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South African Milk Processors' Organisation



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Milk SA foreword

The purpose of this publication is to make information available on the structure and performance of the dairy industry, with a view to promoting optimal development to the benefit of the South African dairy industry and consumers.

Milk South Africa (Milk SA) is proud to present this publication, which was made possible especially through the contributions of the persons or entities sharing their information via statutory regulations, the South African Milk Processors' Organisation (SAMPRO), the Milk Producers' Organisation (MPO), and the Milk SA work group comprising messres Nico Fouché, De Wet Jonker, Alwyn Kraamwinkel and Bertus van Heerden.

Executive summary

The South African intake of unprocessed milk in 2018 was 4,8% higher than in 2017, remaining high relative to 2017 until October. In November 2018, it was 0,4% lower and in December 2018 it was 1,9% higher. The estimated production in January and February 2019 is respectively, 0,4% and 1,9% lower than in the same months of 2018. The aforementioned downward trend in production is the result of the reduction in the prices of unprocessed milk in 2018, higher feed cost, and below average rainfall in many areas in South Africa.

In 2018 the South African producer price index of unprocessed milk decreased by 14,5% and from December 2018 to February 2019, it increased with 0,7%. South Africa imported 68 700 tonnes of dairy products in 2018, which is 18% lower than in 2017, and exported 45 300 tonnes, which is 7% lower than in 2017. The retail sales quantities of six of the nine dairy products, with monitored retail sales performance, were higher in 2018. The retail prices of five of the nine products increased, but by less than the inflation rate. In general, higher retail sales quantities were achieved at the expense of retail prices and the low economic growth of South Africa created downward pressure on the demand for food products including dairy products. In December 2018, the retail sales prices of the two dairy products where the sales quantities increased the most, namely UHT milk and maas, were lower than in December 2017 and in December 2016. The FAO price index of dairy products traded internationally, decreased from May 2018 to December 2018 by 20,9%, but from December 2018 to February 2019, it increased to a level 0,5% higher than in February 2018.

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Lacto Data is compiled from sources
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Figure 1: International economic growth, 2011-2020
(source: IMF, 2019 and 2020 IMF projection)

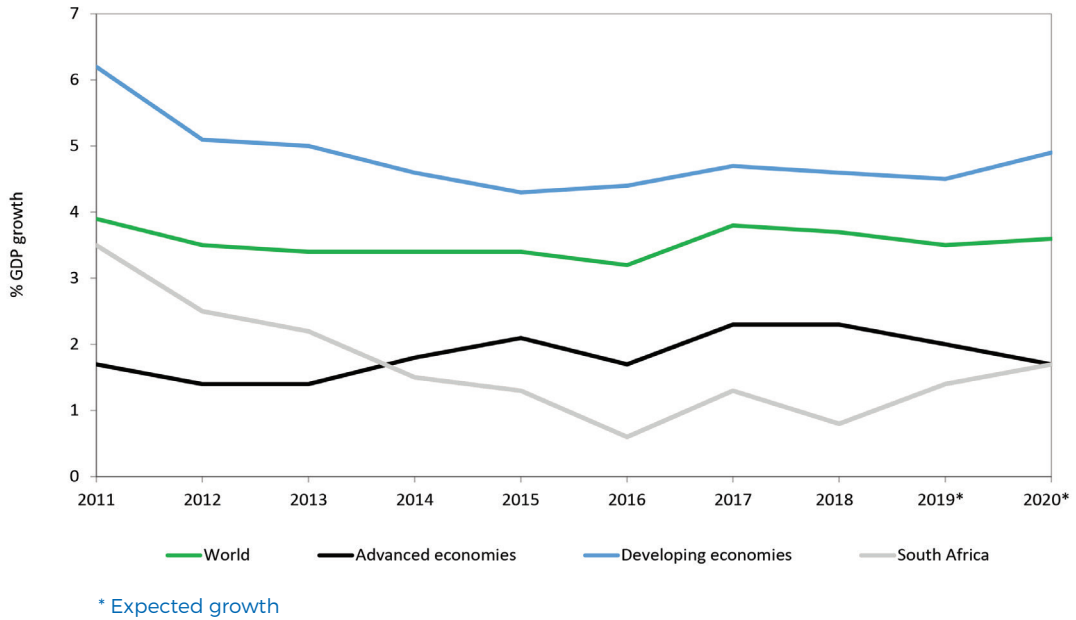
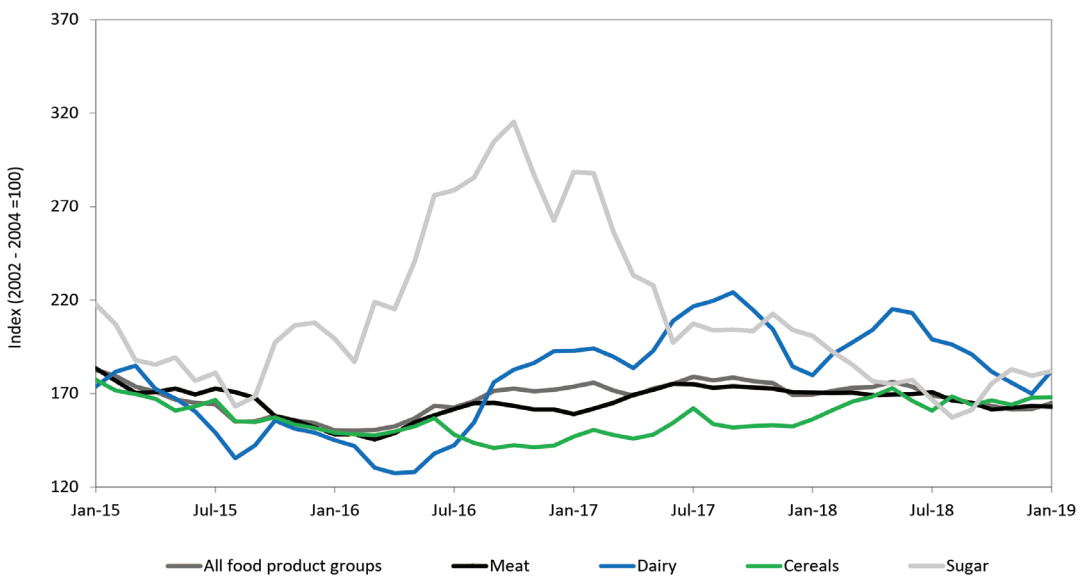


Figure 2: Food and Agricultural Organization (FAO) food price indices of internationally traded product groups, 2015-2019
(source: FAO Food Price Index, 2019)



INTERNATIONAL SITUATION



Global economic growth

The global expansion weakened during 2018. Global growth for 2018 is estimated at 3.7%, according to the January 2019 World Economic Outlook forecast, despite weaker performance in some economies, notably Europe and Asia. The global economy is projected to grow at 3.5% in 2019 and 3.6% in 2020.

The global growth forecast for 2019 and 2020 had been revised downward, partly because of the negative effects of tariff increases enacted in the United States (US) and China earlier in 2018. The further downward revision, in part, reflects a carry-over from softer momentum in the second half of 2018, including in Germany following the introduction of new automobile fuel emission standards, in Italy where concerns about sovereign and financial risks have weighed on domestic demand, and weakening financial market sentiment as well as a contraction in Turkey now projected to be deeper than anticipated.

Risks to global growth tilt to the downside. An escalation of trade tensions beyond those already incorporated in the forecast remains a key source of risk to the outlook. Financial conditions have already tightened and a range of triggers beyond escalating trade tensions could spark a further deterioration in risk sentiment. These potential triggers include a "no-deal" withdrawal of the United Kingdom (UK) from the European Union (EU) and a greater-than-envisaged slow-down in China.

Growth in advanced economies is projected to slow from an estimated 2.3% in 2018 to 2.0% in 2019 and 1.7% in 2020. Growth in the euro area is set to moderate from 1.8% in 2018 to 1.6% in 2019 and 1.7% in 2020. Growth rates have been marked down for many economies, notably Germany (due to soft private consumption, weak industrial production following the introduction of revised auto emission standards, and subdued foreign demand), Italy (due to weak domestic demand and higher borrowing costs as sovereign yields remain elevated), and France (due to the negative impact of street protests and industrial action).

There is substantial uncertainty around the projection of about 1.5% growth in the UK in 2019-2020. This current projection assumes that a Brexit deal is reached in 2019

and that the UK transitions gradually to the new regime. Current support for the deal with Europe is dwindling. Growth in the US is expected to decline to 2.5% in 2019 and soften further to 1.8% in 2020 with the unwinding of the fiscal stimulus.

Growth in emerging and developing Asia will dip from 6.5% in 2018 to 6.3% in 2019 and 6.4% in 2020. Despite fiscal stimulus that offsets some of the impact of higher US tariffs, China's economy will slow due to the combined influence of needed financial regulatory tightening and trade tensions with the US. India's economy is poised to pick up in 2019, benefiting from lower oil prices and a slower pace of monetary tightening than previously expected, as inflation pressures ease.

In Latin America, growth is projected to recover over the next two years, from 1.1% in 2018 to 2.0% in 2019 and 2.5% in 2020. Negative factors include the downgrade in Mexico's growth prospects in 2019-2020, reflecting lower private investment, and an even more severe contraction in Venezuela than previously anticipated. Argentina's economy will contract in 2019, as tighter policies aimed at reducing imbalances slow domestic demand, before returning to growth in 2020.

In sub-Saharan Africa, growth is expected to pick up from 2.9% in 2018 to 3.5% in 2019, and 3.6% in 2020. The headline numbers for the region mask significant variation in performance, with over one-third of sub-Saharan economies expected to grow above 5% in 2019-2020.

In South Africa, growth is expected to pick up from 0.8% in 2018 to 1.2% in 2019, and 1.7% in 2020. South Africa did not participate adequately in the expansion of the world economy over the past eight years. The South African economy, in terms of gross domestic product in 2018, was US\$380 billion (R5 trillion) while the world economy in 2018 was US\$84 938 billion (R1 124 trillion). The world economy expanded by US\$3 143 billion (R41.6 trillion) in 2018, effectively adding an equivalent of eight South African economies to the world.

Global food prices

The volatility in global food prices reduced towards the latter part of 2018. The Food and

Figure 3a: International FOB dairy product prices, US\$/t, Jan 2010–Feb 2019
(source: USDA)

