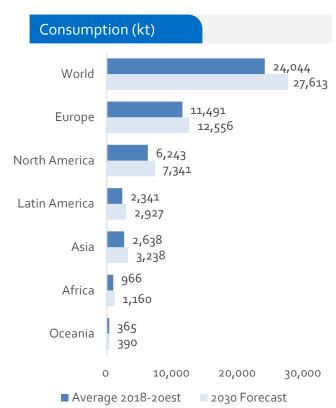




Market Size \$82.5 billion (2022E)

- ✓ World cheese exports in 2022 are forecasted at 3.6 million tons, up by 1.0% from 2021, driven by expected larger imports by the UK, Mexico, Saudi Arabia, the Republic of Korea, El Salvador, Canada, and the US.
 - These increases are likely to be largely offset by significant import curtailments by the Russian Federation, Australia, the Philippines, China, Chile, and Japan.
- Notwithstanding constrained milk production, the European Union the world's largest cheese exporter is forecasted to increase due to rising global demand.
- ✓ The UK is heading towards a partial recovery in cheese imports, mainly from the European Union, mirroring the likely relaxation of customs control.





Principal Exporting Countries

Thousand tons (product weight)

	Average 2018–20	2021	2022 Forecast	Change in 2022 over 2021
World	2,918	3,525	3,561	1.0
European Union*	1,038	1,385	1,413	2.0
United States	356	407	421	3.4
New Zealand	328	358	352	(1.5)
Belarus	243	298	299	0.3
United Kingdom	-	154	164	6.7

^{* -} From 2020 EU 27 | Source(s): FAO Website and Web Research

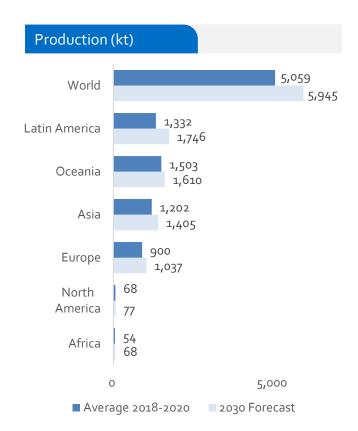
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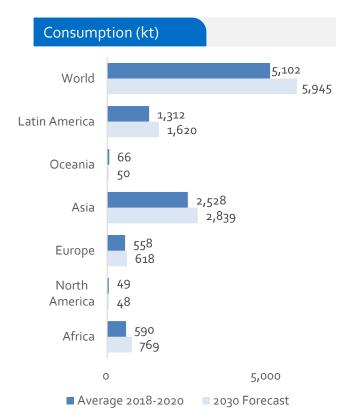




Market Size \$11.2 billion (2022E)

- ✓ Global trade in WMP is forecasted at 2.6 million tons in 2022, down by 4.9% from 2021.
- ✓ The trade is facing a downturn due to the steep import curtailments by Sri Lanka, Nigeria, and Brazil, caused by slower growth than anticipated in the food services sector amid economic growth slowdowns, while inflationary pressure remains, eroding the purchasing power of consumers.
- ✓ By contrast, China, Indonesia, and Saudi Arabia, among others, are likely to purchase more.
- ✓ The world's largest WMP importer, China, is predicted to buy nearly 2.0% more in 2022, lifting its total volume to 944,000 tons, or 35.0% of global imports.





Principal Exporting Countries

Thousand tons (product weight)

	Average 2018–20	2021	2022 Forecast	Change in 2022 over 2021
World	2,650	² ,757	2,623	(4.9)
New Zealand	1,479	1,617	1,501	(7.2)
European Union*	326	298	283	(5.0)
Argentina	127	145	148	2.2
Uruguay	137	143	141	(1.2)

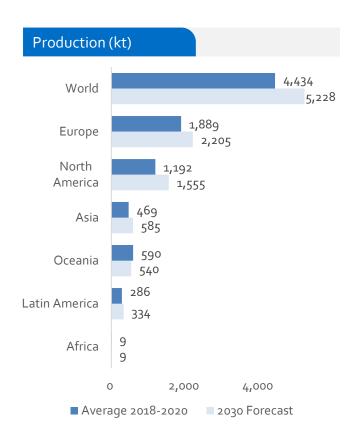
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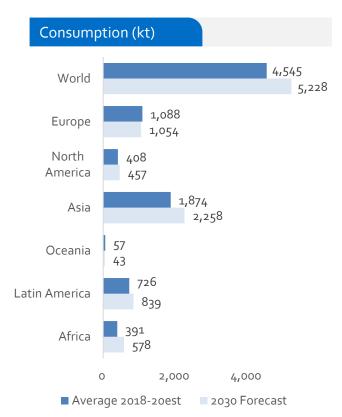




Market Size \$12.0 billion (2022E)

- The global skim milk powder market trade in 2022 is forecasted at 2.7 million tons, up 2.1% from 2021, resulting from a possible increase in purchases by Asia.
- ✓ Asia, Indonesia, Thailand, and the Philippines are likely going to increase imports to meet rising consumer demand, which should counterbalance anticipated decreases in China, Vietnam, Yemen, Bangladesh, and the Russian Federation, among others.
- In China, imports are expected to decrease in 2022 by 3.3%, reflecting an ample supply availability from the past year and a slowdown in domestic demand due to higher import prices.
 - Despite the import drop, China remains the largest skim milk powder importer.





