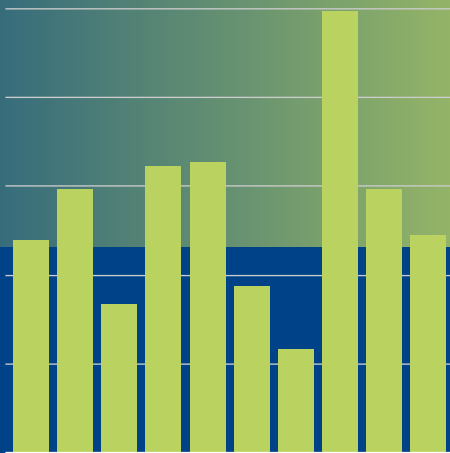


Dutch Dairy in Figures

2020

Market overview, dairy farming,
milk processing industry, sustainability,
trade and consumption



2020

The publication Dutch Dairy in Figures (Zuivel in Cijfers) provides an overview in figures of the key developments in the Dutch dairy sector in 2020 and is divided into eight topics:

- **The Netherlands: land of dairy • Economic importance**
- **Market overview • Dairy farming • Milk processing industry**
- **Sustainability • Trade • Consumption**

Tables with detailed statistical information can be consulted on the website of ZuivelNL (www.zuivelnl.org).

The figures for the year 2020 are provisional, but will only differ slightly from the final figures.

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THE NETHERLANDS: LAND OF DAIRY

Modern sector

The Netherlands is known worldwide as a dairy country. A long tradition of milk, butter and cheese production and consumption and the typical pasture landscape with cattle and windmills is inextricably connected with the perception of our country. Behind this image lies a modern sector, with consideration for people, animals and the environment. It is one of the largest and most vital agricultural sectors in the Netherlands and contributes significantly to the Dutch economy.

The Dutch dairy sector is one of the frontrunners in the international dairy world. As a result, the sector has a strong image and good access to important (growth) markets. Greater efficiency on dairy farms and in the production locations remains necessary from a cost price perspective and in order to remain internationally competitive. Distinctive product quality, food safety, animal health, animal welfare and sustainable development are important prerequisites in that respect. The professionalism of dairy farmers, in the dairy processing industry and in supplying sectors is decisive for the successful development of the industry.

End of milk quota system has major impact

The abolition of the milk quota system at the end of March 2015 and the generally promising outlook for the global dairy market gave a boost to new investments in dairy farming and the dairy processing industry, aimed at capacity growth through modernisation, expansion and new construction. However, the strong growth in dairy farming, and thus an extension in the dairy herd, created new challenges in the years that followed, which appear to be limiting growth.

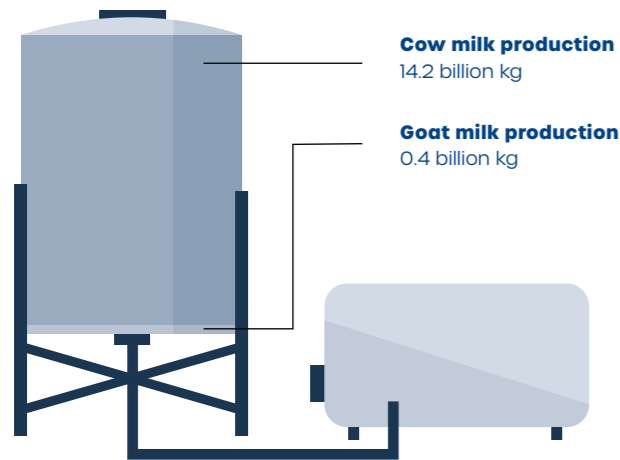
When in the years 2015, 2016 and 2017 it turned out that the phosphate production ceiling set by the European Commission had been significantly exceeded for the Netherlands, drastic measures were taken. The effect of a phosphate reduction plan drawn up by the industry in 2017 and a phosphate rights system introduced by the government in January 2018 was that in 2018 dairy farming was back in the position where it stayed within the applicable phosphate production limits. In 2020, phosphate production dropped even more (-2.0%). Nitrogen continues to be a challenge. While the nitrogen emissions initially fell in the previous

years as a result of a decline in the dairy herd, Statistics Netherlands once again reported an increase (+3.6%) for 2020, which led to the permitted sector ceiling being exceeded. Factors that played a role in this included a slight growth in the dairy herd, choices in feed composition and a higher average milk yield. In the context of the broader discussion about nitrogen in the Netherlands, this development has put extra pressure on dairy farming in relation to development space for other economic sectors.

Oriented towards the future through economically and environmentally responsible developments

The coming years Dutch dairy farming will continue to focus on healthy and balanced developments within the environmental constraints. The further reduction of nitrogen and greenhouse gas emissions are important points. Climate measures, greenhouse gas reduction and energy policies in particular, have an increasing impact on dairy companies. Both the dairy processing industry and the dairy farming sector want to contribute in an economically responsible manner to realising the national climate objectives that follow from the Paris global climate accord (2015).