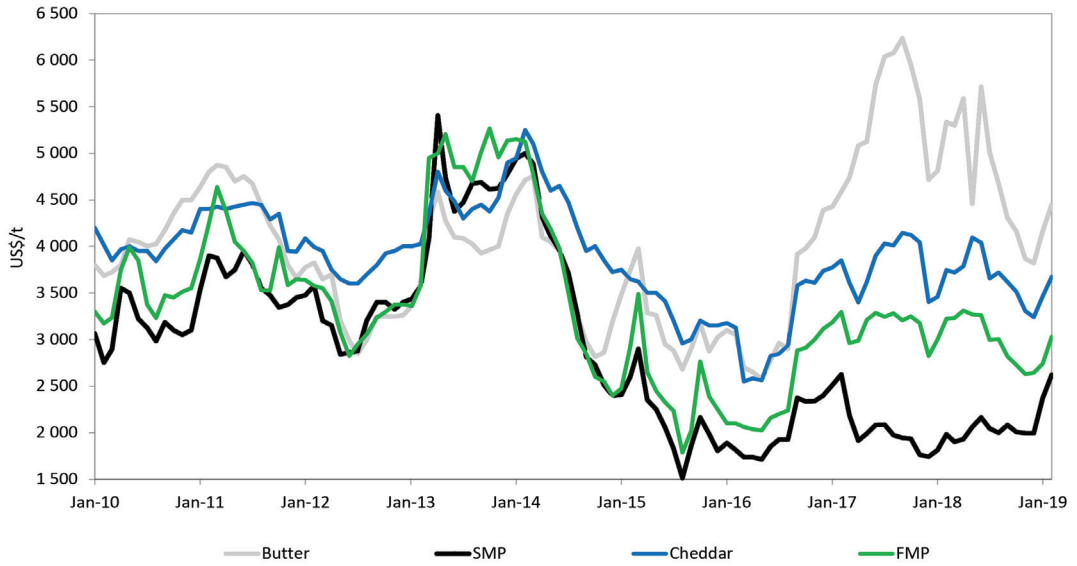
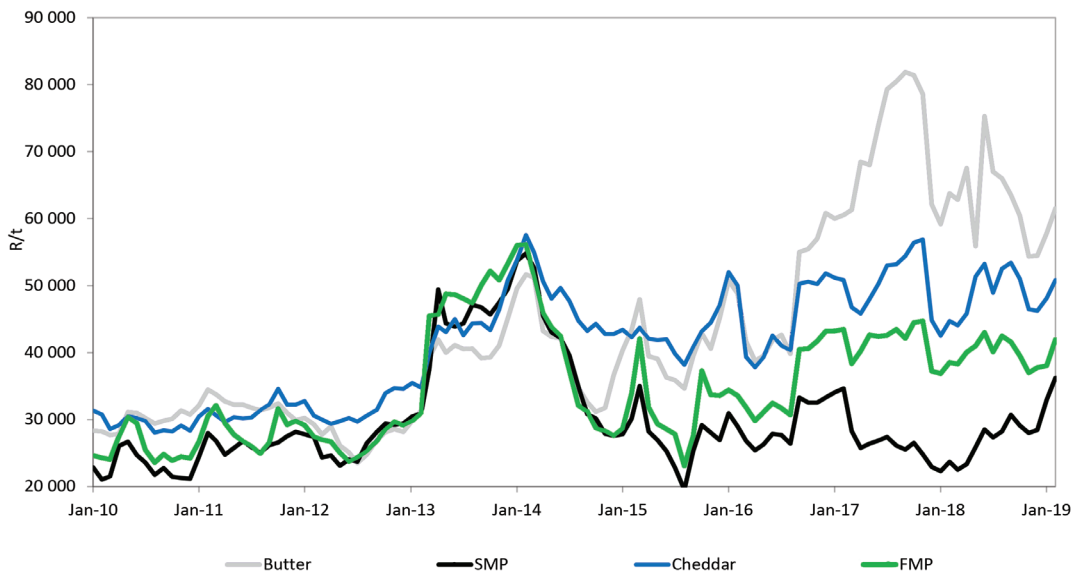


Figure 3b: International FOB dairy product prices, R/t, Jan 2010–Feb 2019
(source: USDA, Reserve Bank)



Agricultural Organization (FAO) Food Price Index decreased by 4.4% from December 2017 to December 2018. Meat and dairy prices decreased by 4.2% and 7.8%, respectively, while sugar decreased by 12%. From January 2017 to December 2018, sugar prices decreased by 38%, mainly due to higher production worldwide. The FAO Dairy Price Index varied between a peak of 215 in May 2018 and a low of 170 in December 2018. The price of cereals are, however, on an upward trend increasing by 10% from December 2017 to December 2018. The food market is characterised by high volatility due to both the demand and supply curves being highly inelastic, meaning that there is little reaction to price changes in the short term. However, small shocks in either the supply or demand will lead to large price changes. These shocks typically occur as a result of extreme weather, inputs costs linked to the volatile oil price, and sudden policy decisions, for example, to increase the biofuel content in gasoline. Volatility in the food market is here to stay.

International dairy product prices

At the beginning of 2016, the narrow price band in which dairy products typically traded changed into a divergent wider price band. The wider price band continued through 2017 and 2018 and is still evident today. The main driver behind this phenomenon was the new research that was published towards the end of 2015 and beginning 2016 indicating that a high animal fat diet is

beneficial. The research took a negative stance towards plant fats and introduced various high animal fat diets with Banting probably the most well-known, which is essentially a low carbohydrate and high animal fat diet. This development created an increased demand for animal fats that resulted in an explosion in the prices of butter, cheese, and full-cream milk powder. However, these prices levelled off since middle 2018.

Dairy product prices, with the exception of skimmed milk powder (SMP), were more volatile in 2018 when compared to 2017. The average product prices in 2018 were lower than in 2017. The trading price range for butter was between US\$5 713/t (R75 297) and US\$3 819/t (R54 497), registering a 40% variance compared with the average price. The butter price peaked in June 2018 and has been dropping ever since. The trading price range for full-cream milk powder (FMP) was between US\$3 313/t (R40 045) and US\$2 631/t (R36 965) registering a 23% variance in

“Dairy product prices, with the exception of skimmed milk powder (SMP), were more volatile in 2018 when compared to 2017. The average product prices in 2018 were lower than in 2017.”

Table 1: International calculated standardised unprocessed milk producer prices, 2013–2019 (R/ℓ) (source: LTO Nederland. Based on 4% fat-corrected milk. For a detailed definition of LTO-standardised calculated price, see www.milkprices.nl. Exchange rates: Reserve Bank monthly middle rates.)

Country	Jan 2013	Jan 2014	Jan 2015	Jan 2016	Jan 2017	Jan 2018	Jan 2019
Belgium	3,94	5,54	3,85	4,55	4,60	4,32	4,40
Germany	3,84	5,51	3,72	4,72	4,18	5,04	4,38
Denmark	3,73	5,51	3,82	4,51	4,45	5,06	4,40
France	3,90	5,68	4,38	5,55	4,42	4,89	4,68
Great Britain	4,07	5,35	4,69	5,29	4,08	5,04	4,53
Ireland	3,75	5,25	3,95	4,41	4,09	5,20	4,35
Netherlands	3,92	5,60	3,84	4,90	4,41	5,23	4,81
New Zealand	3,15	5,44	3,26	3,66	4,38	4,49	4,04
US	3,78	5,13	4,47	5,55	5,23	4,21	4,18
South Africa*	3,60	4,05	4,45	4,11	4,65	5,00	4,15

*Based on MPO price survey

Figure 4: Global milk production per species, 2011-2017 (source: IDF Bull. 494/2018)

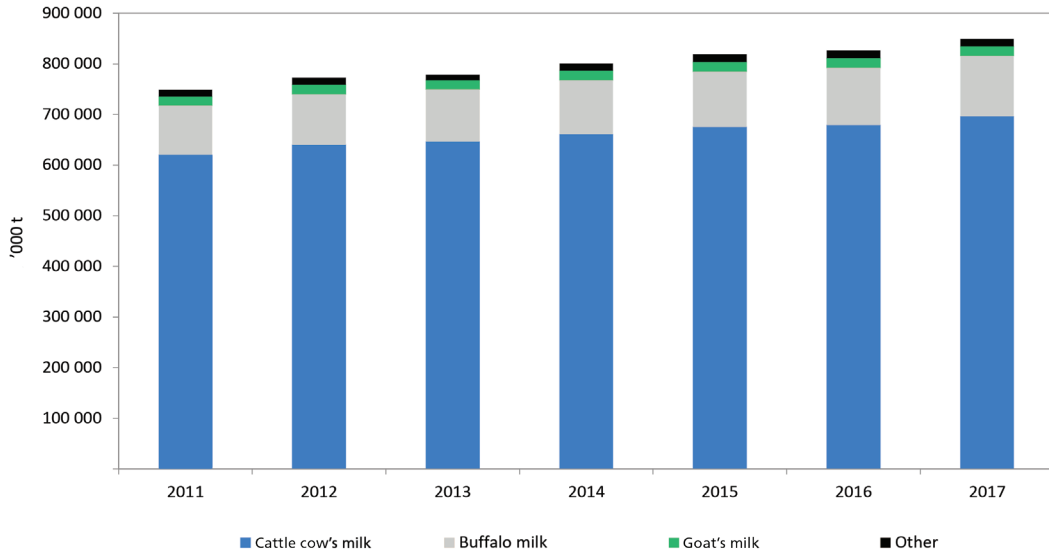
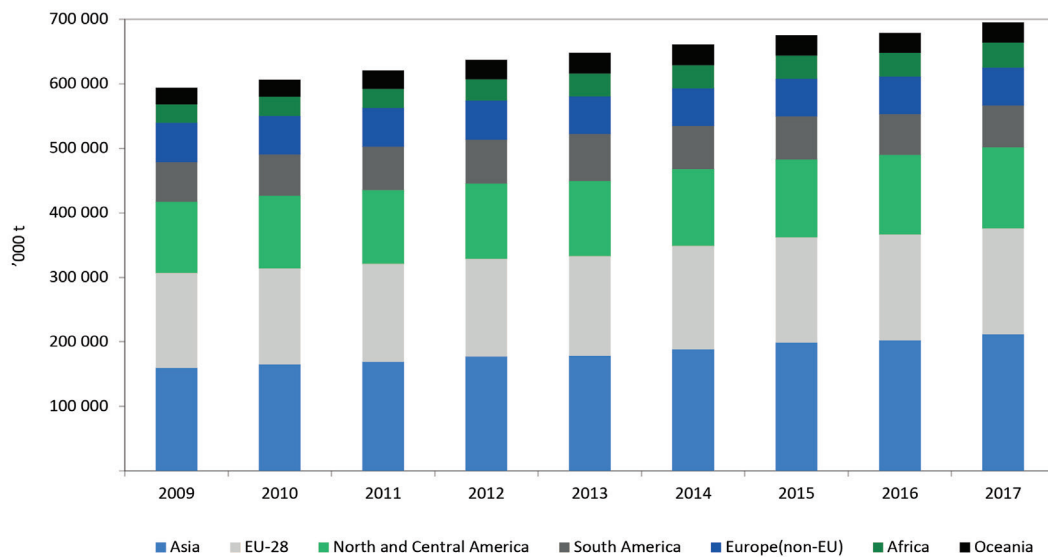


Figure 5: Cattle cow's milk production per region, 2009-2017 (source: IDF Bull. 494/2018)



relation to the average price. The full-cream milk powder price peaked in April 2018, and then followed a downward trend. The trading price range for Cheddar was between US\$4 094/t (R51 338) and US\$3 238/t (R46 206) registering a 23% variance in relation to the average price. The Cheddar price peaked in May 2018 and has been decreasing since then.

The volatility for SMP reduced from 40% in 2017 to 18% in 2018. The trading price range for SMP was between US\$2 163/t (R28 508) and US\$1 812/t (R22 287) registering a variance of 18% in relation to the average price. The SMP price peaked in June 2018 and thereafter followed a downward trend.

International unprocessed milk producer prices

Producer prices in Europe, the US, and New Zealand increased during the first half of 2018 followed by a decrease in the second half, and ended the year south of the starting point in January 2018. European prices were buoyant in the first half of 2018 due to lower summer rainfall and the risk of inadequate fodder banks for the 2018 winter.

The December 2018 producer prices in France and the Netherlands, compared to January 2018, were 1,2% and 2,2% lower, respectively. The December 2018 producer prices in the US and New Zealand compared to January 2018 were 5,0% and 5,8% lower, respectively. In South Africa, producer prices dropped by 14,5% during 2018 mainly due to strong supply, but this trend reversed in November and December. Processors announced price increases from 1 March 2019.

World milk production

Profitable milk prices throughout most of 2017 resulted in above-average production growth

in 2017. After the lower prices of 2015 and 2016, dairy farmers around the world used the higher prices of 2017 to recover the losses suffered in the previous two years. The 2017 production growth showed a 2,2% increase in cattle cow's milk and an even higher 2,5% rise in all milk produced around the world. The strongest growth was achieved in India (6,8%), Pakistan (3,8%), Turkey (11,8%), Poland (3,8%), and the UK (4,0%). The traditional export regions were weaker with negative growth recorded in France (-0,5%), the Netherlands (-0,2%), and Germany (-0,1%), while New Zealand was slightly positive on 1,3%. In France and Germany, it appears that farmers were slow to respond to improving margins, whereas in the Netherlands farmer confidence was negatively impacted by the uncertainty of the phosphate emission limitations. In China, milk production decreased by 1,6% that resulted in a very strong import demand in 2017. The weak production performance of the global heavyweights makes the 2,2% growth in cattle cow's milk even more remarkable.