Principal Exporting Countries

Thousand tons (product weight)

	Average 2018–20	2021	2022 Forecast	Change in 2022 over 2021
World	2,572	2,673	2,730	2.1
United States	745	894	864	(3.3)
European Union*	870	788	812	3.0
New Zealand	362	326	351	7.7
Australia	137	156	144	(8.0)

^{* -} From 2020 EU 27 | Source(s): FAO Website and Web Research

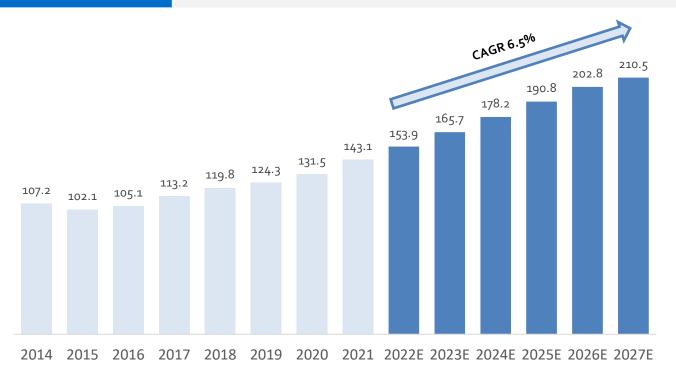




Market Size \$153.9 billion (2022E)

- Revenue in the yogurt segment amounts to \$153.9 billion in 2022 and the market is expected to grow annually by 6.5% CAGR (2022-2027).
- ✓ The worldwide yogurt industry is primarily fueled by the health advantages of yogurt consumption and an increase in public awareness about the importance of reducing weight.
- ✓ In global comparison, the majority of revenue is generated in China (\$38.3 billion in 2022).
 - China's large population and rising demand for various flavors of yogurt are prompting leading firms to improve their product offerings, which is expected to fuel the yogurt market's expansion in China.

Revenue (in billions of \$)



Principal Exporting Countries	(in millions of \$)
	2021
Germany	668.o
France	276.0
Greece	233.0
Austria	128.0
Spain	127.0

Principal Importing countries	(in millions of \$)
	2021
United Kingdom	302.0
Italy	269.0
Netherlands	168.0
Spain	163.0
Portugal	143.0

* - From 2020 EU 27 | Source(s): FAO Website and Web Research

IV. Current Trends and Dynamics



What's Ahead For the Dairy Industry



Growing Demand for Organic Products

- Consumers increasingly care about the methods behind food and beverage production, and there is a behavioral shift towards preferring organic over conventional food.
- The US organic food market soared by 12.4% to \$61.9 billion in 2021.
- The UK farmer-owned cooperative Arla Foods aims to grow its organic offering to 50.0% of its dairy business by 2026.



A2 Milk Opens an Entirely New Dairy Market

- A2 milk products, which contain less A1 proteins that cause intolerance in many adults, are the future when it comes to non-lactose-related milk intolerance.
- Studies show that A1 can trigger many illnesses or intolerances, while A2 milk is generally better for overall health.
- The growing trend towards organic A2 dairy ingredients will continue to open new markets as more consumers are trying to avoid A1 beta-casein protein in 2022 and further.



Goat Milk Thrives

- The goat milk market is also set to continue its growth, marked by recent boosts in yields and longer lactation lengths due to specialized breeding, with the global market projected to grow at a CAGR of 3.0% by 2027, to be worth \$17.4 billion.
- North America holds the largest share of the global goat milk market, driven by an ever-increasing consumer interest in health and the associated health benefits of goat milk, such as its ability to help reduce cholesterol levels.



Sustainability - Emerging as a Universal Trend

- Sustainability is a trend that is shaping almost every sector and the dairy industry is no different, with the ethical treatment of animals and the plastic waste being some of the most relevant and common concerns.
- Per a survey by McKinsey, about 55.0% of US dairy consumers said they might consider purchasing more dairy products from a company that has made environmental sustainability part of its mission.



Healthier Snacks and High Protein Dairy

- The dairy industry has far more to offer than just milk for a milk consumer. In its use
 as an ingredient, the changing market trends of the entire food and beverage
 market have a huge effect on the dairy industry.
- The dairy industry is expected to be shaped by the world's growing appetite for healthier snacks soon.
- As per a survey by McKinsey, about 53.0% of US dairy executives consider health and wellness-conscious products as an investment opportunity.

Source(s): Web Research

Strategies by Leading Companies



Danone







- 'Essential Dairy and Plant-Based Products' guided by research and innovation models to adapt to changing consumer choices
- Expanded products for nutritional benefit in the UK, US, Mexico, and Europe (like yogurts with zero-added-sugar and grains and fruit)
- Offers innovative packaging and new retail channels to sustain on-the-go consumption habits brought on by urbanization
- Acquisition of WhiteWave in 2017 expanded its product offerings to plant-based drinks (Alpro), nut, and soy milk ranges (Silk)
- Acquired Dumex, manufacturer of infant milk formula in China (May 2022)

Fonterra









- Focus on New Zealand milk, sustainability, and dairy innovation
- Invested in manufacturing sites to ensure growth in 'food services', continued momentum in 'Consumer' and moved towards high value speciality products in their 'Ingredients' channel
- Extending health and well-being offerings to provide dairy based nutrition that addresses cognition, immunity, and stress solutions
- Intends to invest \$1 billion in sustainability initiatives in the next decade
- Ownership structure re-evaluation of Australia and Chile businesses
 - Considering IPO for Fonterra Australia with the Co-op intending to retain a significant stake given its reliance on New Zealand milk
 - In the process of divesting its Chilean business due to its standalone nature which does not require New Zealand-sourced milk or expertise