MILK PRODUCTION



1.6 million
Dairy cows



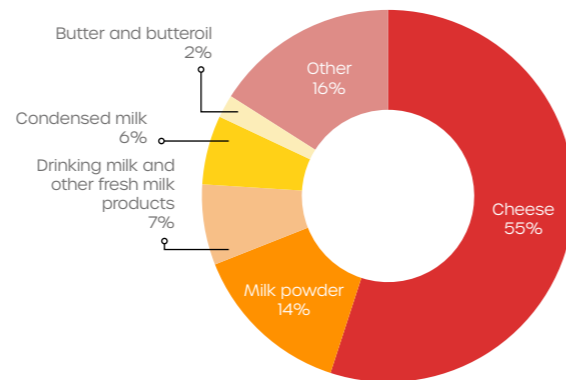
15,731
Dairy farms
with cows

561
Dairy farms
with goats

NUMBER OF DAIRY FARMS IN THE NETHERLANDS



MILK PROCESSING



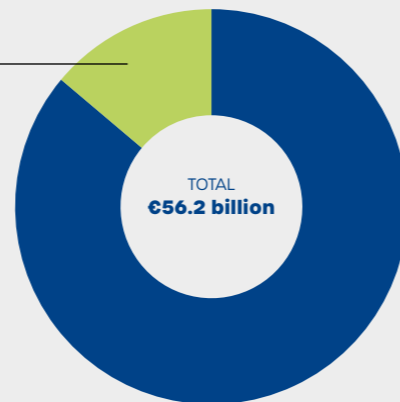
25
Milk processing
companies

52
Dairy plants



CONTRIBUTION OF AGRO & FOOD TO THE ECONOMY

€7.8 billion
Share
dairy industry



EMPLOYMENT DAIRY FARMING AND MILK PROCESSING INDUSTRY

47,000
fte



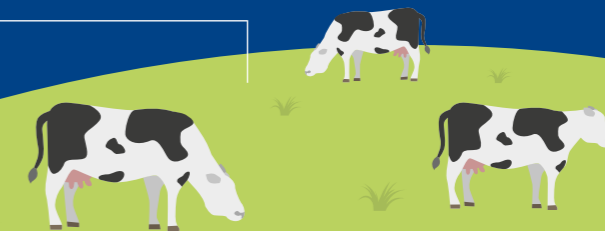
TOTAL SURFACE AREA
GRASSLAND AND MAIZE
1.1 MILLION HECTARES

THIS IS **26.4%** OF THE
SURFACE AREA IN THE
NETHERLANDS

EXPORT REVENUES
€7.6 billion

6.7% contribution to trade surplus

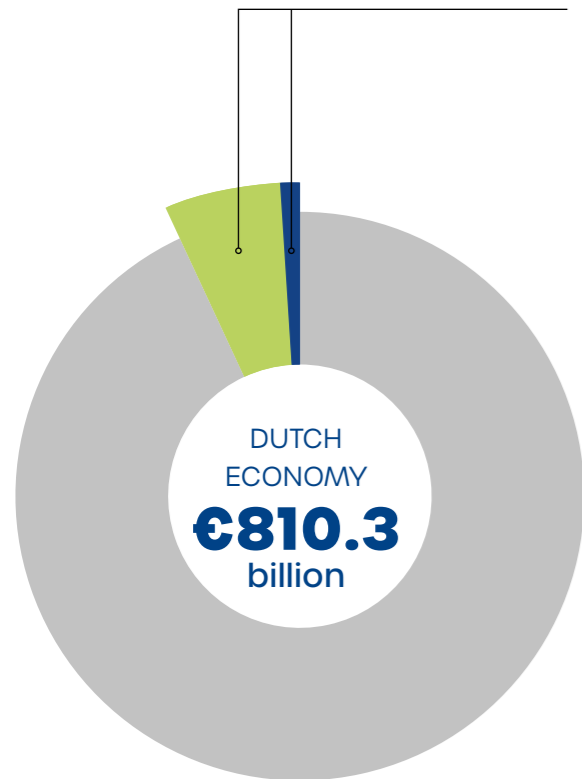
83.7%
OUTDOOR GRAZING
AT DAIRY FARMS



Dutch dairy at a glance

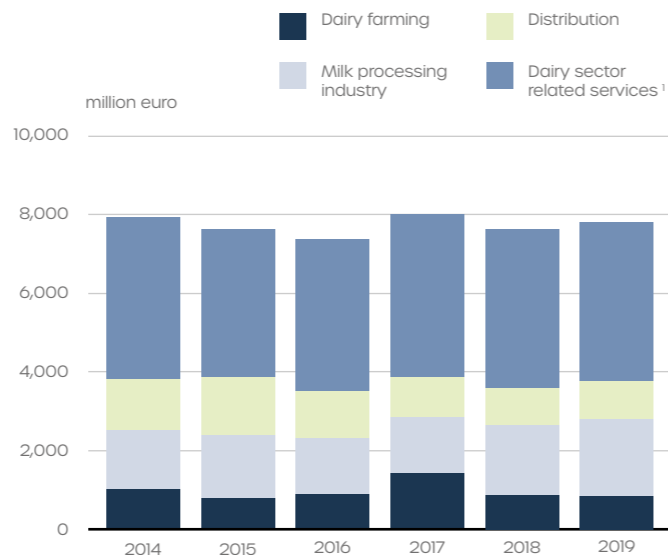
Economic importance

CONTRIBUTION OF AGRO & FOOD TO THE ECONOMY IN 2019



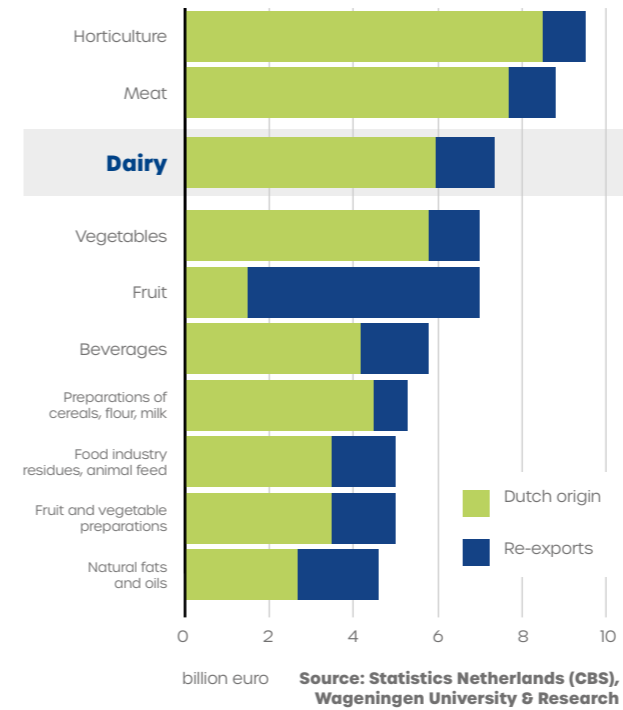
Agro & Food contributes **€56.2 billion (6.9%)** to the Dutch economy, of which **€7.8 billion (1.0%)** relates to dairy.