It will be interesting to see if global milk production figures in 2018 will be able to beat the long-term average of 2% for two years in a row. Profitability will not be a problem as the producer price for milk was consistently above break-even throughout the first nine months of 2018. It will be the weather conditions in the EU and Australia as well as the impact of *Mycoplasma bovis* on the New Zealand milk output that could turn 2018 into a challenging year. Weather conditions in China in 2018 appear to be more favourable for milk production than 2017.

Production of dairy products

Processing in 2017 was strongly affected by the unusual divergence of fat and protein prices in the global market. The high commercial and

Table 2: Milk production growth: 2015 compared to 2014, 2016 compared to 2015, 2017 compared to 2016, and 2018 compared to 2017 (source: CNIEL, 2018)

Country	2015/2014	2016/2015	2017/2016	2018/2017*
Australia	+2,2%	-6,2%	+0,0%	+2,7%
European Union	+2,1%	+0,3%	+2,2%	+1,8%
New Zealand	-1,4%	-2,0%	+1,7%	-0,6%
United States	+1,2%	+1,6%	+1,7%	+1,1%
Uruguay	-2,0%	-10,3%	+6,3%	+6,3%
Argentina	+1,5%	-12,8%	-1,6%	+6,8%

* 6 months

Figure 6: World population and per capita consumption of dairy products, 2005, 2008–2017 (source: IDF Bull. 494/2018)

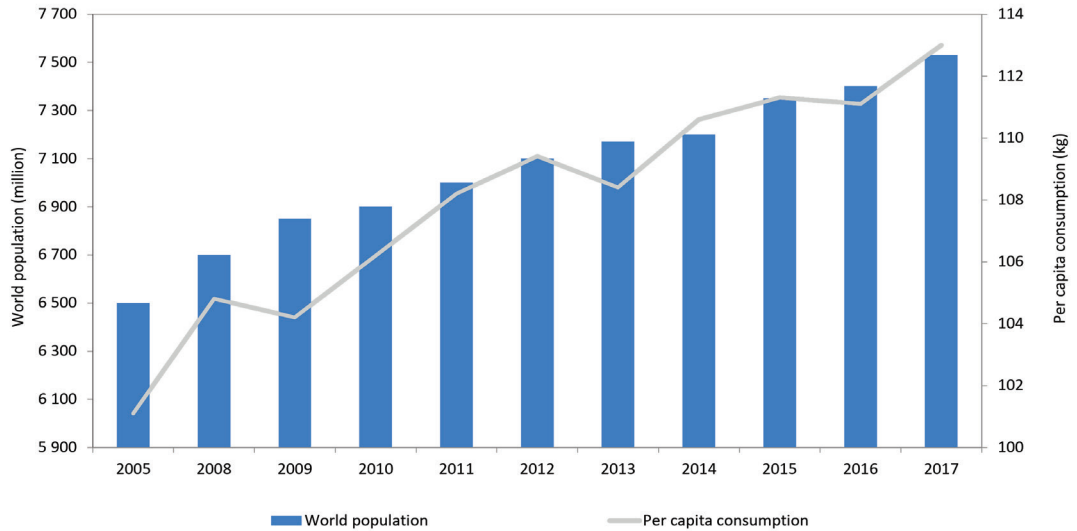
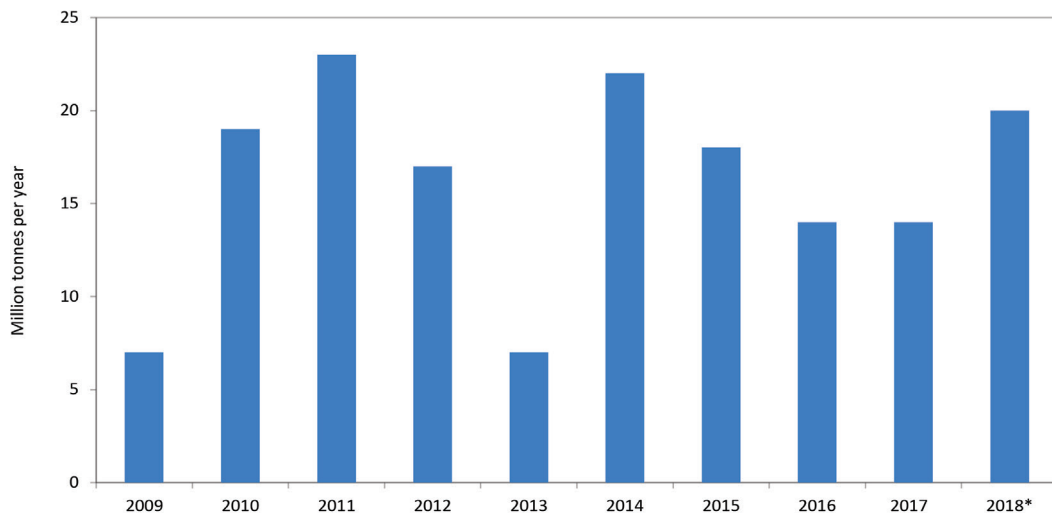


Figure 7: Annual increase in dairy demand, 2009–2018 (source: IFCN Conference, 2018)



* IFCN projection

public stocks of skimmed milk powder in the EU and the US discourage SMP production, but the very high prices of butter and butter oil made allocating milk to the SMP or butter lines still attractive at times.

Whole milk powder (WMP) is probably most affected by the high fat valorisation. Many price-sensitive markets in Africa and Asia switched to fat-filled milk powder and are expected to stick to this option as long as the price gap with WMP remains as wide as it currently is. Production of WMP recovered in 2017 with a growth of 3.3% after a strong decline of 7% in 2016. The Chinese import demand in 2017 was forceful and pulled a lot of milk into WMP processing lines with the main supply coming from New Zealand, the EU, and the US.

In 2017, global production was as follows: butter and butter oil 11.4 million tonnes (+1.2%), cheese 21.1 million tonnes (+2.6%), WMP 4.8 million tonnes (+3.3%), and SMP 4.9 million tonnes (+0.4%). The increase of 2.6% in cheese production in 2017 again shows that cheese is the main engine of dairy demand. Cheese is the only product where demand consistently grows across all major markets. Key export regions such as Oceania, the EU, and the US will see their cheese production grow in the years to come, as they have to keep up with the accelerating import demand in Asia. Growth in mozzarella production capacity in Oceania and the EU indicates that more and more cheese vats will gravitate to these regions.

Consumption of dairy products

Per capita consumption of dairy products reduced slightly in 2016, falling to 111.1 kg/capita/year from 111.3 kg/capita/year in 2015, but recovered ground in 2017 with consumption increasing to 113 kg/capita/year. The breakdown of dairy consumption is: informal 46%, fresh milk and milk products 16%, butter 15%, cheese 14%, WMP 4%, SMP 3%, and other 2%.

Liquid milk consumption remained stagnant in 2017. Even in China, liquid milk demand hardly increased and, therefore, demand growth in the remaining emerging markets such as India, Turkey, Brazil, and Mexico was no longer sufficient to compensate for the decline in the saturated markets of the EU and the US, where competition from plant-based beverages is building. Consumer preference to the liquid dairy category is increasingly shifting towards

fermented drinks. Yoghurts, yoghurt drinks, and other fermented drinks still experience steady demand growth in all the key markets, up 2.5% in 2017.

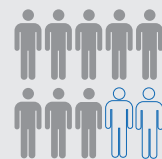
In the western world, 2017 marked the end of the boom years of butter and cheese consumption. Butter consumption in the US still increased, but only by a modest 0.5%, and EU consumption declined by 1.7%. US cheese consumption grew by 2.3% (last three-year average 3.4%), but EU consumption declined by 0.1%.

Asia is becoming the new engine of cheese consumption growth with China and the Republic of Korea being the main drivers.

“The global demand for dairy will grow by 20 million tonnes in 2018, of which 6 million tonnes will be as a result of population growth and 14 million tonnes as a result of increased per capita consumption.”

NEED TO KNOW

>7,4 billion people - still increasing



avg per capita consumption
113 kg per capita per year
[up from 101 kg in 2005]



Figure 8: Percentage breakdown of global dairy consumption, 2017 (source: IDF Bull. 494/2018)

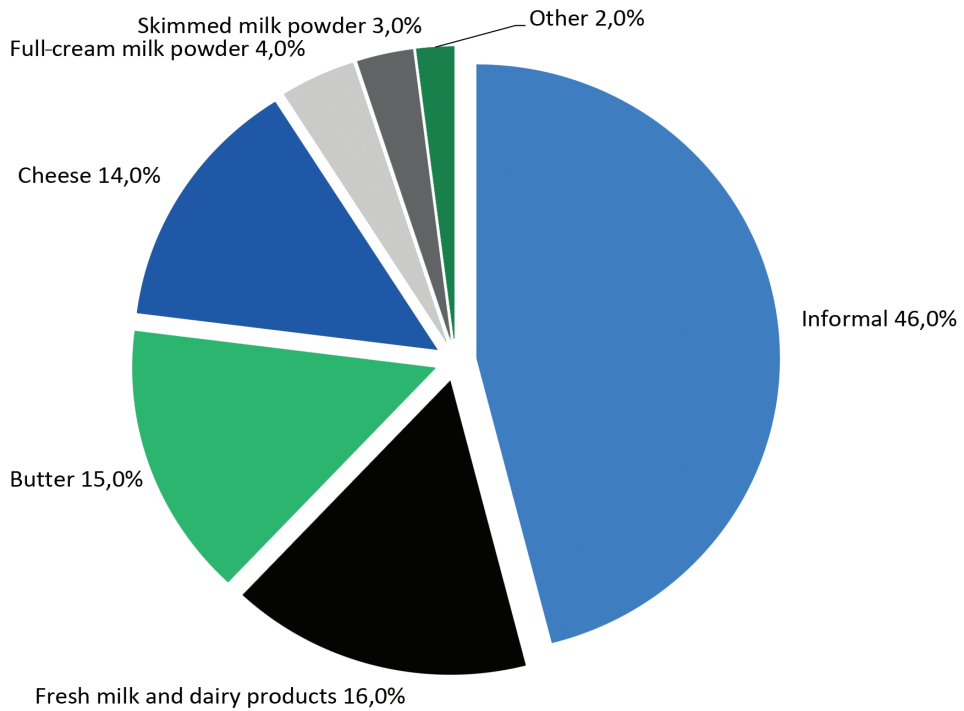
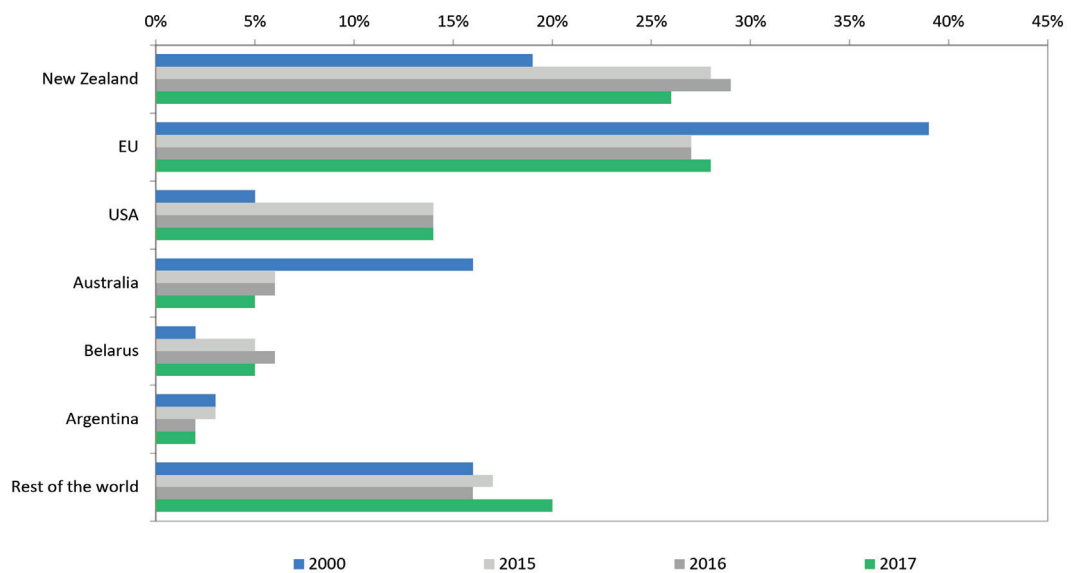


Figure 9: Share of key exporting countries in total trade in dairy products (milk equivalent basis), 2000, 2015, 2016, and 2017 (source: IDF Bull. 494/2018)



International dairy trade

Global dairy trade amounted to 6,55 million tonnes in 2010 and increased to 8,14 million tonnes in 2017. The value of dairy trade in 2017 was US\$23,89 billion (R1 trillion).