Saputo





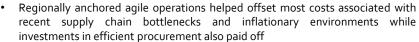
- \$169 million deployment in USA to optimize cheese manufacturing facilities and outsourcing certain distribution activities in UK
- Accelerating product innovation by pushing into dairy alternatives
- Acquisition of the Reedsburg facility of Wisconsin Speciality Protein further accelerated the move up the value chain with ingredients like goat, whey, protein concentrate, and organic lactose
- UK acquisitions of Bute Island Foods (May 2021) and Wensleydale Dairy Products (July 2021) extended its cheese offerings
- Carolina Aseptic and Carolina Dairy acquisitions extended its manufacturing presence in the rapidly growing categories (September 2021)

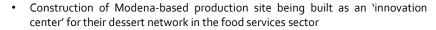
Emmi AG





Employs a strategy focused on strong brand concepts, diversified portfolio, innovations, and targeted acquisitions





Acquired Chäs Hütte Zollikon GmbH (July 2020), Indulge Desserts Group, USA (October 2020), and Athenos (December 2021)



Morinaga Milk





- Recent strategic initiatives include expansion of functional ingredients with healthpromoting benefits such as bifidobacteria and growth of high value-added products that use these ingredients (yogurts and ice cream)
- To achieve sustainable growth, it seeks to advance on a foundation of the 'Core Dairy Foods' business and 'B-to-B' business
- Expanding the 'Nutrition and Healthcare Foods' business will leverage its core strengths in ingredients, technologies, and R&D capabilities
- Acquired 51.0% stake in Elovi Vietnam

Strategies by Leading Companies



Arla Foods





- Strategic aspirations of value creation will be supported by leveraging scale, collaboration, and digital platforms
- Scaling the company by furthering brand loyalty, investing in strategic partnerships, and exploring traditional as well as new sales channels
- Accelerating food services (Arla Pro brand), e-commerce partnerships, and agile operating models leveraging data to further achieve goals
- Carbon reduction goals, supply chain energy optimization, and circular packaging lead their sustainable dairy practices

Mengniu Corporation





- The group will continue to promote product innovation to meet consumption upgrades in the coming years
- Digital transformations across sales, supply, channel, and internal management are pivotal to its strategic objectives
- 'Smart Network' system equips its business to reach target consumers and improve internal efficiency through digital intelligence
- Its sales channel strategies include traditional e-commerce, online-to-offline home delivery, and community group marketing
- In March 2021, the group acquired AICE leading ice cream brand in the southeast Asian market
- Increased stake in Tianxianpei, which is engaged in the sale of dairy products in mainland China to 100.0% up from 50.0% (September 2021)
- Bellamy's, an Australian organic infant milk formula provider, was acquired in November 2019

Friesland Campina







- Focused on organic growth, the group aims to lower its cost basis while implementing price increases
- Primarily focused on better nutrition and sustainable production and packaging, it plans to invest more than \$100 million in R&D
- Investment also expected towards marketing nutrition brands
- Optimizing production network is a key agenda with investments in new plants in Indonesia and Malaysia
- Planned expansion of distribution networks in Asia and Africa

DMK Group







- Under the MILRAM brand, the group is leveraging the popularity of non-dairy alternatives by launching vegan products
- Sustainability is part of all levels of business operations and the company aims to reduce greenhouse gas emissions per kilo of milk by 20.0% by 2030
- 'myMilk' online platform and the 'Milkmaster' program support farmers towards sustainable processes
- Energy management initiatives are set to save around 42,000 tons of CO₂ by 2030
- The group reduced its holdings in Fude + Serrahn, a Hamburg-based dairy production and trading company, from 51.0% to 10.0%

Yili Group





AMRPOSIA

- During the year, the company deepened its omnichannel capabilities through the support of digital systems
- Innovation ability enhancements were evident in the 30.0% increase for the year in patent authorizations (582 patents home and abroad)
- Acquired 34.3% of Ausnutria Dairy for HK\$ 6.25 billion. Ausnutria is engaged in the R&D, production, marketing, distribution of dairy products worldwide

Tech Innovations in the Dairy Industry



Digital Monitoring Technology



Relies on various types of sensors attached either to the cow or to part of the milking line to collect countless data points regarding the herd's health, fertility, nutrition, and location and alert the farmers in real-time

Helps identify the quantity of milk a cow produces, when she will give birth, and how frequently she exhibits signs

- of illness Digital monitoring helps farmers in differentiating their most efficient animals from the lower performers thereby
- increasing the overall efficiency

afimilk

Afimilk offers a banquet of technologies for dairy farms from cow monitoring solutions to in-line milk analyzers to herd management tools

Cainthus Cainthus is focused on using computer vision and predictive imaging analysis to identify and monitor the health and well-being of dairy livestock



EIO Diagnostics uses a multispectral sensor to capture an image of the udder as the animal enters. Data from those images are processed through machine learning to identify early indicators of infection

Dairy Biotechnology

Biotech startups are targeting common bacterial and viral infections that plaque dairy herds using innovative approaches to reduce farmers' dependence on traditional antibiotics



- Some biotech startups also provide rapid on-farm systems for detecting mastitis, which is the most fatal and contagious infection for cows
- Robotics Technology is beneficial as it helps in the development of new vaccines for the treatment and prevention of dairy-cattle diseases. It also helps early identification and development of genetically superior animals

Acumen Detection has developed a rapid on-farm system for detecting mastitis, a contagious infection that impacts a cow's udder and can become fatal if not treated in time, in three hours

Avivagen

Avivagen's non-antibiotic, non-hormonal OxC-beta platform is a new alternative to growth-promoting antibiotics that can be provided to animals in a feed supplement



Recombinetics is engaged in applying gene-editing techniques to food animals, aiming to provide precision breeding solutions for animal health, animal welfare, and sustainability