ADDED VALUE DUTCH DAIRY COMPLEX



¹ Among other agricultural and financial services, utilities and employment agencies
Source: Wageningen University & Research

EXPORT REVENUES AGRICULTURAL PRODUCTS



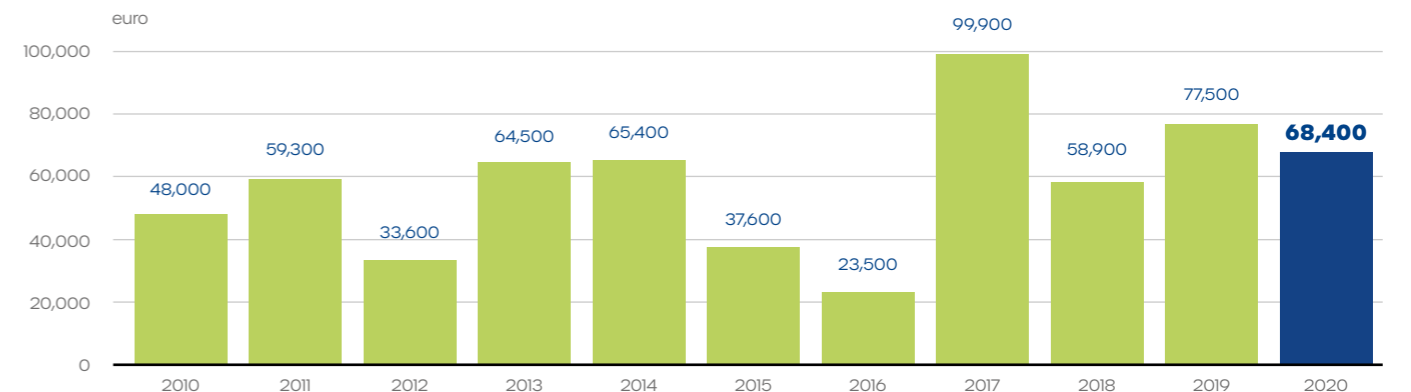
DAIRY EXPORT REVENUES

billion euro

	Dutch origin	Re-exports	Total
Milk and cream	0.5	0.1	0.5
Concentrated milk products	1.2	0.2	1.4
Fermented milk products	0.1	0.0	0.1
Whey products and milk protein concentrates	0.3	0.1	0.4
Butter and butteroil	0.7	0.5	1.2
Cheese	3.2	0.5	3.7
Total	6.0	1.4	7.3

Source: Statistics Netherlands (CBS)

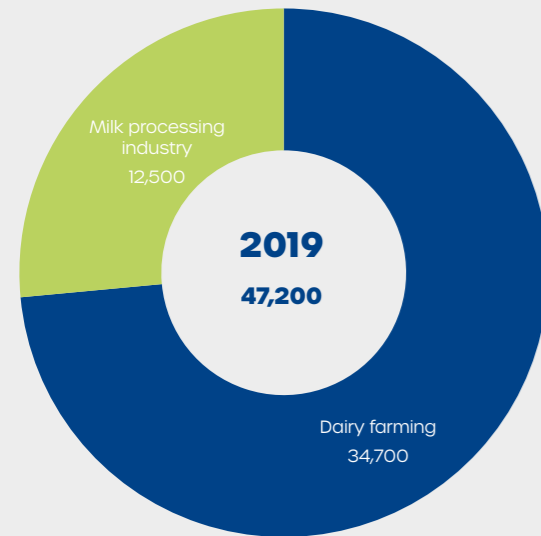
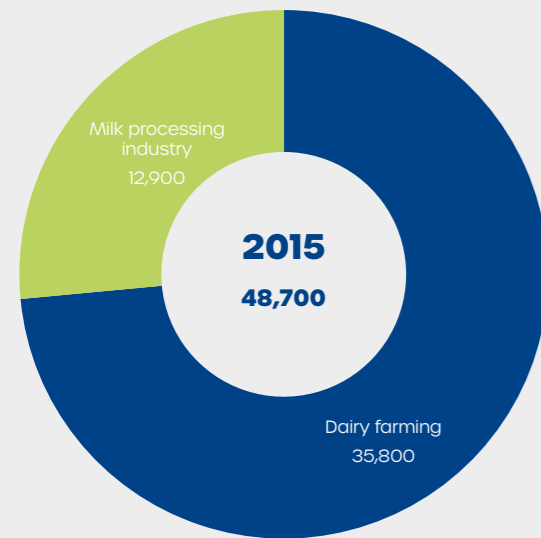
DAIRY FARMS - INCOME DEVELOPMENT PER FARM