In 2017, there was no major turmoil such as the 2016 Russian import ban and the slowdown of import demand from China. China regained its strength as the number one dairy importer in the world while Russia remained closed for business out of most export regions except Latin America. Global trade prospered with SMP trade increasing

by 10,3% and cheese by 4,1%. However, whole and semi-skimmed milk powder, and butter and butter oil trade contracted by 3,4% and 13,9%, respectively.

Going forward we may see some interesting shifts in trade flow, following the tariff wars between the US and a number of its trading partners in 2018. Several doors will close and new doors will open with the net effect on trade volume expected to be small in 2018. Dairy imports by the oil exporters are expected to increase in the wake of an improved oil price.

Table 3: Major dairy companies, 2016 (source: IFCN, 2018)

Rank	Company name	Country	Dairy turnover US\$ billion	Market share %
1	Nestlé	Switzerland	24,2	5,8
2	Lactalis	France	19,9	4,8
3	Danone	France	17,6	4,2
4	Dairy Farmers of America	United States	14,7	3,5
5	Fonterra	New Zealand	13,7	3,3
6	Friesland Campina	Netherlands	13,6	3,3
7	Arla Foods	Denmark/Sweden	11,7	2,8
8	Saputo	Canada	10,8	2,6
9	Yili	China	9,9	2,4
10	Mengniu	China	8,8	2,1
11	Dean Foods	US	7,5	1,8
12	Unilever	Netherlands	7,0	1,7
13	DMK	Germany	6,5	1,6
14	Kraft Heins	US	6,2	1,5
15	Meiji	Japan	5,8	1,4
16	Sodiaal	France	5,8	1,4
17	Savencia	France	5,5	1,3
18	Müller	Germany	5,1	1,2
19	Agropur	Canada	5,1	1,2
20	Schreiber Foods	US	5,0	1,2

Table 4: Average herd size, selected countries, 2016 (source: IFCN 2017 for international data, MPO survey 2016 for South Africa data)

Country	Average number of cows in herd (cows in herd = cows in milk plus dry cows)
Saudi Arabia	6 924
New Zealand	419
South Africa	354
Australia	283
Czech Republic	207
US	203
Denmark	185
Israel	171
Argentina	168
United Kingdom	143
Uruguay	115
Canada	85
Uganda	2
Kenya	3

Table 5: Unprocessed milk production for the top 10 milk-producing countries and South Africa, 2017 (source: IFCN, 2018)

Country	Milk produced (million tonnes)
1 India	186
2 US	94,5
3 Pakistan	45,8
4 Brazil	35,1
5 Germany	33,4
6 China	32,9
7 France	24,9
8 New Zealand	24,4
9 Turkey	17,4
10 Russian Federation	16,9
South Africa	3,4

International primary sector

There are 120 million dairy farms globally, with more than 60% of these in South Asia. With an average per farm population of five, this implies that 600 million people live on dairy farms. Globally, the average dairy farmer milks three cows. Larger dairy farms are found in Saudi Arabia, New Zealand, South Africa, Argentina, the US, and Canada. In South Africa, the average number of cows in a herd was 354 in 2016. Average herd sizes (cows in herd) for various countries are shown in Table 4. After increasing to 125 million in 2013, dairy farm numbers are now decreasing at a rate of 1.4% per year. Dairy farms can be divided into three categories:

- household farms with between one and three cows, selling some milk and with dairy as one of a number of income sources;
- family farms with between 10 and 300 cows, where labour is mainly supplied by the farming family; and
- larger commercial farms with more than 300 cows, where employees mainly do the work.

In 2016, 63% of all dairy animals were kept by household farms, family farms kept 21%, and 16% were kept on larger commercial farms. Household farms are the dominant type in South Asia and Africa. In Latin America, East Asia, and the EU, family farms predominate with the larger commercial farms the dominant type in Oceanic countries and the US. South African dairy farms also fall into the commercial farm category.

“ Globally, the average dairy farmer milks three cows. Larger dairy farms are found in Saudi Arabia, New Zealand, South Africa, Argentina, the US, and Canada.”

Cost of milk production

This section is based on the analysis of typical dairy farms within the International Farm Comparison Network (IFCN). The IFCN is a network of dairy experts in many countries who strive to create a better understanding of

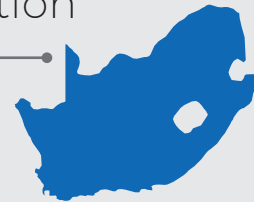
MORE INFO

World production
833 million tonnes

[96% = cow's milk + buffalo milk]



SA produces
0,4% of
global milk
production



Main producing countries (2017 change)






-  INDIA (↑ by 5,1%)
-  US (↑ by 2,2%)
-  PAKISTAN (↓ by 0,1%)
-  BRAZIL (↑ by 3,0%)
-  CHINA (↓ by 1,2%)

Figure 10: Estimated unprocessed milk production cost (US\$/100 kg ECM) per average farm in participating countries, 2017 (source: IFCN, 2018)

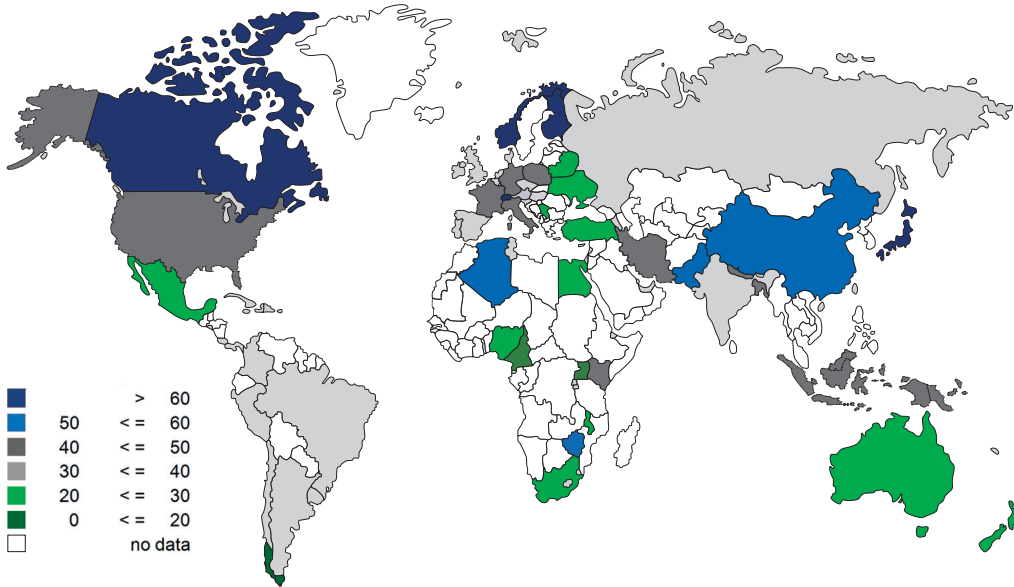
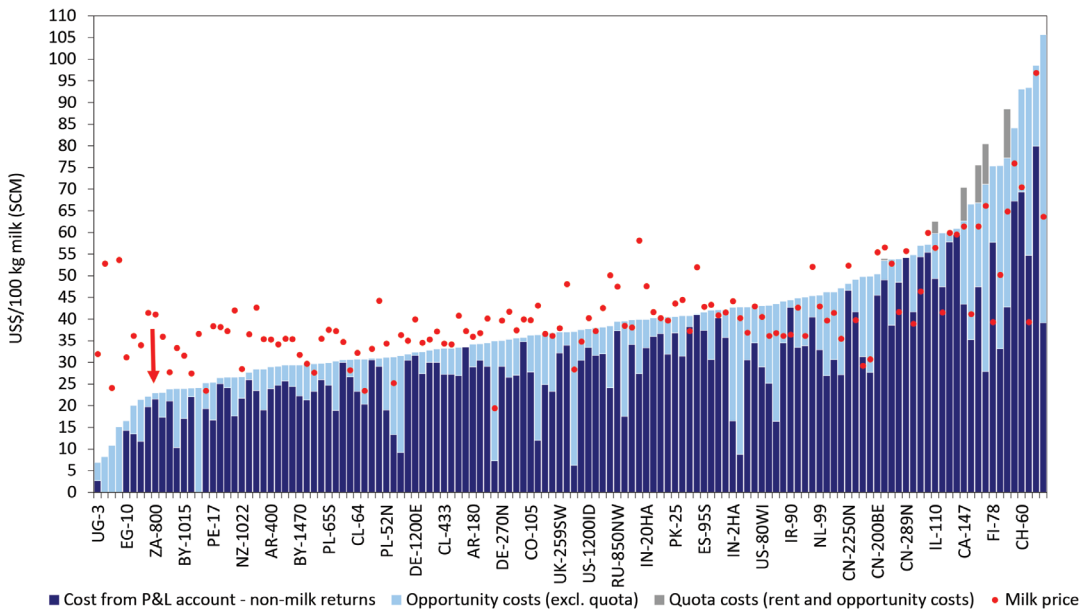


Figure 11: Estimated cost of unprocessed milk production per farm in US\$/100 kg ECM for average farms in IFCN analysis, 2017 (source: IFCN, 2018)



P&L - profit and loss account

Country by international country code and herd size, ZA 800 = ZA 800-cow herds.

milk production worldwide. Scientists from 103 countries contributed to the work of the IFCN in 2018. It analysed the production and cost of 177 typical dairy farms in 53 countries and published the results in the IFCN Dairy Report 2018. The comparison of farms is based on the actual income and cost figures for 2017. The MPO's participation in the work of the IFCN is partially sponsored by Milk SA.

“ Farm-produced feed is valued at a farm-gate price and not at production cost levels, and the farmer's own labour and management time is valued at comparable industrial rates.”

The IFCN cost comparisons are based on full economic cost. Farm-produced feed is valued at a farm-gate price and not at production cost levels, and the farmer's own labour and management time is valued at comparable industrial rates. The inclusion of opportunity costs creates a bias towards countries with very little or no opportunity costs for labour, and without a viable market for feed. The average cost level of the 177 farms evaluated by the IFCN in 2017 stood at US\$40.20 (R567.67) per 100 kilograms of solid-corrected milk (100 kg SCM), which is US\$1.80 (R25.42) above the 2016 level.