Robotics Technology



- Robotics technology addresses the lack of reliable and skilled labor in the dairy industry
- Precision dairy farming, which includes the use of automated milking and computerized systems to milk or feed dairy cattle, has been increasing steadily in the dairy industry in recent years
- Robotics technology is beneficial as it helps in the packaging and palletizing of dairy food products
 - Milking robots can be used to automate the entire milking and feeding process thereby filling the shortage of skilled labor

⚠ DeLaval

DeLaval offers a wide range of integrated robotics solutions for the dairy industry with a focus on seamless integration



Lely major player in crafting robots for dairy including everything from milking devices to automated brushes that help cows scratch those hard-to-reach itches



Pearson Milking Technologies manufactures robotic milking equipment that uses laser and scanning technologies

Source(s): Web Research

Tech Innovations in the Dairy Industry



Digital Monitoring Technology

Dairy Biotechnology

Robotics Technology

Whole-Farm Management

Feed Technology



- Whole-farm management technologies help keep track of the important metrics on each livestock in one simple dashboard
- Farmers can track metrics such as cost, performance, and sales numbers in addition to other important data like due dates, feeding plans, locations, and medical records for each animal
- Whole Farm Management Technology allows a tight rein on breeding costs and helps to produce higher-quality
 offspring with less guesswork. It also helps in keeping detailed individual records for all animals



BoviSync's cloud-based SaaS product allows dairy farmers to monitor protocols, manage herd records to find areas of improvement, and track successes in overcoming problem areas



Milc Group is developing cloud-based tools to improve whole farm management including everything from equipment maintenance to finances



Nedap's CowControl is an all-in-one dairy farm management and herd monitoring system that tracks labor efficiency, reproduction, cow health, and management

Digital Monitoring Technology

Dairy Biotechnology

Robotics Technology

Whole-Farm Management

Feed Technology

• Feed technology provides farmers with better insight about what and how much their herd is eating to enhance enzymes within corn kernels



- Also allows for the precise loading and feed-out of each ration, ensuring that animals will receive a consistent diet every day
- Feed technology maximizes income over feed cost (IOFC) and controls feed costs and simplifies monitoring of diets and ration stocks, and records and stores the data for future insights



Agrivida's Grainzyme technology produces beneficial enzymes inside a kernel of corn such as phytase, glucanase, and other enzymes that optimize nutritional performance



Biofeed has developed different probiotics and yeast-based products that work to promote the well-being of animals all derived from fermentation processes



Consumer Physics' Scio provide dairy farmers with real-time analysis of their corn silage, haylage, and dry hay on the farm to understand its content



Looking ahead: Concerns For The Future



Sustained Inflation

The sustained inflation that plagued 2021 seems set to continue. Prolonged cost increases could slash margins and dairy companies may continue to operate under stress, with pressure to innovate in an under-resourced environment.



Growing Demand for Dairy Alternatives

There has been a significant shift in consumer eating habits and diets as awareness for healthier alternatives has increased. This has led several consumers to pursue dairy alternatives, such as plant-based, dairy-free products.



Technological Excellence

Achieving technological excellence remains a major industry goal. Currently, only a few companies are very agile and fast enough to respond to consumer trends, seize market opportunities, and respond to volatility and uncertainty.



Labor Market

The industry has struggled to attract a vibrant and reliable workforce. Labor shortages and costs are likely to be long-term issues. Plants are competing for a shrinking pool of workers while adapting to higher wages and benefits costs.



Commodity Shortages

Supply-chain disruptions and demand increases also cause commodity shortages, which bring complex challenges. In response to the pandemic, many companies rationalized stock-keeping units.



Global Crisis

Another wave of COVID-19 could destroy much of the progress that dairy companies have made. Companies are worried about being able to continue supplying customers if factories have to shut down for health and safety reasons.

Key Recommendations



Implement Dynamic Pricing

Inflation can lead to lower margins unless companies have the power to raise prices. Getting the most value from pricing requires setting the right initial price, optimizing discounts and rebates, and managing leakage.



Expand the Business

Despite impediments, many dairy businesses managed to launch productivity initiatives, expand plants, and build new product lines in 2021. Coupled with the enormous demand for a variety of dairy products, there are countless opportunities.



Diversify and Innovate Products

Although the plant-based food market is expanding, there also appears to be a growing recognition of dairy's nutritional power. This is evident in the success of products such as kefir and probiotic supplements, among many others.



Establish Dairy as an Employer of Choice

By elevating the dairy industry as a dynamic work environment that offers financial security, needs-based offerings, and rotational upskilling program, companies can attract talent and seek lower attrition rates.



Increasing Resilience in Supply Chains

Developing countries have an opportunity to build and strengthen regional value chains through regional pacts. These can ensure that small firms cooperate to reduce transaction costs and benefit from economies of scale.



Implement a Sustainability Strategy

Consumers expect transparency about emissions and related issues and initiatives. Paying attention to localizing the supply chain, decarbonizing, and promoting animal welfare will prove integral for the longevity of the industry.

V. M&A Highlights



Recent Highly Acquisitive Consolidators

The global dairy industry has maintained robust M&A activity during the pandemic. Dairy companies are highly acquisitive toward retail-based dairy product manufacturers and dairy farms.