Source: Wageningen University & Research

EMPLOYMENT DAIRY FARMING AND MILK PROCESSING INDUSTRY NETHERLANDS

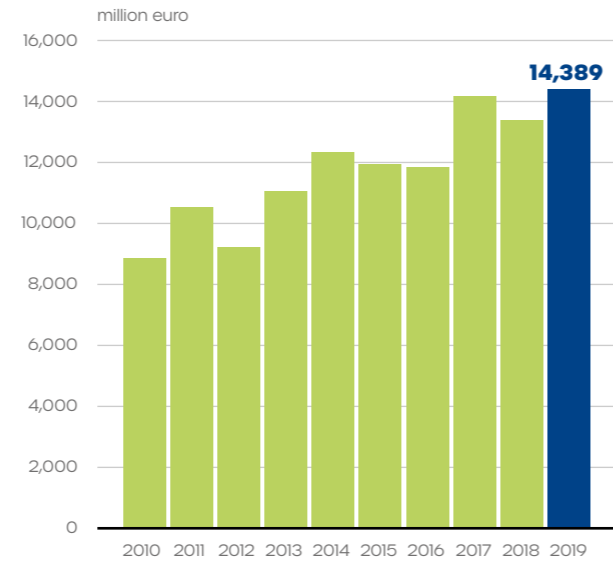
fte



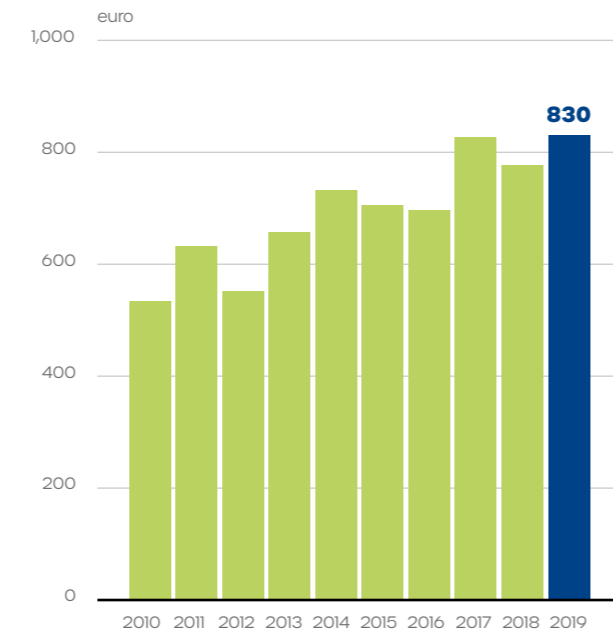
Source: Eurostat, Wageningen University & Research, ZuivelNL

NET TURNOVER MILK PROCESSING INDUSTRY NETHERLANDS ²

NET TURNOVER



NET TURNOVER PER CAPITA IN THE NETHERLANDS



² Including production of ice cream Source: Statistics Netherlands (CBS)

IMPORTS

billion euro

TOTAL (all products)	424.6
Agricultural products	65.2
Of which dairy products ³	3.6

TRADE BALANCE

POSITIVE TRADE BALANCE

billion euro

TOTAL (all products)	58.4
Agricultural products	27.2
Of which dairy products ³	3.9

EXPORTS

billion euro

TOTAL (all products)	483.0
Agricultural products	92.5
Of which dairy products ³	7.6

³ Cheese, butter and butteroil, fermented milk products, concentrated milk, milk and cream, whey and whey products and products with milk constituents (HS-codes 0401-0406 and 17021)

Source: Statistics Netherlands (CBS), Eurostat

Market overview

Market development

In 2020, the dairy market was severely affected by the COVID-19 pandemic, which had a huge impact on the global economy and consumer behaviour. Measures taken by governments all over the world to stop the spread of the COVID-19 coronavirus have created a lot of economic uncertainty. From February onwards, this led to significant price reductions across the board.

As more people were mandatorily confined to their homes, dairy sales through the retail channel increased significantly. At the same time, the increase in the number of people working from home and the temporary closure of food and beverage establishments and restaurants led to a sudden and large downturn in the demand in the food service channel.

In May, the market seemed to have recovered from the initial shock caused by COVID-19, allowing butter, milk powder and cheese prices to recover somewhat during the year. By the end of 2020, the price levels for most products had not yet reached the pre-crisis levels and at the consumer level, the major spike in supermarket sales could ultimately not compensate for the losses in other

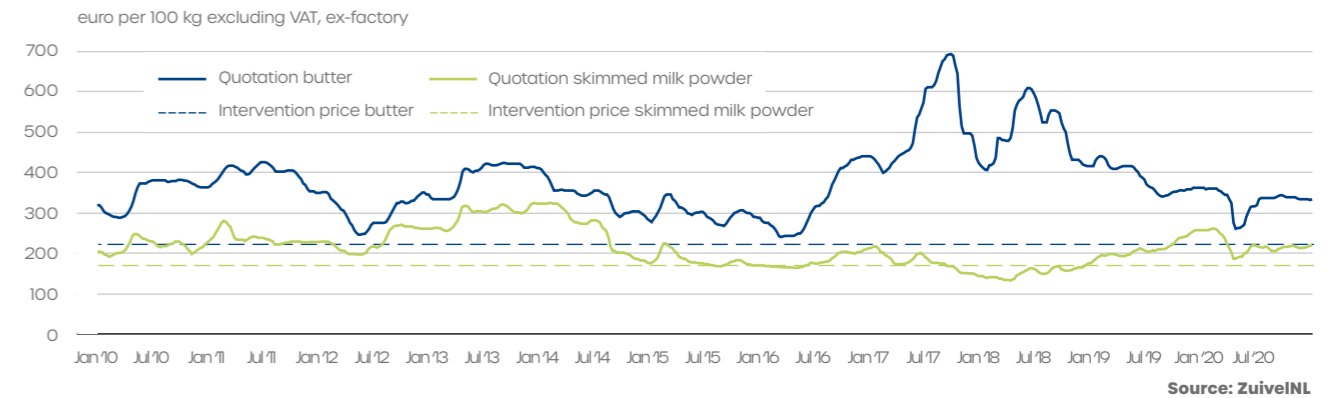
market segments. Although on balance the sales volume had barely been disrupted, 2020 was a year in which the dairy industry saw a relatively large part of its market value evaporate.