The highest increase of more than US\$4.00 (R56.48) was seen in Central and Eastern Europe Countries (CEEC) while costs remained relatively stable in Africa, Asia, and Oceania. Ten per cent of the farms analysed have a cost of milk production of equal to or higher than US\$60.00 (R847.27) per 100 kg SCM. These farms are found in Scandinavia, the Alpine region, Canada, and Japan. Thirty per cent of the farms analysed have a cost of milk production of equal to or lower than US\$30.00 (R423.64) per 100 kg SCM. These farms are mainly located in Africa, Latin America, and Oceania. Moderate cost of milk production between US\$30.00 (R423.64) per 100 kg SCM and US\$60.00 (R847.27) per 100 kg SCM are typically found in Europe, North America, and Asia. Compared to the previous

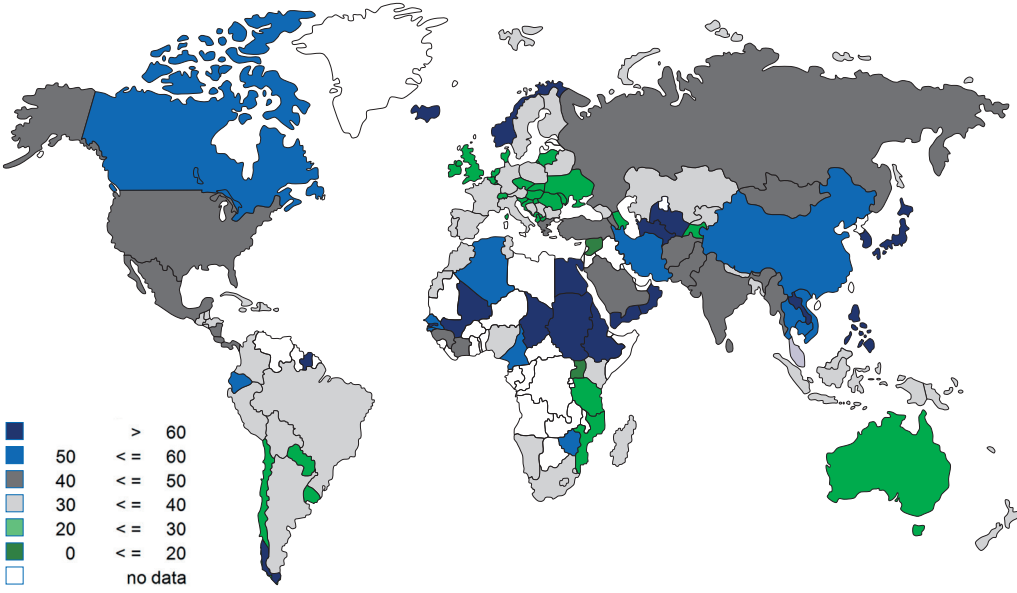
year, cost increased slightly between US\$1.00 (R14.12) and US\$3.00 (R42.36) on average per region.

Feed is the highest single cost component, contributing about 64% to total cost. Feed costs and the efficient management of feeding practices have a big impact on total costs and play a huge role in determining cost competitiveness.

Milk production costs for typical dairy farms, as analysed by the IFCN, are shown in Figure 11. In countries with very low milk production costs, low opportunity costs of labour and lower feed prices are the main drivers of cost competitiveness. In most of these cases milk is produced for own use and not for the market.



Figure 12: Estimated producer milk prices in various regions (US\$/100 kg ECM), 2017
(source: IFCN, 2018)



Producer milk prices

Key drivers of milk prices are the total milk supply, trade volumes in dairy products between countries, growing demand for milk, and in the case of prices in individual countries, the exchange rates.

The IFCN World Milk Price Indicator in 2017 increased by more than 30% compared to 2016. It reached an annual average level of US\$35.50 (R501.30) per 100 kg milk and thus half of the decrease in 2015 and 2016 was regained. At country level, prices ranged widely e.g. US\$19.50 (R275.36) per 100 kg solid-corrected milk (SCM) in Serbia to US\$96.90 (R1 368.34) per 100 kg SCM in Japan.

Milk prices increased in all the EU countries participating in the IFCN programme. There were four countries where the national milk price was below the IFCN World Milk Price Indicator: Serbia, Latvia, Belarus, and Armenia. The EU-weighted average milk price was US\$40.50 (R571.91) and thus nearly US\$11.00 (R155.33) higher than in 2016.

The upward shift in milk prices in 2017 was mainly driven by an out-of-balance supply and demand. While top exporters steadily increased production in 2017, top importers showed a limited level of production growth in 2017. Further to that, high prices for butterfat, triggered by a change in consumption patterns and accompanied by a higher demand, supported the increase of the world milk price. The distinct increase in the milk price and moderate changes in cost had a clear effect on farm profitability. Farm profit increased on average by US\$2.80 (R39.54) per 100 kg SCM. The highest growth was in Europe by US\$5.50 (R77.67) per 100 kg SCM while the more moderate increases were found in the Central and Eastern Europe Countries (CEEC), the Americas, Asia, and Oceania. When analysing the IFCN milk price data from 2007 to 2017, it seems that a new reality is taking effect. The IFCN World Milk Price Indicator showed an average level of US\$40.50 (R571.91) per 100 kg energy-corrected milk (ECM) between 2007 and an all-time peak US\$56.00 (R790.79) per 100 kg in February 2014. Doing the same calculation, but including the years up to 2017, the average has been shifted down to US\$34.00 (R480.12) per 100 kg ECM. After the peak of February 2014, the world milk price fell dramatically and never past the former long-term average line of US\$40.00 (R564.85) per 100 kg ECM.

“Key drivers of milk prices are the total milk supply, trade volumes in dairy products between countries, growing demand for milk, and in the case of prices in individual countries, the exchange rates.”

MORE INFO

LOWEST and HIGHEST cost countries in the world

Top 5 lowest cost

INDONESIA



SERBIA



TUNISIA



PERU



EGYPT



Top 5 highest cost

JAPAN



SWITZERLAND



ZIMBABWE



CHINA



FINLAND



Figure 13: Milk production density (l/km²) per district, 2016 (source: MPO estimates from October 2016 statutory survey)

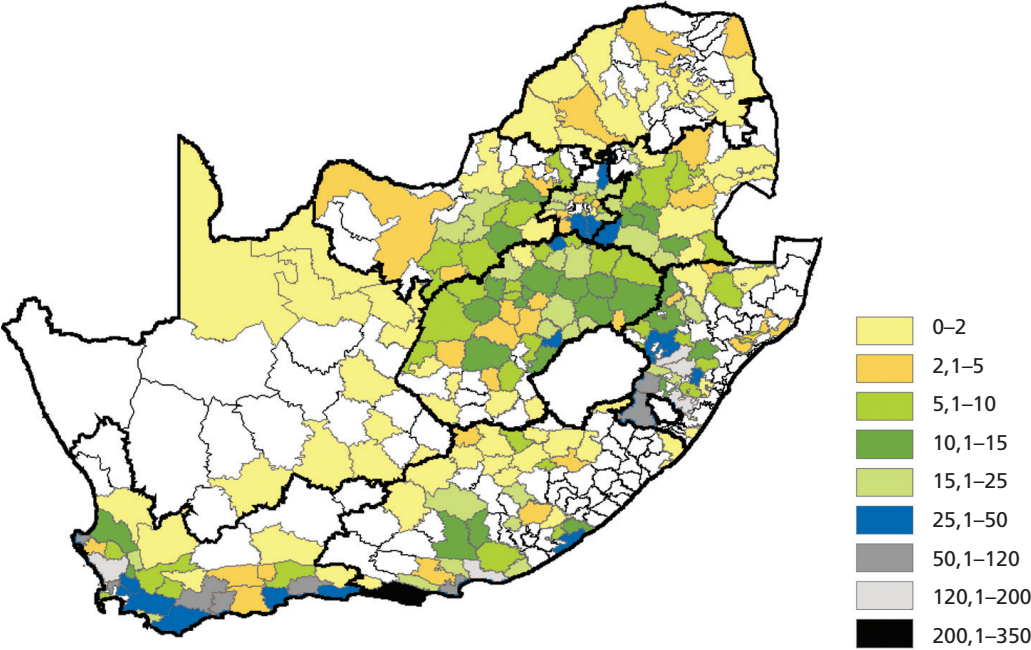
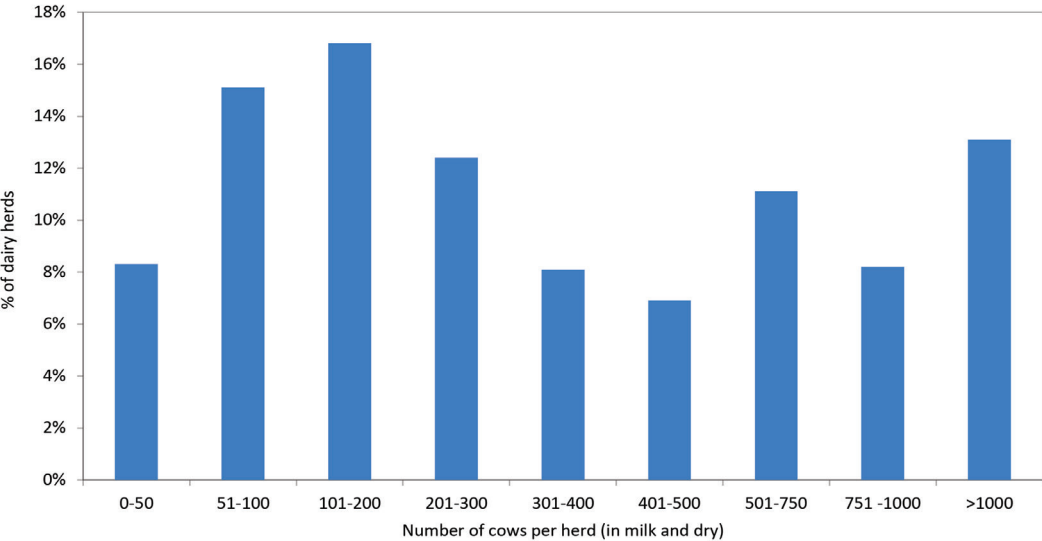


Figure 14: Size distribution of dairy cows per herd, 2018 (source: MPO estimates from October 2018 statutory survey)



SOUTH AFRICAN SITUATION



South African primary dairy sector

Structure of the primary dairy sector

The number of milk producers in South Africa decreased from 3 551 in January 2009 to 1 253 in January 2019. The number of producers per province is shown in Table 6. Since 2009, the number of producers has decreased by 65%. The largest percentage decrease in producer numbers occurred in the Northern Cape.

The trend towards higher production in the pasture-based areas has continued. The concentration of milk production per district is shown in Figure 13. Milk production per province, according to MPO estimates, taking into account the results of the October 2018 statutory survey, is shown in Table 7.

The number of cows varies widely among producers. The percentage distribution of herd size is shown in Figure 14.

“The number of milk producers in South Africa decreased from 3 551 in January 2009 to 1 253 in 2019.”