44 facilities and associated direct store delivery system

Other Notable Transactions(1)

(Buyer / Target)









BBVABancomer







TEMASEK

















							/
Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
30-Aug-2022	Powdered Cheese Business of Kraft Heinz	Asset comprises powdered cheese production business	United States	Kerry Group	Ireland	107.5	-
10-Aug-22	Mill Creek Cheese	Manufactures cheese through its cheese plant	United States	V&V Supremo Foods	United States	-	-
3-Aug-22	Royal Group	Engages in the processing, producing, and selling of dairy products	China	Undisclosed	-	1,314.9	2.7X
2-Aug-22	Richmond Beverage Solutions & Pacific Dairy Solutions	Comprises dairy product production business	United States	Dairy Farmers of America	United States	-	-
1-Aug-22	Shandong Junjun Cheese	Engages in the research, development, and production of dairy products	China	Bel Société	France	-	-
1-Aug-22	Futura Foods Wales	Engages in cutting, blending, and packing cheese	United Kingdom	Joseph Heler	United Kingdom	-	-
25-Jul-22	Ambrosi	Manufactures dairy products	Italy	Groupe Lactalis	France	-	-
21-Jul-22	Industria Latticini G. Cuomo	Produces dairy products	Italy	Granarolo	Italy	-	-
13-Jul-22	Safilait	Produces dairy products under the Jibal brand	Morocco	Polmlek	Poland	-	-
1-Jul-22	Assets of Borden Dairy	Assets of dairy products production business	United States	Hiland Dairy Foods Company	United States	-	-
28-Jun-22	Mill Haven Foods	Manufactures and supplies dairy proteins	United States	Select Milk Producers	United States	-	-
21-Jun-22	Milk Processing Plant of ALEV JSC	Asset comprises milk processing plant	Russia	Ros Agro	Cyprus	-	-
20-Jun-22	Bella's Organic	Manufactures and markets vegan, organic artisan handmade cheese products	Austria	Bettermoo(d) Food Corporation	Canada	-	-
16-Jun-22	Maytag Family Farms	Produces and sells cheese products	United States	AgCertain Industries	United States	-	-
8-Jun-22	Soprole Inversiones	Offers refrigerated and non- refrigerated dairy products	Chile	Undisclosed	-	-	-
7-Jun-22	ForA:Butter	Produces plant-based butter	United States	AAK Foodservice	United States	-	-
31-May-22	Dairyfood USA	Produces and markets cheese and dairy products	United States	Gilman Cheese Corporation	United States	-	-
25-May-22	Cheese facility in Campbell	Asset comprises cheese producing business	United States	BelGioioso Cheese	United States	-	-
24-May-22	Wardat Almashreq Food	Produces dairy and food products	Saudi Arabia	Saudi Advanced Industries	Saudi Arabia	-	-
20-May-22	Jalna Dairy Foods	Produces dairy food products	Australia	Groupe Lactalis	France	-	-
18-May-22	Arla Foods business in Russia	Asset comprises dairy products manufacturing business	Russia	Undisclosed	-	-	-
6-May-22	Yashili International Holdings	Manufactures and sells dairy and nourishment products	Hong Kong	China Mengniu Dairy	Hong Kong	385.1	0.7X
3-May-22	Baker Cheese	Produces mozzarella and string cheese products	United States	Sargento Foods	United States	-	-



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Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
29-Apr-22	Ingredient Solutions	Manufactures cheese for the food industry	Ireland	Rupp	Austria	-	-
28-Apr-22	Untitled Oats	Produces oat milk	United Kingdom	Undisclosed	-	-	-
26-Apr-22	Gmundner Molkerei eGen	Produces and supplies milk and cheese products	Austria	Salzburger Alpenmilch	Austria	-	-
26-Apr-22	Russian operations and the processed cheese factory of Valio	Asset comprises the milk products producing business	Russia	Velkom Group	Russia	-	-
13-Apr-22	Jeju Milk	Produces and sells organic and white milk	South Korea	Samyang Foods	South Korea	-	-
5-Apr-22	Arabian Food Industries Company	Manufactures, markets, and distributes dairy and food products	Egypt	Expedition Investments	Mauritius	109.1	-
29-Mar-22	Factory in the German State of Bavaria and Three Local Dairy Brands	Asset comprises fresh milk, yogurt, quark, cream etc.	Germany	Groupe Lactalis	France	-	-
19-Mar-22	Sri Krishna Milks Private	Owns and operates a dairy farm	India	Dodla Dairy	India	-	-
8-Mar-22	Yoghurt business of Jalna	Asset comprises yogurt production and distribution operations	Australia	Lactalis Australia	Australia	-	-
2-Mar-22	China ZhongDi Dairy Holdings Company	Operates dairy farms in the People's Republic of China	China	China Youran Dairy Group	China	-	-
25-Feb-22	Abico Holdings	Engages in dairy farming business	Thailand	Malee Group	Thailand	66.4	0.9x
15-Feb-22	Business and operations carried out by Petabern Dairies	Asset comprises dairy products manufacturing business	Australia	Farm Fresh Berhad (KLSE:FFB)	Malaysia	-	-
10-Feb-22	Sonic Milling Systems	Develops food technology that produces oat base ingredients and dairy products	Canada	Above Food	Canada	-	-
8-Feb-22	Laboratoires Phode	Develops and produces sensorial additives for milk cows, beef cattle, etc.	France	Turenne Santé	France	-	-
31-Jan-22	Medlee Foods	Produces and sells butter products	United States	Grassland Dairy Products	United States	-	-
26-Jan-22	Ice Cream Production Facility	Asset comprises ice-cream production business	United States	Yuengling's Ice Cream	United States	-	-
24-Jan-22	Gaudis	Engages in the production, processing of the Gaudis extra hard cheese	Switzerland	Fromagerie Amstutz	Switzerland	-	-
4-Jan-22	Casper's Ice Cream	Manufactures ice creams and other frozen products	United States	MidOcean Partners	United States	-	-
31-Dec-21	Beijing Bright Health Dairy	Produces dairy products	China	Bright Dairy & Food	China	-	-
13-Dec-21	Coolhaus	Produces ice creams	United States	Perfect Day	United States	-	-
9-Dec-21	St Helen's Farm	Offers dairy products like goat milk, cheese, and others	United Kingdom	Undisclosed	-	-	-
8-Dec-21	Superior Dairy	Distributes milk to Costco stores	United States	Michigan Milk Producers Association	United States	-	-