The year had a good start, with stable butter prices at a reasonable level, room for further price increases for skimmed milk powder and relatively high cheese prices. The situation changed drastically from February. COVID-19 caused insecurity in the market and buyers became hesitant, which weakened prices. An additional problem in the international trade was the shortage of containers due to logistics disruptions in China caused by COVID-19. Initially, the prices of protein-rich products such as skimmed milk powder dropped faster than the prices of butter and whole milk powder, despite the fact that Asia's demand had remained relatively high. In this segment, competition from the US also played a role. In the second half of March and at the start of April, there was an increase in the rate at which the prices of butter and whole milk powder dropped. At the lowest point in April, the prices of butter (-29%), whole milk powder (-17%), skimmed milk powder (-29%) and whey powder (-15%) were far below their average prices in

January 2020. In the course of April, the panic disappeared and calm returned to the market. The rest of the year was characterised by price recovery.

Flanking government policy certainly contributed to that recovery. In May, the European Commission launched a private storage scheme for butter, skimmed milk powder and cheese, which contributed to more stability in the market and price recovery. The US set up a broad nationwide food-aid programme, which included dairy. That ultimately led to increases in the prices of local dairy products. That development slowed down dairy export from the US, which benefited international pricing. In the end, the average price level for protein-related products such as skimmed milk powder (+3%) and whey powder (+2%) in 2020 was still slightly higher than in 2019, though it should be noted that this reference year for these products was a relatively weak year. The average prices of butter (-15%) and whole milk powder (-6%) were, however, clearly lower. In 2020, the average cheese prices remained steady (+1%), though it must be noted that products such as foil cheese were clearly affected by the disappearance of the out-of-home channel.

DUTCH QUOTATION FOR BUTTER AND SKIMMED MILK POWDER



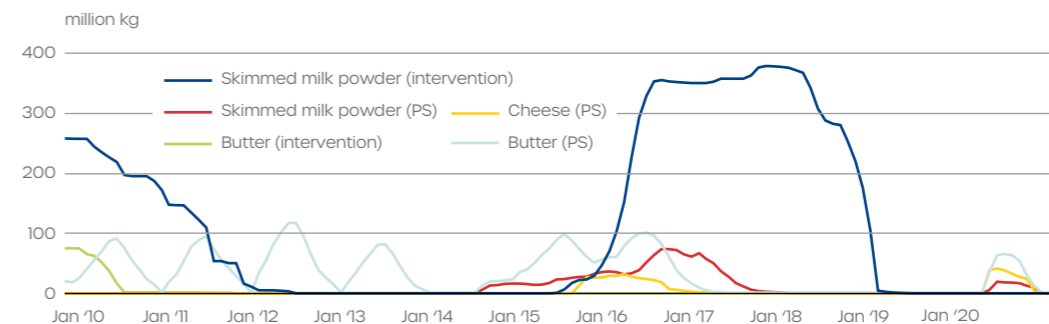
DEVELOPMENT MILK DELIVERIES IN LEADING EXPORTING COUNTRIES

Argentina, Australia, Brazil, Canada, Chile, EU-28, New Zealand, Turkey, Uruguay and USA

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Milk deliveries (x billion kg)	301	310	316	318	331	337	336	342	346	347	354
Relative development compared to previous year	2.2%	3.1%	2.2%	0.4%	4.2%	1.8%	-0.3%	1.8%	1.4%	0.1%	2.0%