NEED TO KNOW



Number of producers

(↓65%)

Jan 2009

3 551

Jan 2019

1 253

Milk production

(↑31%)



2009

2 587 000 t

2018

3 411 000 t

Milk production per producer

(↑273%)



2009

729 t

2018

2 722 t

Table 6: Number of milk producers per province, 2009–2019 (source: MPO)

Province	Jan '09	Jan '11	Jan '12	Jan '14	Jan '15	Jan '16	Jan '17	Jan '18	Jan '19
Western Cape	795	683	647	529	533	502	481	419	402
Eastern Cape	387	314	283	264	262	251	244	212	201
Northern Cape	37	28	21	25	14	14	7	7	6
KwaZulu-Natal	373	323	322	281	267	253	247	221	212
Free State	884	601	535	389	328	280	249	206	165
North West	540	386	352	233	222	181	165	135	117
Gauteng	217	127	126	109	100	97	98	84	83
Mpumalanga	286	201	164	117	94	93	87	69	56
Limpopo	32	23	24	14	14	12	15	12	11
TOTAL	3 551	2 686	2 474	1 961	1 834	1 683	1 593	1 365	1 253

Figure 15: Cow density per district (cows/km²), 2016 (source: MPO estimates from October 2016 statutory survey)

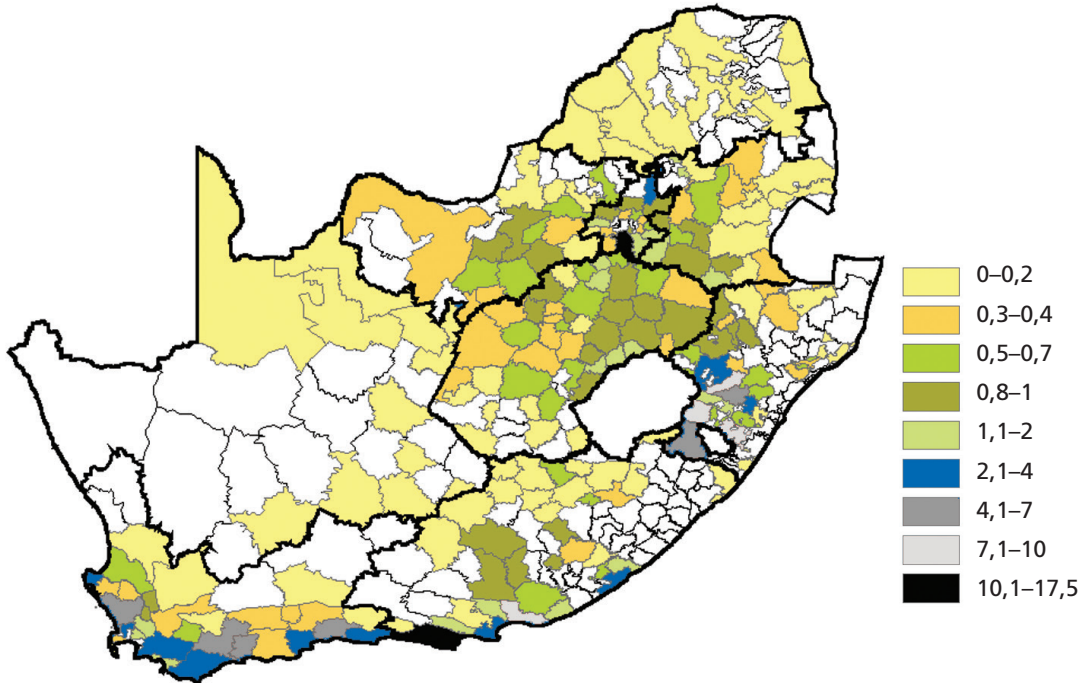
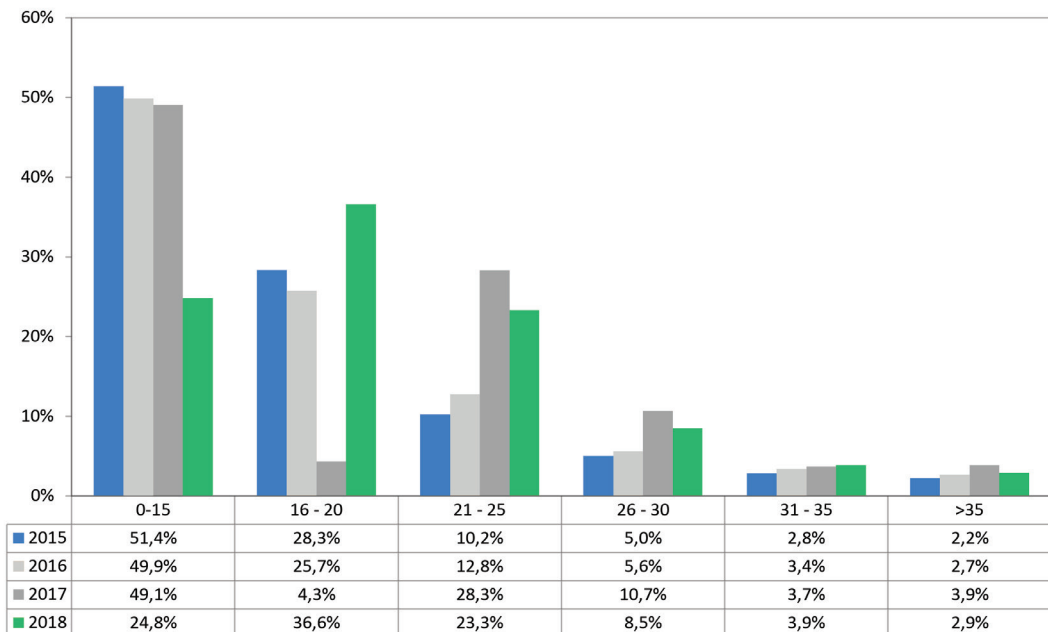


Figure 16: Distribution of herds based on daily production per cow in herd, 2015 - 2018 (source: MPO estimates from October 2018 statutory survey)

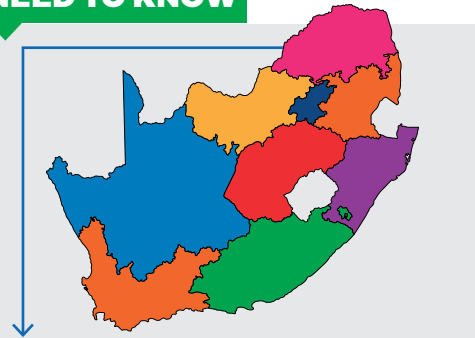


The average number of cows in milk per producer in the different provinces is shown in Table 7, and the concentration of cows per district in Figure 15.

Average milk production per cow per day was 21.0 l in 2018. 98 per cent of the unprocessed milk was delivered to the market. The balance was used for on-farm consumption. The distribution of herds on a production basis is shown in Figure 16.



NEED TO KNOW



Milk production per province, 2018 (percentage)

Western Cape	28,4
Eastern Cape	27,1
Northern Cape	0,1
KwaZulu-Natal	29,3
Free State	7,6
North West	2,1
Gauteng	2,5
Mpumalanga	2,4
Limpopo	0,5
Total	100,0

Table 7: Milk production per province, and cows in milk per producer, specific month in specific year (source: MPO estimates from October 2018 statutory survey)

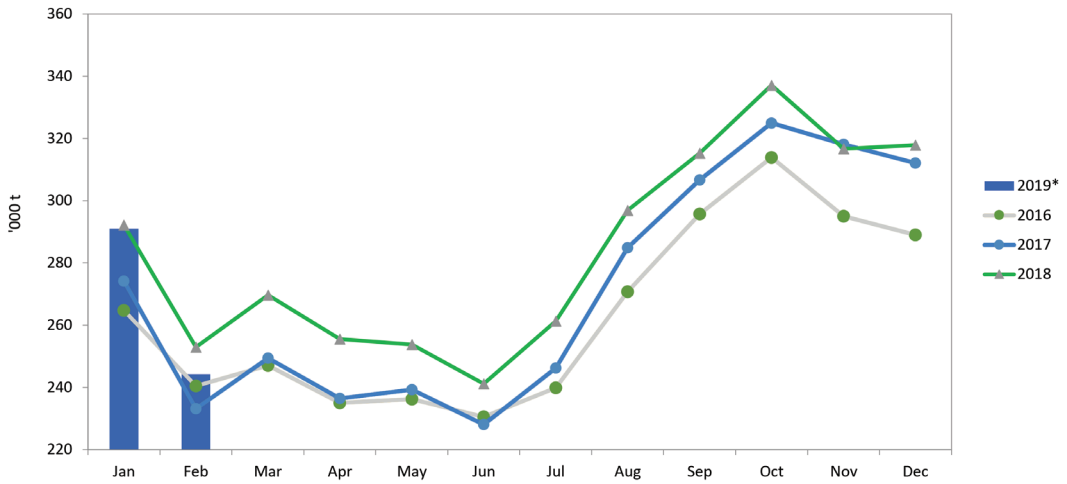
Province	Percentage distribution of milk production		Number of cows in milk per producer, 2018
	Sep 2009	Oct 2018	Mean
Western Cape	27,1	28,4	399
Eastern Cape	25	27,1	918
Northern Cape	0,4	0,1	100
KwaZulu-Natal	19,8	29,3	813
Free State	14	7,6	282
North West	5,3	2,1	119
Gauteng	3,4	2,5	153
Mpumalanga	4,5	2,4	216
Limpopo	0,3	0,5	165
TOTAL	100,0	100,0	482

Milk production

Annual milk production shows a steady linear upward trend over time. The total milk to market

for 2018 is 3 411 000 tonnes, 4.8% up on the previous year. Monthly milk purchases from 2016 to 2019 are shown in Figure 17.

Figure 17: South African monthly unprocessed milk purchases 2016–2019 (source: Milk SA)



*Estimate based on Milk SA sample

Figure 18: Annual unprocessed milk purchases, 2007–2018 (source: Milk SA)

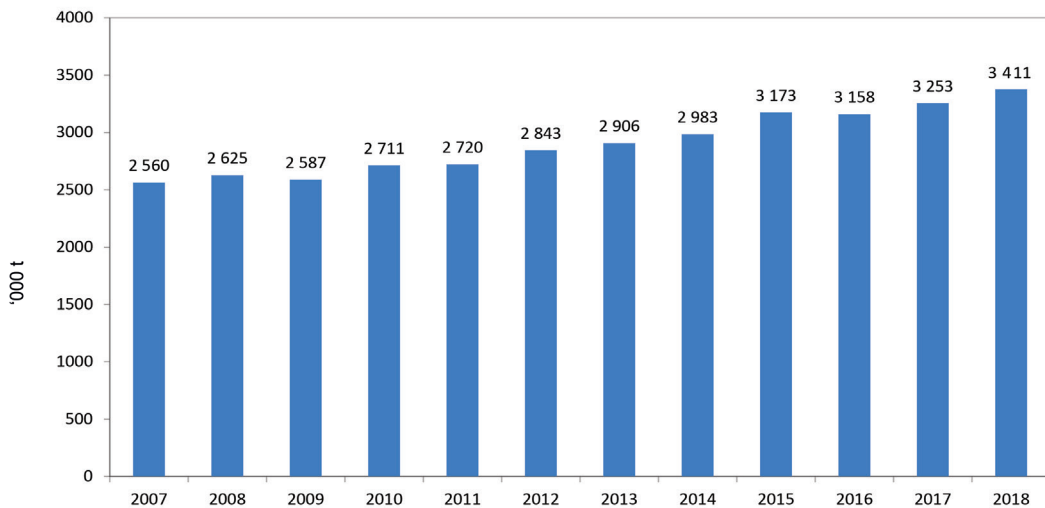


Table 8: Farm requisite price indices, base 2010 = 100 (source: DAFF)

Period	Machinery & implements	Material for fixed improvements	Intermediate goods and services	All farming requisites
2012	123.0	115.5	126.3	125.4
2013	132.2	122.5	132.7	134.1
2014	143.2	129.5	138.9	142.4
2015	151.7	138.9	147.4	147.4
2016	162.6	149.1	155.7	156.2
2017	169.1	155.6	162.4	162.9
CAGR* 2012-2017	6,6%	6,1%	5,2%	5,4%
Jan '14	135.6	132.0	139.2	138.4
Apr '14	141.1	132.2	144.1	143.1
Jul '14	147.5	124.3	146.3	145.4
Oct '14	148.7	129.5	142.7	142.8
Jan '15	145.9	137.9	144.2	144.1
Apr '15	148.7	146.7	146.1	146.5
Jul '15	150.4	138.5	148.5	147.9
Oct '15	159.4	138.9	149.8	150.4
Jan '16	157.8	144.5	152.0	152.0
Apr '16	161.2	154.5	154.5	155.3
Jul '16	161.8	148.7	156.9	157.1
Oct '16	171.8	148.7	159.3	160.3
Jan '17	164.8	150.0	160.0	160.1
Apr '17	166.1	163.7	158.7	159.8
Jul '17	166.7	154.1	163.1	163.1
Oct '17	178.9	154.8	168.2	168.6
Jan '18	171.0	156.9	165.8	166.0
Apr '18	170.6	170.0	162.9	164.1
Jul '18	180.4	166.2	170.8	171.7
CAGR* Jan '14-Apr '18	5,4%	6,1%	3,7%	4,0%