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Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
6-Dec-21	The Coastal Companies	Distributes fresh produce and dairy and processes fruits and vegetables	United States	Sysco Corporation	United States	-	-
2-Dec-21	Assets of Prairie Farms Dairy	Assets of Prairie Farms Dairy milk production business unit	United States	United Dairy	United States	-	-
1-Dec-21	Clover Stornetta Farms	Processes, produces, and distributes a range of dairy products	United States	Alpina Productos	Colombia	-	
20-Nov-21	Namyang Dairy Products	Produces and sells dairy products	South Korea	WINIA	South Korea	127.4	-
13-Nov-21	Beijing Shounong Animal Husbandry Development	Produces dairy products	China	Beijing Sanyuan Foods	China	-	-
10-Nov-21	Glanbia Ireland Designated Activity Company	Processes dairy and agri ingredients	Ireland	Glanbia Co-operative Society	Ireland	-	-
3-Nov-21	Milkshop International	Develops and franchises tea shops	Taiwan	Jollibee Worldwide	Philippines	-	-
29-Oct-21	Betânia Lacteos	Offers different kinds of milks	Brazil	Embaré Indústrias Alimentícias	Brazil	-	-
28-Oct-21	Hachiya Dairy Products	Manufactures and sells confectionaries, ice, and ice cream	Japan	Banryu	Japan	-	
27-Oct-21	Ausnutria Dairy Corporation	Engages in the research and development of milk processing	Hong Kong	HongKong Jingang Trade Holding Co.	Hong Kong	1,719.4	1.5X
25-Oct-21	Laiterie Chalifoux	Manufactures and sells dairy products	Canada	Alsace-Lait	France	-	-
25-Oct-21	Calabro Cheese Corporation	Produces and distributes dairy products	United States	Granarolo	Italy	-	-
22-Oct-21	Qinghai Xiaoxiniu Biological Dairy Industry	Produces and sells dairy products	China	Bright Dairy & Food (SHSE:600597)	China	-	-
20-Oct-21	Mario Costa	Offers production of milk derivatives	Italy	Granarolo	Italy	-	-
19-Oct-21	Dairy Assets in Belgorod Region, Russia	Assets comprises dairy farm	Russia	Undisclosed	-	-	-
11-Oct-21	Whitehall Specialties	Produces and distributes cheese products	United States	Ornua (Wisconsin) Ingredients	United States	-	-
6-Oct-21	Fude + Serrahn Milchprodukte GmbH & Co. KG	Produces and distributes dairy products	Germany	Fude + Serrahn Vermögensverwaltung	Germany	-	-
6-Oct-21	The Arab Dairy Products Co.	Produces and sells cheese primarily in Egypt	Egypt	Gadwa for Industrial Development	Egypt	71.5	1.8x
5-Oct-21	Orange Tree Technologies	Develops SaaS platform for dairy food product companies	India	Dairy.com	United States	-	-
27-Sep-21	Kwality	Engages in processing and selling of milk and milk products	India	Sarda Mines Private	India	-	-
24-Sep-21	PJSC Ichnya Condensed Milk Company	Produces and sells sweetened condensed milk and canned milk products	Ukraine	Inter Way Capital	Ukraine	-	-
16-Sep-21	Polly-O Cheese	Produces and sells Italian cheeses	United States	BelGioioso Cheese	United States	-	-



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Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
16-Sep-21	GBfoods Africa Holdco	Manufactures and distributes daily food products in South Africa	Netherlands	The GB Foods	Spain	-	-
15-Sep-21	Isigny Sainte-Mere	Produces milk and milk products	France	Health and Happiness (H&H) International	Hong Kong	-	-
9-Sep-21	Inner Mongolia Yiyingmei Dairy	Manufactures and sells dairy products	China	Beijing Dabeinong Technology Group	China	-	-
8-Sep-21	Medina Holdings	Produces and supplies dairy, eggs, and bakery products	United Kingdom	Nijjar Group Holdings (Acton)	United Kingdom	-	-
8-Sep-21	Masterleo	Provides pasteurization services and calibrations for dairy customers	United States	Rodem	United States	-	-
7-Sep-21	SAS Fromacoeur	Produces aperitif dairy products	France	Terra Lacta	France	-	-
1-Sep-21	Carolina Aseptic / Carolina Dairy	Offers packaged food and beverages	United States	Saputo (TSX:SAP)	Canada	-	-
17-Aug-21	Hunter Farms Dairy Business of Harris Teeter	Asset comprises a dairy processing plant	United States	Maryland & Virginia Milk Producers	United States	-	-
1-Aug-21	Yofix Probiotics	Develops plant-based platform for non-dairy pro-biotic foods and drinks	Israel	Big Idea Ventures	-	-	-
30-Jul-21	Ice Line Sofia	Manufactures ice creams	Bulgaria	Undisclosed	-	-	-
23-Jul-21	Nepean River Dairy	Produces dairy products in Australia	Australia	Nature One Dairy	Australia	-	-
21-Jul-21	Nijjar Dairies	Operates as a dairy processing company	United Kingdom	Medina Dairy	United Kingdom	-	-
20-Jul-21	Only Oats/Culcherd	Manufacture food products	Canada	Above Food	Canada	-	-
5-Jul-21	Wensleydale Dairy Products	Manufactures, sells, and export cheeses worldwide	United Kingdom	Saputo (TSX:SAP)	Canada	-	-
1-Jul-21	URUS Group	Develops artificial insemination and livestock management software	United States	Pon Holdings	Netherlands	-	-
28-Jun-21	Pure Source Dairy Farm Company	Owns and operates dairy farms	China	Austasia Investment Holdings	Singapore	-	-
28-Jun-21	Two Dairy Farms in Shanxi and Hebei of Fonterra Co-operative	Asset comprises dairy farms	China	Inner Mongolia Youran Dairy	China	-	-
24-Jun-21	Alibra Ingredientes	Develops and produces dairy solutions	Brazil	Axxon Group	Brazil	60.6	1.1X
23-Jun-21	S.C. Agroserv Mariuta	Produces and sells dairy products in Romania	Romania	Evergent Investments (BVB:EVER)	Romania	-	-
22-Jun-21	AB Zemaitijos pienas	Produces and sells dairy products	Lithuania	Undisclosed	-	84.8	-
18-Jun-21	Herdinsights	Developing reproductive and health monitoring system for dairy cows	Ireland	Datamars	Switzerland	-	-
18-Jun-21	Confepar Agro- Industrial	Engages in the production and distribution of dairy products	Brazil	Lactalis do Brazil – Comercio	Brazil	-	-