Source: Eurostat, RVO.nl, national statistics

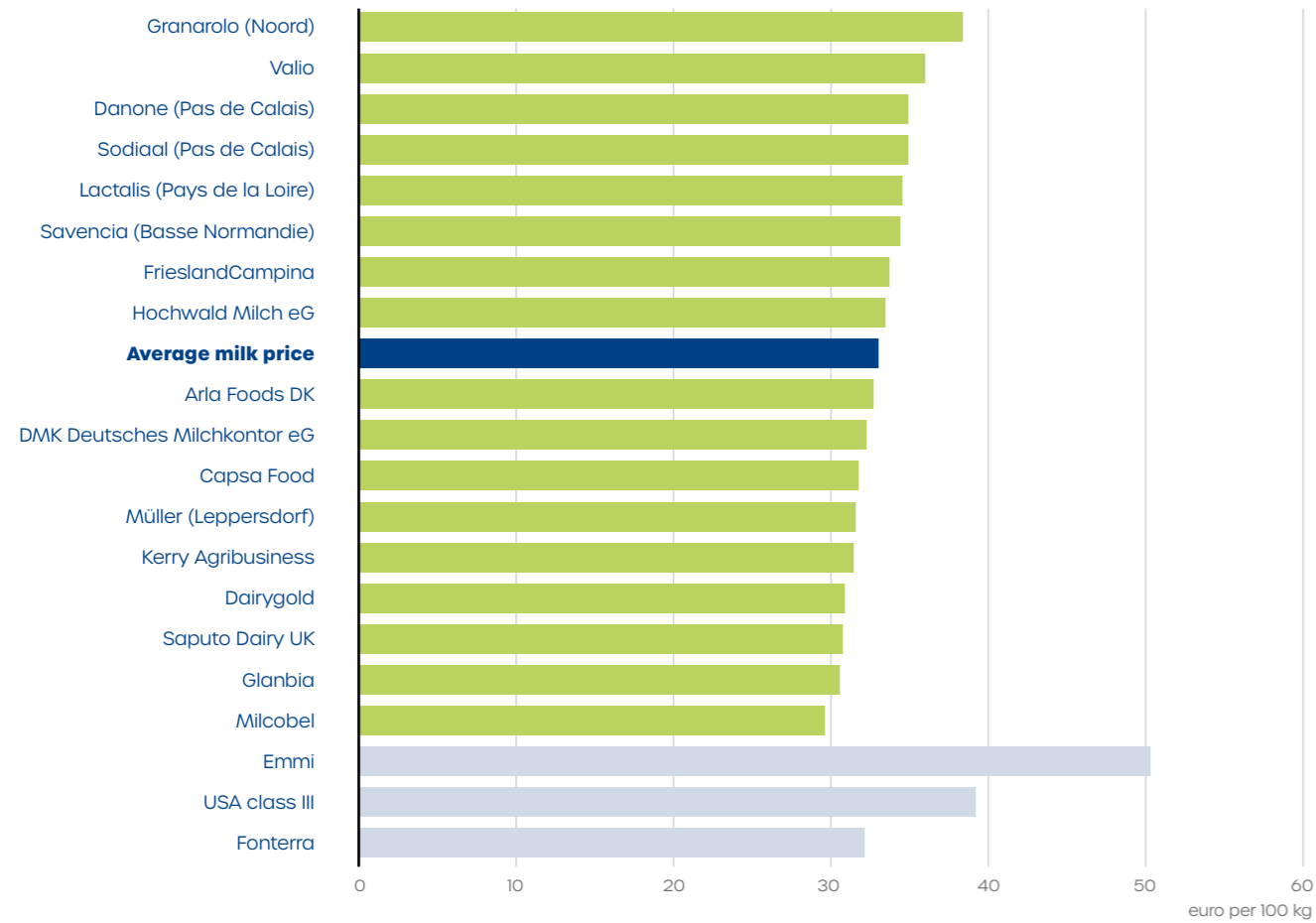
EU-28 STOCKS ¹



¹ PS: Private Storage

INTERNATIONAL MILK PRICE COMPARISON

12 month average over January-December 2020 (excluding supplementary payments) ²



²Prices for standard milk with 4.2% fat and 3.4% protein with an annual delivery of 1,000,000 kg milk (excluding VAT, excluding supplementary payments and excluding premiums for special milk flows)

Source: LTO International Milk Price Comparison, ZuivelNL

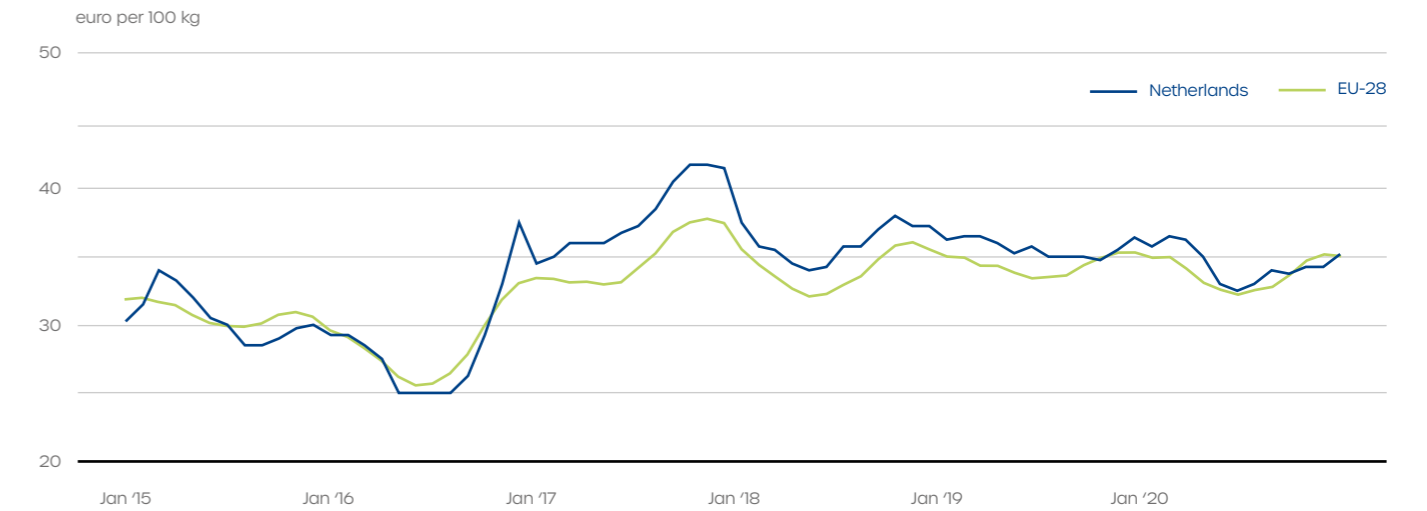
Paid milk prices

From April onwards, the developments in the milk prices paid in the Netherlands reflected the fall in prices in the dairy market caused by the COVID-19 crisis. The price of milk reached its lowest point in June, after which some slight

recovery followed rather quickly. However, the pre-crisis levels were not achieved during the further course of the year. On average, the milk price level was ultimately more than 3% lower than the previous year.

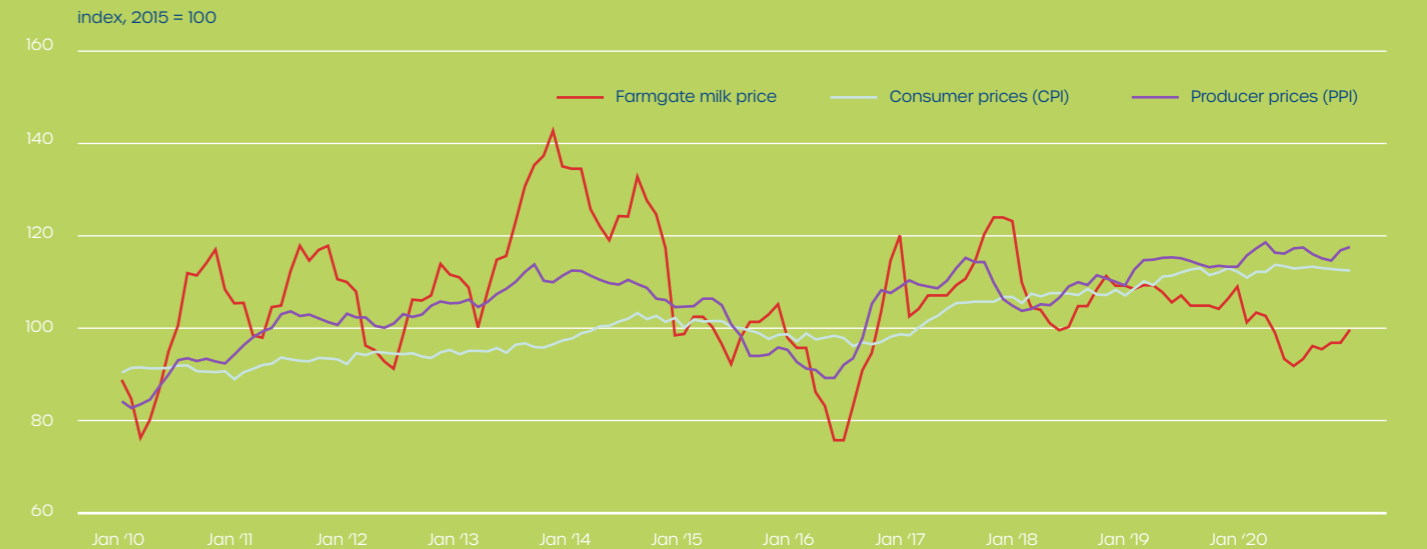
This disappointing milk yield combined with the sharp increase in costs of, for example, concentrated feed, had a negative impact on the returns achieved by dairy farms. This made 2020 another difficult year for dairy farmers.