*Compound annual growth rate

Figure 19: Composition of the South African liquid products market on a volume basis, 2018
(source: industry estimate supplied by Milk SA)

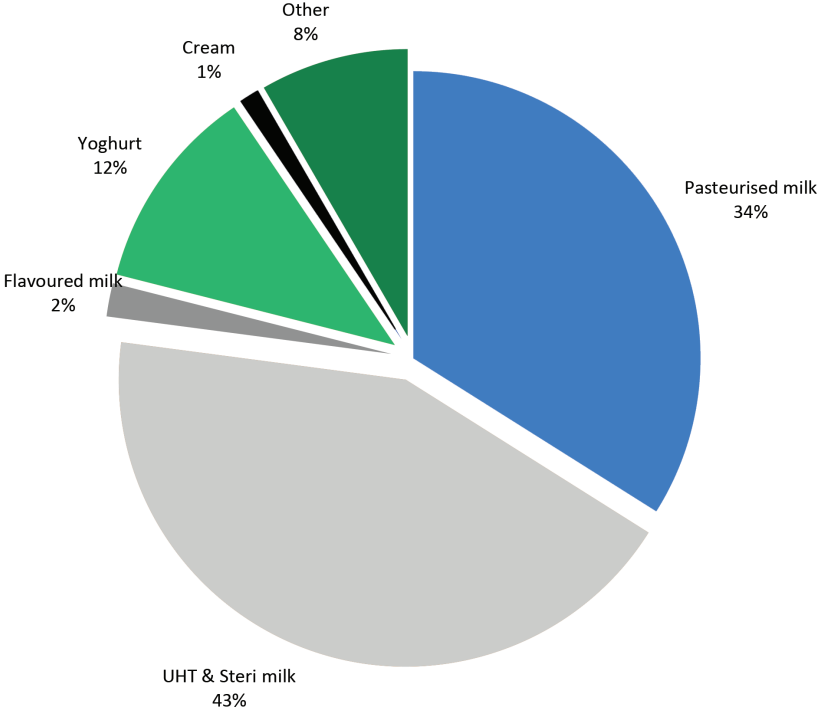
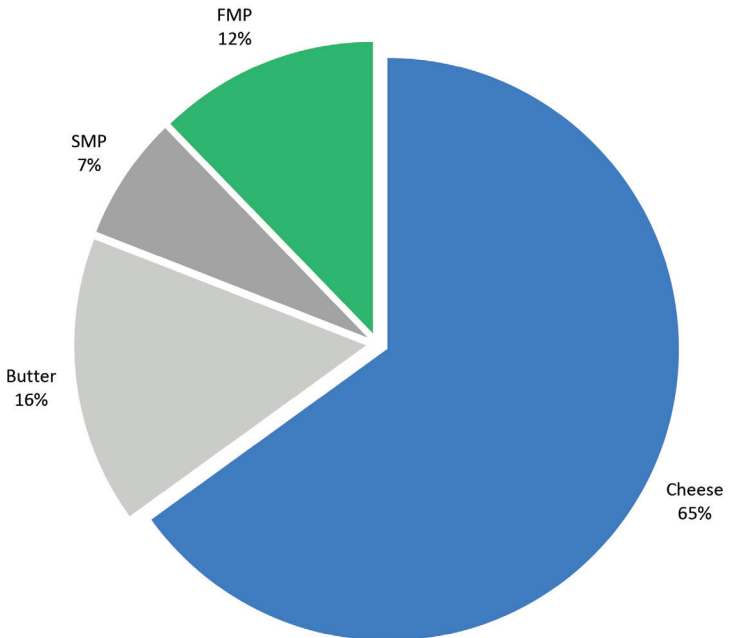


Figure 20: Composition of the South African concentrated products market on a mass basis, 2018
(source: industry estimate supplied by Milk SA)



South African secondary dairy sector

Structure of the secondary dairy sector

The South African secondary dairy industry consists of a few large processors operating nationally, a growing number of processors who operate in more than one region, a large number of smaller processors who operate in specific areas, and a number of milk producers who sell their own produce to retailers and consumers – known as producer-distributors (PDs). The number of PDs and milk processors per province is shown in Table 9. The number of producer-distributors decreased by 60% from January 2009 to March 2019. Milk processors decreased by 32% over the same period.

Production and consumption

The South African dairy market in 2018 is divided into 62% liquid and 38% concentrate products. Pasteurised liquid milk and ultra-high temperature (UHT) milk are the major liquid products, while hard cheese is the major concentrated product. The estimated composition of the markets for liquid and concentrated products is shown in Figures 19 and 20.

NEED TO KNOW



Nr of producers-distributors
(↓60%)

Jan 2009

170

Mar 2019

68

Nr of milk processors
(↓32%)



Jan 2009

190

Mar 2019

129

Dairy market composition

62% liquid

38% concentrate



Table 9: Number of producer-distributor (PDs) and milk processors per province (indicated according to position of head office), as registered with Milk SA, Jan'09-Mar '19 (source: Milk SA)

Province	Number of PDs						Number of milk processors					
	Jan '09	Aug '16	Apr '17	Jul '17	Mar '18	Mar '19	Jan '09	Aug '16	Apr '17	Jul '17	Mar '18	Mar '19
Western Cape	33	23	22	19	19	8	46	37	36	36	34	31
Eastern Cape	15	15	12	11	10	3	13	12	9	9	8	9
Northern Cape	11	9	9	8	7	6	3	2	1	1	1	2
KwaZulu-Natal	15	10	10	9	9	7	28	23	24	23	19	19
Free State	13	10	10	9	7	6	19	12	12	11	12	13
North West	7	3	3	3	2	3	16	15	14	13	12	11
Gauteng	37	25	21	20	19	18	34	38	38	37	37	37
Mpumalanga	17	9	8	8	10	7	4	7	6	6	6	3
Limpopo	22	7	8	8	9	10	6	4	4	4	4	4
Total	170	111	103	95	92	68	190	150	144	140	133	129

Milk processors refers to producers of processed milk and manufacturers of other dairy products.

Imports and exports

Total dairy product imports and exports are shown in Figure 21 and Figure 22. In 2018, 68 653 tonnes of products were imported and 45 257 tonnes exported.

The total composition of imports and exports in 2018 is shown in Figure 23 and Figure 24. On a mass basis, milk and cream were the most important products imported and exported.

Figure 21: Dairy product imports and exports, 2009–2018 (source: SARS data, as supplied by SAMPRO)

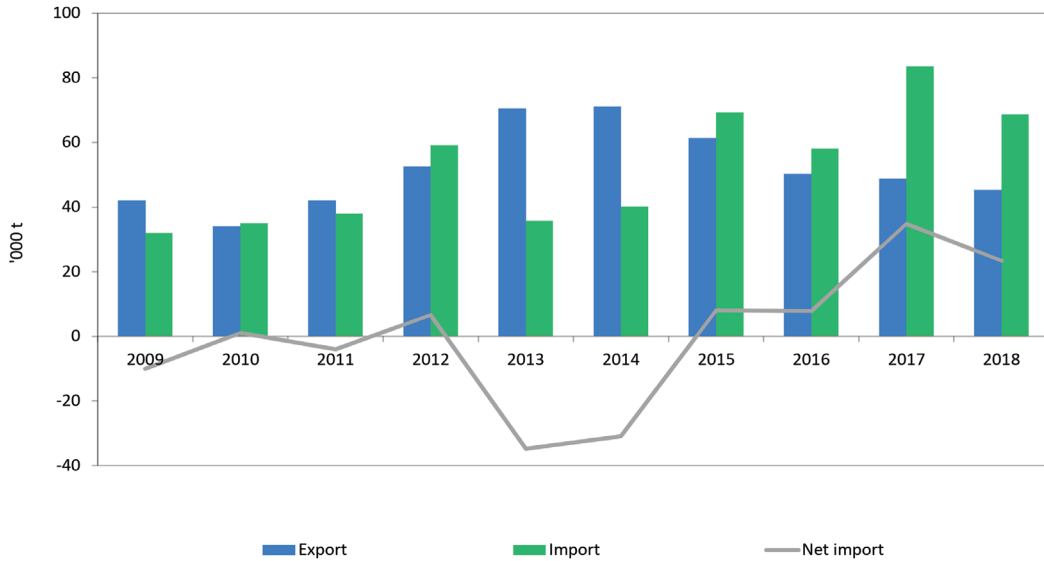


Figure 22: Dairy product imports and exports on milk-equivalent basis, 2009–2018 (source: SARS data, as supplied by SAMPRO)

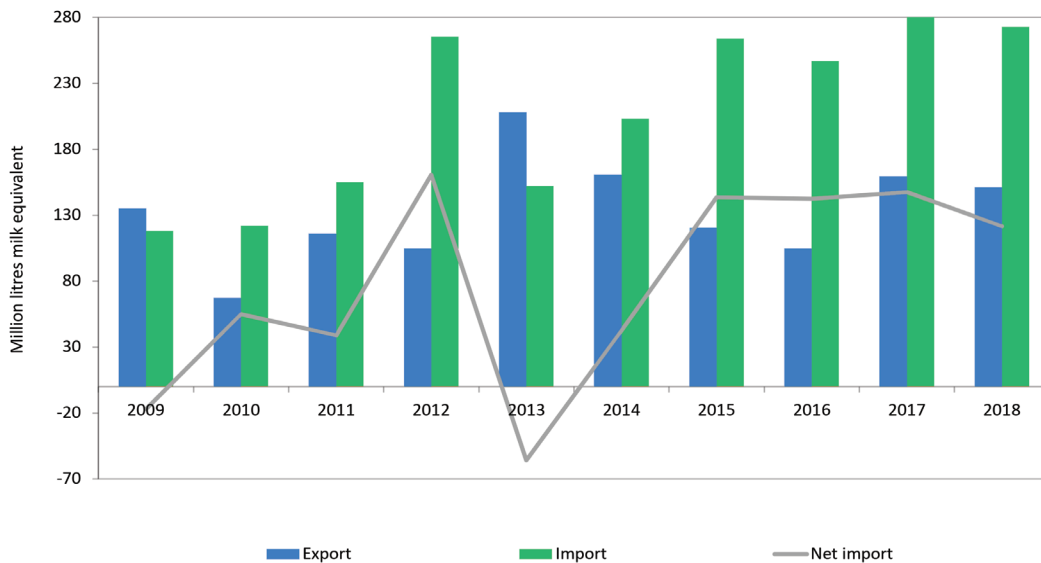


Figure 23: Percentage composition of imports on a mass basis, 2018 (source: SARS data, as supplied by SAMPRO)

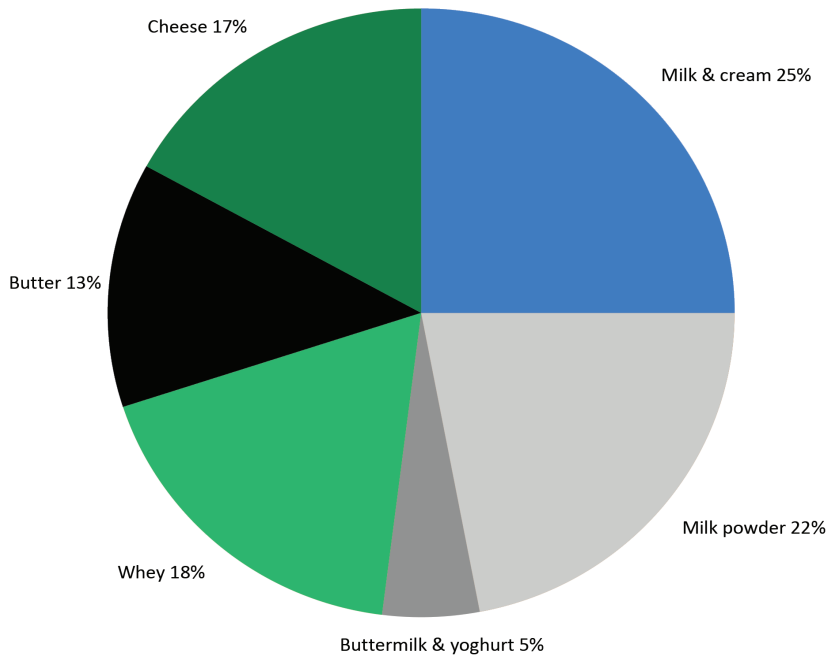


Figure 24: Percentage composition of exports on a mass basis, 2018 (source: SARS data, as supplied by SAMPRO)