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Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
15-Jun-21	Godrej Maxximilk	Engages in in-vitro production of embryos that aid dairy farmers in milk production	India	Godrej Agrovet	India	-	-
7-Jun-21	Red Apple Cheese/Barron County Cheese/Cheese Brothers	Produces smoked, flavored, and kosher specialty cheeses	United States	Ronin Equity Partners	United States	-	-
1-Jun-21	Loyez Woessen	Manufactures and sells dairy products	France	Unigrains	France	-	-
25-May-21	Campina	Produces and sells yogurt	Russia	Ehrmann	Germany	-	-
25-May-21	Reedsburg facility of Wisconsin Specialty Protein	Asset comprises a facility that manufactures dairy powders	United States	Saputo	Canada	-	-
22-May-21	Grupo Lala, S.A.B. de C.V.	Produces flavored milk and beverages	Mexico	Grupo Financiero	-	3,218.8	0.9x
17-May-21	Granarolo UK	Processes and sells milk and dairy products	United Kingdom	Granarolo	Italy	-	-
13-May-21	Elovi Vietnam Joint Stock Co	Manufactures dairy products	Vietnam	Morinaga Milk Industry	Japan	-	-
12-May-21	Five:am Life	Produces and distributes yogurt and other dairy products	Australia	Barambah Organics	Australia	-	-
12-May-21	Sukhonsky dairy plant	Manufactures canned condensed milk	Russia	Basalt Agro	Russia	-	-
5-May-21	Haystack Mountain Creamery	Produces and markets goat milk cheeses in the United States	United States	The Stage Fund	United States	-	-
4-May-21	Iskra Dairy Farm	Comprises a dairy farm	Russia	Republic of Karelia	Russia	-	-
22-Apr-21	AS E-Piim Tootmine	Produces dairy products in Estonia	Estonia	Meierei	Netherlands	-	-
21-Apr-21	DODONI SA Milk Farm Industry of Epirus	Produces and exports cheese products	Greece	CVC Capital Partners	United Kingdom	-	-
10-Apr-21	Milk assets in Brazil of Cooperativa Agroindustrial De Londrina - Cativa	Asset comprises milk and milk products production business	Brazil	Groupe Lactalis	France	-	-
2-Apr-21	SIA "Baltic Dairy Board"	Produces and distributes lactose and milk products	Latvia	AB Vilkyskiu pienine (NSEL:VLP1L)	Lithuania	-	-
25-Mar-21	Open Country Dairy	Engages in the production, marketing, and export of dairy products worldwide	New Zealand	Talley's Group	New Zealand	-	-
24-Mar-21	DePere and Harvard Milk Processing Plants	Asset comprises milk producing business	United States	Select Milk Producers; New Dairy Opco	-	-	-
22-Feb-21	Sociedad Procesadora De Leche Del Sur	Produces, sells, and exports powdered milk, cheese, and dairy products	Chile	Soprole Inversiones	Chile	-	-
10-Feb-21	Maiquer Group (SZSE:002719)	Engages in the production and sale of dairy products	China	Changji State-owned Assets Investment	China	204.1	-
2-Feb-21	Lauds Plant Based Foods	Produces cheese and butter	Australia	Pure Foods Tasmania (ASX:PFT)	Australia	-	-
29-Jan-21	Bean Stalk Snow	Engages in sale of powdered milk and baby food for infants	Japan	MEGMILK SNOW BRAND	Japan	-	-