MONTHLY MILK PRICES PAID IN THE NETHERLANDS AND EU-28



Source: AHDB, Milk Market Observatory

PRICE DEVELOPMENT DAIRY PER LINK IN THE CHAIN IN THE NETHERLANDS



Source: Statistics Netherlands (CBS), Wageningen University & Research

Dairy farming

Milk production

The slight drop in the Dutch milk production that occurred in 2018 and 2019 did not continue in 2020. Dutch milk production rose by 1.2% to a volume of almost 14.2 billion kg. More than 30% of this increase was the result of the leap year effect, and the rest reflects, in particular, the development in the size of the dairy herd, which after several years of contraction owing to changes in the phosphate policy, showed modest growth (+1%).

According to Statistics Netherlands, at the beginning of April 2020 there were 1.59 million dairy cows and cows in calf in the Netherlands, 15 thousand more than in 2019. This growth in the dairy herd was for the most part (almost 80%) responsible for the growth in the milk production. The rest was realised by means of a further increase in the average milk yield per cow. In 2020,

the average was 8,900 kg, which is a fraction higher than in the previous year (+0.3%).

Scale

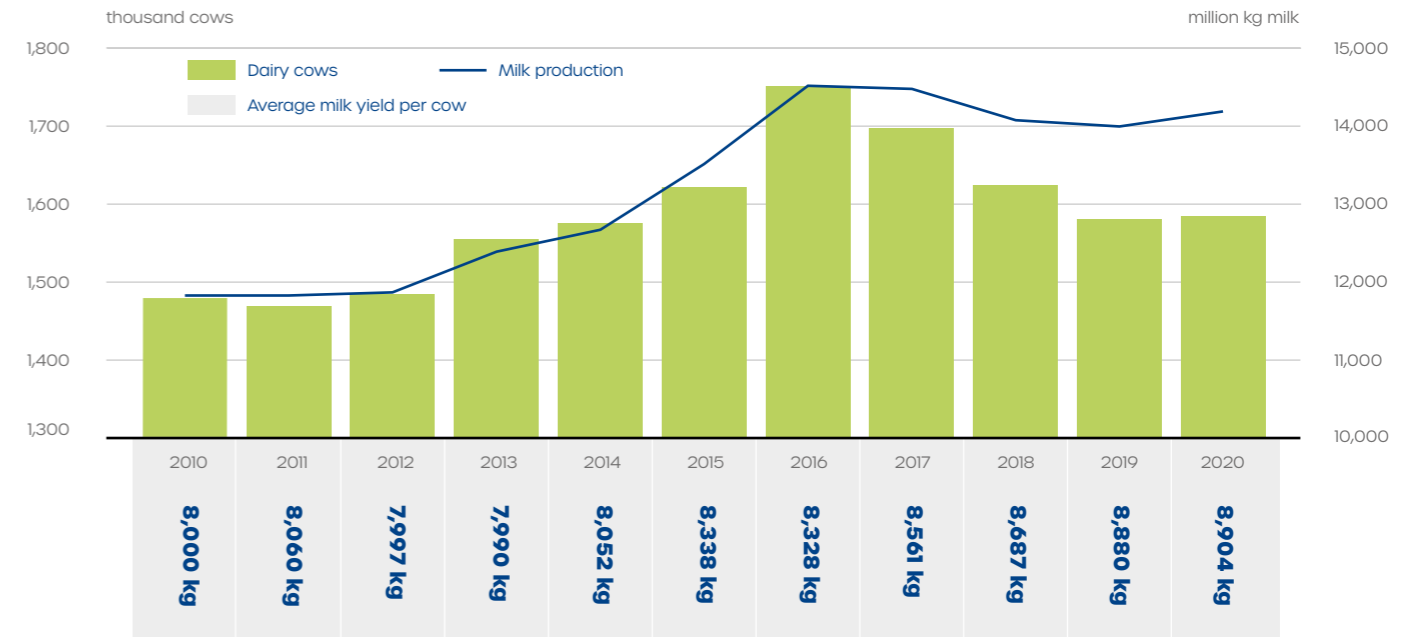
For decades, the structural development in the dairy farming sector has been characterised by a declining number of dairy farms. In the period from 2010 onwards, on average more than 2% of businesses stopped each year. Because of the phosphate legislation, the percentage of businesses that closed down over the past several years was slightly higher than in the years in which the quota system was in effect. The unfavourable margin development was an additional factor in 2020 for businesses to close down. According to Statistics Netherlands, 2020 again saw an above-average drop in the number of dairy farmers to 15,730 (-3.3%). However, the smaller number of dairy farms are, on average,

getting increasingly bigger in size. This development appears to have accelerated in 2020. While the number of smaller dairy farms with a dairy herd of a maximum of 100 animals dropped by 8%, the number of farms with more than 100 dairy cows rose (+4%). Larger farms made up more than 41% of the total number of farms.