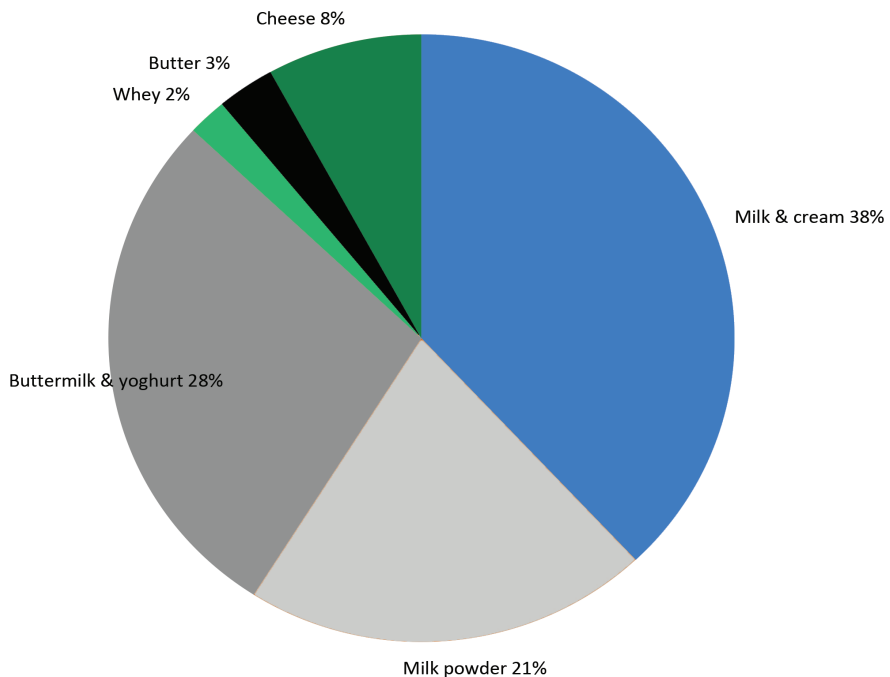
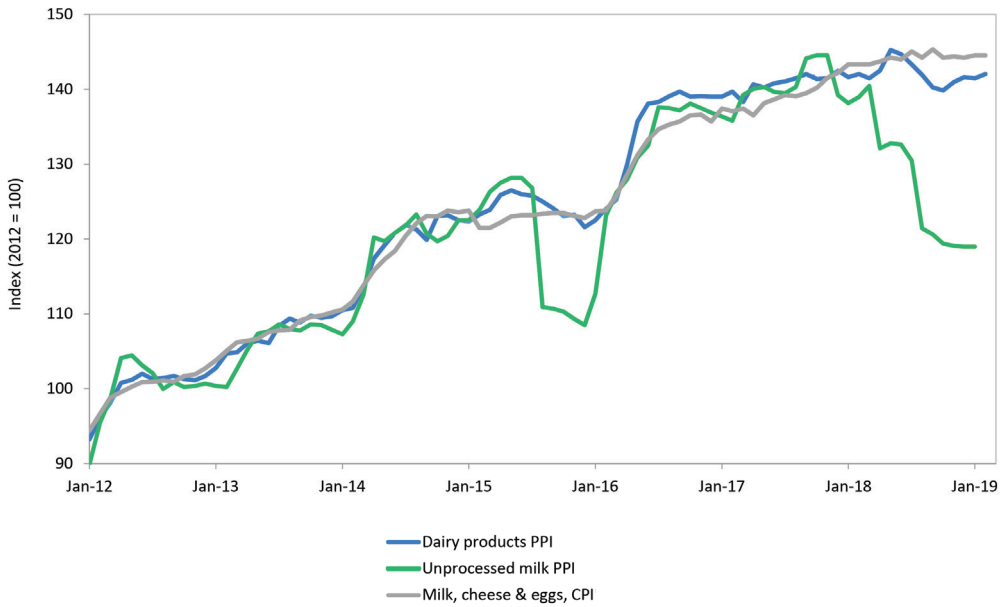


Figure 25: Price index of unprocessed milk at on-farm level, dairy products at processor level, and milk and eggs at consumer level, Jan 2012-Jan 2019 (source: Stats SA)



The South African dairy market is growing. Table 10 indicates changes in the size of the formal market for South African products, and changes in retail prices, as reported by Nielsen SA and collated by SAMPRO.

The sales quantities of all products, with the exception of fresh milk, butter, cream cheese, and cream, increased in the period. Total estimated liquid milk sales quantities (fresh and UHT) increased by an estimated 6,3% during the period.

The change in sales in a 12-month period for any product does not imply that quantities or prices changed at a uniform rate during the period.

The average retail prices of five of the nine products, with monitored retail performance, increased from December 2017 to December 2018. Price increases for these five products were lower than the inflation rate of 4,5% in the year ended in December 2018. In Table 10 quantity of retail sales for long-life milk (UHT milk) and maas grew by 14,5% and 15,9% respectively over the period. The sales price of the two products in December 2019 were lower than in December

2018. Pre-packaged cheese also registered strong growth of 6,8% and the price of it increased with only 2,3%.

Figure 25 shows the trend in the price indices of unprocessed milk at farm level, dairy products at processor level, and milk, cheese and eggs at consumer level. Except for a period in 2015 and 2018 when producer prices decreased relative to the other prices, prices follow the same general trend.

“The sales quantities of all products, with the exception of fresh milk, cream cheese, and cream increased in the period.

Total estimated liquid milk sales quantities (fresh and UHT) increased by an estimated 6,3% during the period.”

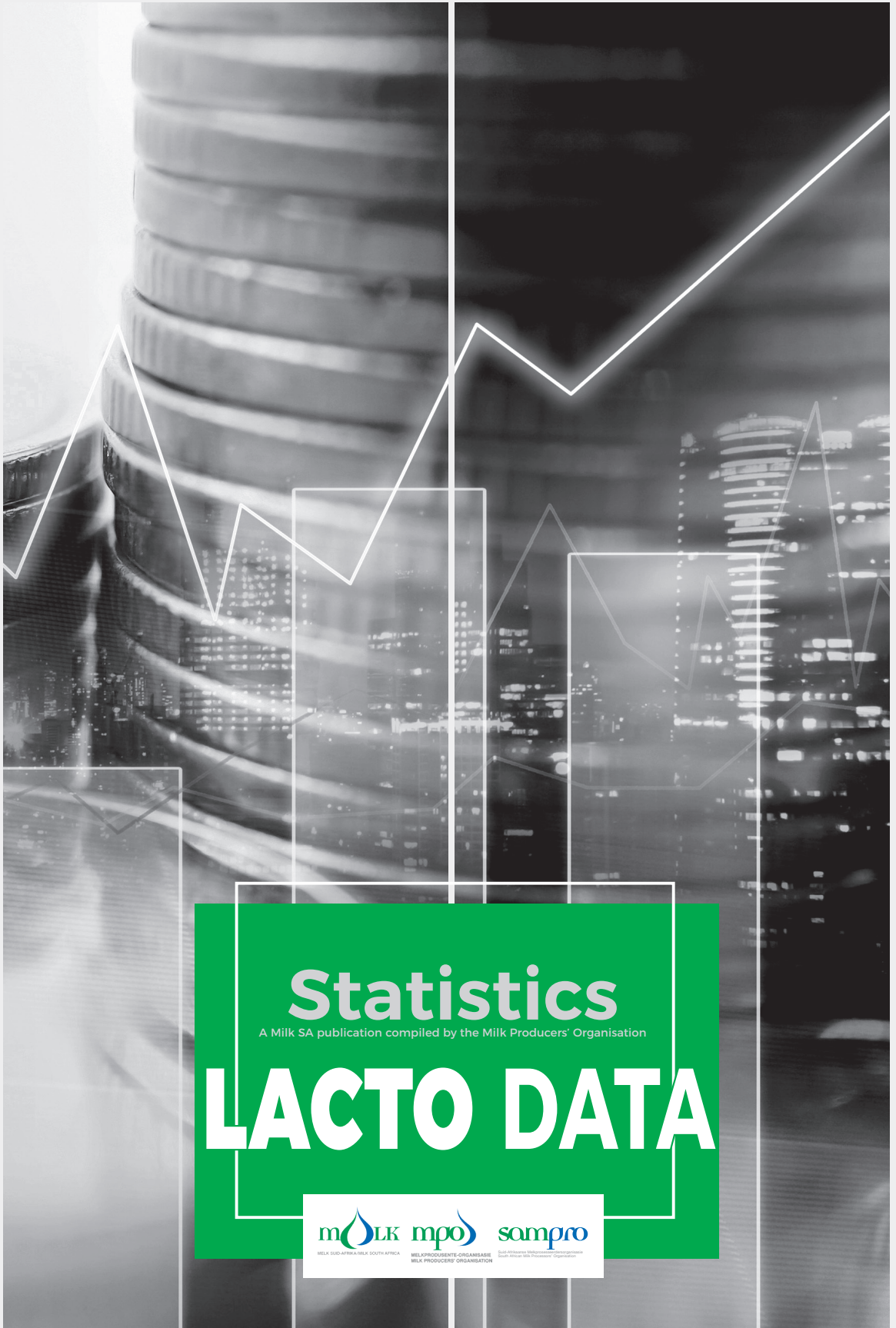
Table 10: Changes in the retail sales quantities from the year Jan 2017-Dec 2017 to the year Jan 2018-Dec 2018, and changes in the retail prices from Dec 2017-Dec 2018 of specific dairy products (source: Nielsen as supplied by SAMPRO)

Product	Change in demand (quantity) per cent	Change in retail price per cent
Fresh milk	-5,2	1,1
Long-life milk (UHT milk)	14,5	-4,1
Flavoured milk	5,8	3,9
Yoghurt	3,1	0,4
Maas	15,9	-6,6
Pre-packaged cheese	6,8	2,3
Cream cheese	-4,5	-0,3
Butter	1,5	-2,7
Cream	-2,8	3,2

ACRONYMS AND ABBREVIATIONS

CAGR	compound annual growth rate	Milk SA	Milk South Africa
CEEC	Central and Eastern Europe Countries	MPO	Milk Producers' Organisation
CNIEL	Centre National Interprofessionnel de l'Economie Laitère	PD	producer-distributor
CPI	consumer price index	PPI	producer price index
DAFF	Department of Agriculture, Forestry and Fisheries	SAMPRO	South African Milk Processors' Organisation
ECM	energy-corrected milk	SARS	South African Revenue Service
EU	European Union	SCM	solid-corrected milk
FAO	Food and Agricultural Organization of the United Nations	SMP	skimmed milk powder
FMP	full-cream milk powder	t	tonnes (a metric tonne, equal to 1 000 kilograms)
FOB	free on board	UHT	ultra-high temperature
IDF	International Dairy Federation	UK	United Kingdom
IFCN	International Farm Comparison Network	US	United States
IMF	International Monetary Fund	USDA	United States Department of Agriculture
LTO	Nederland Land- en Tuinbouw Organisatie (Dutch Federation of Agriculture and Horticulture)	WMP	whole milk powder





Statistics

A Milk SA publication compiled by the Milk Producers' Organisation

LACTO DATA



MILK SAID-APRICA/MILK SOUTH AFRICA



MILK PRODUCERS' ORGANISASIE
MILK PRODUCERS' ORGANISATION



South African Milk Producers' Organisation