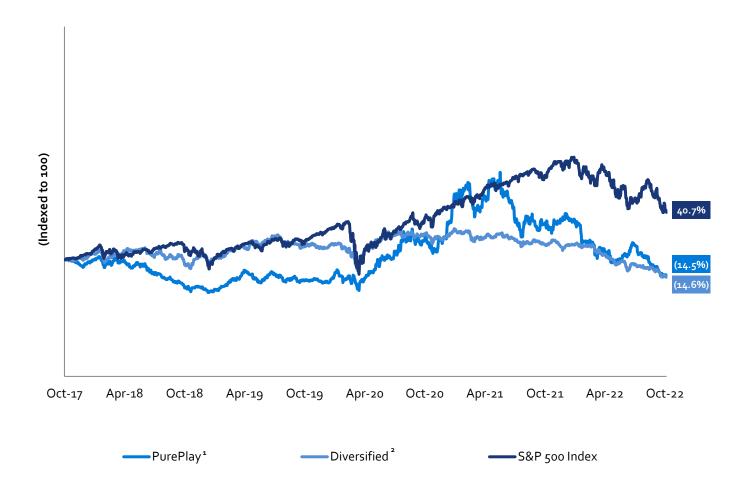
Ann. Date	Target Company	Target Description	Country	Bidder Company	Country	EV (\$m)	EV/Rev (x)
25-Jan-21	OAO Kubarus-Moloko	Offers milk processing services	Russia	Undisclosed	-	-	-
22-Jan-21	Catapult Enterprises	Operates dairy products and egg retail stores	United Kingdom	Exponent Private Equity	United Kingdom	-	-
19-Jan-21	Danone (undisclosed stake)	Operates in the food and beverage industry	France	Bluebell Capital Partners	United Kingdom	-	-
13-Jan-21	Ganadería Priégola	Produces and sells packaged dairy products	Spain	Inno Ventures company	Spain	-	-
12-Jan-21	Parmareggio	Produces and sells cheese	Italy	Agriform	Italy	-	-
6-Jan-21	Gad Dairies	Produces dairy products	Israel	Migdal Insurance Company	Israel	-	-
					Mean		2.5X
					Median		1.0X

VI. Public Company Performance



Share Price Performance

S&P 500 Index outperformed the overall dairy industry, with a five-year return of 40.7%. The pure-play companies in the dairy industry showed a five-year return of (14.5%) while the diversified companies have a (14.6%) return.



Notes

^{1.} Pure Play includes Inner Mongolia Yili, Emmi, Fonterra Co-operative Group, Shanghai Milkground Food Tech, Bright Dairy & Food, China Modern Dairy, Beingmate, Savencia, Yashili International, Dutch Lady Milk Industries and Dodla Dairy

^{2.} Diversified includes Nestlé, Abbott Laboratories, Danone, China Mengniu Dairy, Saputo, Yakult Honsha, Vietnam Dairy Products JSC, Meiji Holdings, Saudia Dairy & Foodstuff Company, Ausnutria Dairy Corporation, Morinaga Milk Industry, China Youran Dairy Group, Megmilk Snow Brand and Synhit Milk

Public Company Valuation Metrics



		EV (\$m)	Margi		EV/		
Company Name	Market Cap (\$m)		EBITDA LTM	EBIT LTM	Sales (x) LTM	EBITDA (x) LTM	EBIT (x) LTM
PurePlay		(, ,					
Inner Mongolia Yili	28,900	29,796	10.8%	8.0%	1.7X	15.7X	21.2X
Emmi	4,045	4,679	10.0%	6.5%	1.1X	11.0X	17.1X
Fonterra Co-operative Group	2,407	5,196	7.3%	5.4%	0.4X	5.0X	6.7x
Shanghai Milkground Food Tech	2,156	1,975	5.2%	3.3%	2.6x	50.5X	79.5X
Bright Dairy & Food	1,966	2,472	5.8%	3.0%	o.6x	9.7X	18.7x
China Modern Dairy	887	2,255	26.4%	23.2%	1.6x	6.ox	6.8x
Beingmate	802	860	6.9%	3.5%	1.9X	27.6x	54.4X
Yashili International	683	535	(1.2%)	(4.2%)	0.9X	NM	NM
Savencia	682	1,538	7.2%	4.3%	0.2X	3.4X	5.7X
Dutch Lady Milk Industries	416	402	23.7%	21.0%	1.4X	6.1x	6.8x
Dodla Dairy	367	338	8.3%	6.2%	1.1X	13.2X	17.5X
		Mean	10.0%	7.3%	1.2X	14.8x	23.4X
		Median	7.3%	5.4%	1.1X	10.4X	17.3X

Public Company Valuation Metrics



							/	
			Margin (%)		EV/			
			EBITDA	EBIT	Sales (x)	EBITDA (x)	EBIT (x)	
Company Name	Market Cap (\$m)	EV (\$m)	LTM	LTM	LTM	LTM	LTM	
Diversified								
Nestlé	292,610	341,289	19.8%	17.0%	3.6x	18.0x	21.0X	
Abbott Laboratories	178,187	185,964	30.6%	23.2%	4.1X	13.3X	17.6x	
Danone	29,096	40,494	17.8%	13.2%	1.5X	8.4x	11.4X	
China Mengniu Dairy	15,619	19,471	7.0%	4.4%	1.5X	20.6x	32.9X	
Saputo	9,266	12,177	6.8%	4.0%	1.0X	14.5X	24.5X	
Yakult Honsha	9,107	8,530	18.9%	13.2%	2.7X	14.4X	20.6x	
Vietnam Dairy Products	6,131	5,668	21.4%	17.6%	2.2X	10.1X	12.4X	
Meiji Holdings	6,079	6,553	14.0%	9.0%	0.9x	6.2X	9.6x	
Saudia Dairy & Foodstuff	1,699	1,514	16.4%	12.3%	2.5X	15.0X	20.1X	
Morinaga Milk Industry	1,297	1,816	9.4%	5.2%	0.5X	5.2X	9.4X	
Ausnutria Dairy Corporation	1,193	1,099	12.3%	9.7%	0.9x	7.3X	9.2X	
China Youran Dairy Group	938	3,396	20.9%	19.4%	1.4X	6.5x	7.0X	
MEGMILK SNOW BRAND	773	1,165	5.8%	2.8%	0.3X	4.9X	10.2X	
Synlait Milk	401	608	6.1%	3.3%	o.6x	9.5X	17.8x	
	_							
		Mean	14.8%	11.0%	1.7X	11.0X	16.ox	
		Median	15.2%	11.0%	1.4X	9.8x	15.0X	

VII. Overview of GMAP Food and Beverage Team



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