This shows that in the current situation, where the room for growth for the sector as a whole is very limited owing to more stringent regulations applicable to phosphate and nitrogen emissions, individual growth is achieved mainly by acquiring smaller businesses.

In 2020, an average dairy farm produced almost 902 thousand kg of milk with 101 dairy cows and cows in calf. This means that the average size of businesses in the Netherlands reached a new record.

DAIRY CATTLE AND MILK PRODUCTION



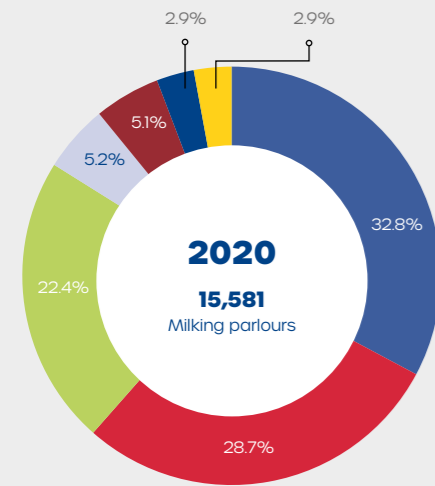
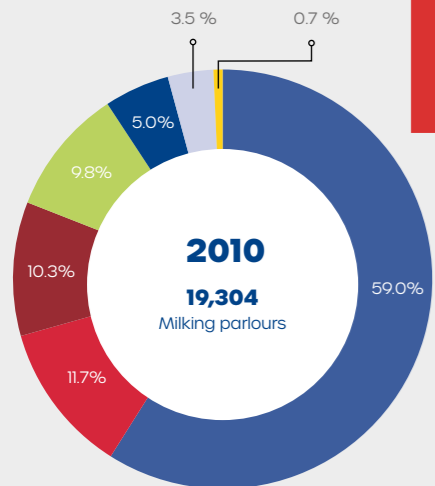
Source: Statistics Netherlands (CBS), RVO.nl, ZuivelNL

DAIRY FARMS: CLASSIFIED ACCORDING TO THE NUMBER OF DAIRY COWS PER FARM

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Less than 100 dairy cows	15,545	14,914	13,980	13,266	12,943	12,248	10,886	11,404	10,639	10,060	9,260
Percentage of total	78%	77%	75%	71%	70%	67%	61%	63%	63%	62%	59%
100 dairy cows, and more	4,260	4,333	4,702	5,399	5,638	6,017	7,024	6,658	6,324	6,200	6,471
Percentage of total	22%	23%	25%	29%	30%	33%	39%	37%	37%	38%	41%
TOTAL	19,805	19,247	18,682	18,665	18,581	18,265	17,910	18,062	16,963	16,260	15,731

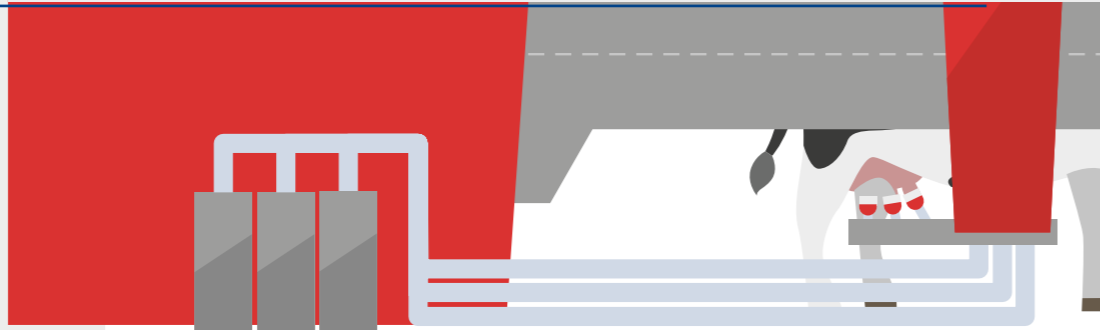
Source: Statistics Netherlands (CBS)

MILKING PARLOUR TYPES



- Herringbone parlour
- Tied up stable
- Automatic milking systems
- Rotary parlour
- Parallel parlour
- Swingover parlour
- Tandem parlour

Source: Foundation for Quality and Maintenance of Milking Installations



ORGANIC DAIRY FARMING IN THE NETHERLANDS

	2015	2016	2017	2018	2019	2020
Number of organic dairy farmers ¹	351	356	391	461	466	484
% of total	1.9%	2.0%	2.2%	2.7%	2.9%	3.1%
Organic dairy cows ¹	25,480	28,368	31,883	37,180	37,902	40,041
% of total	1.6%	1.6%	1.9%	2.3%	2.4%	2.5%

Number of dairy cows per farm

	2015	2016	2017	2018	2019	2020
Organic dairy farm	72.6	79.7	81.5	80.7	81.3	82.7
Average dairy farm	88.8	97.4	93.8	95.6	97.0	101.3

Organic milk deliveries (million kg)

	2015	2016	2017	2018	2019	2020
Organic milk deliveries	178	199	223	260	265	280
% of total	1.3%	1.4%	1.6%	1.9%	1.9%	2.0%

Milk production per farm (kg)

	2015	2016	2017	2018	2019	2020
Organic dairy farm	526,500	580,100	593,600	587,100	592,100	602,300
Average dairy farm	740,300	811,300	802,900	830,600	861,800	901,700

Milk yield per cow (kg)

	2015	2016	2017	2018	2019	2020
Organic dairy farm	6,650	6,680	6,710	6,850	6,990	7,000
Average dairy farm	8,338	8,328	8,561	8,687	8,880	8,904

¹Certified

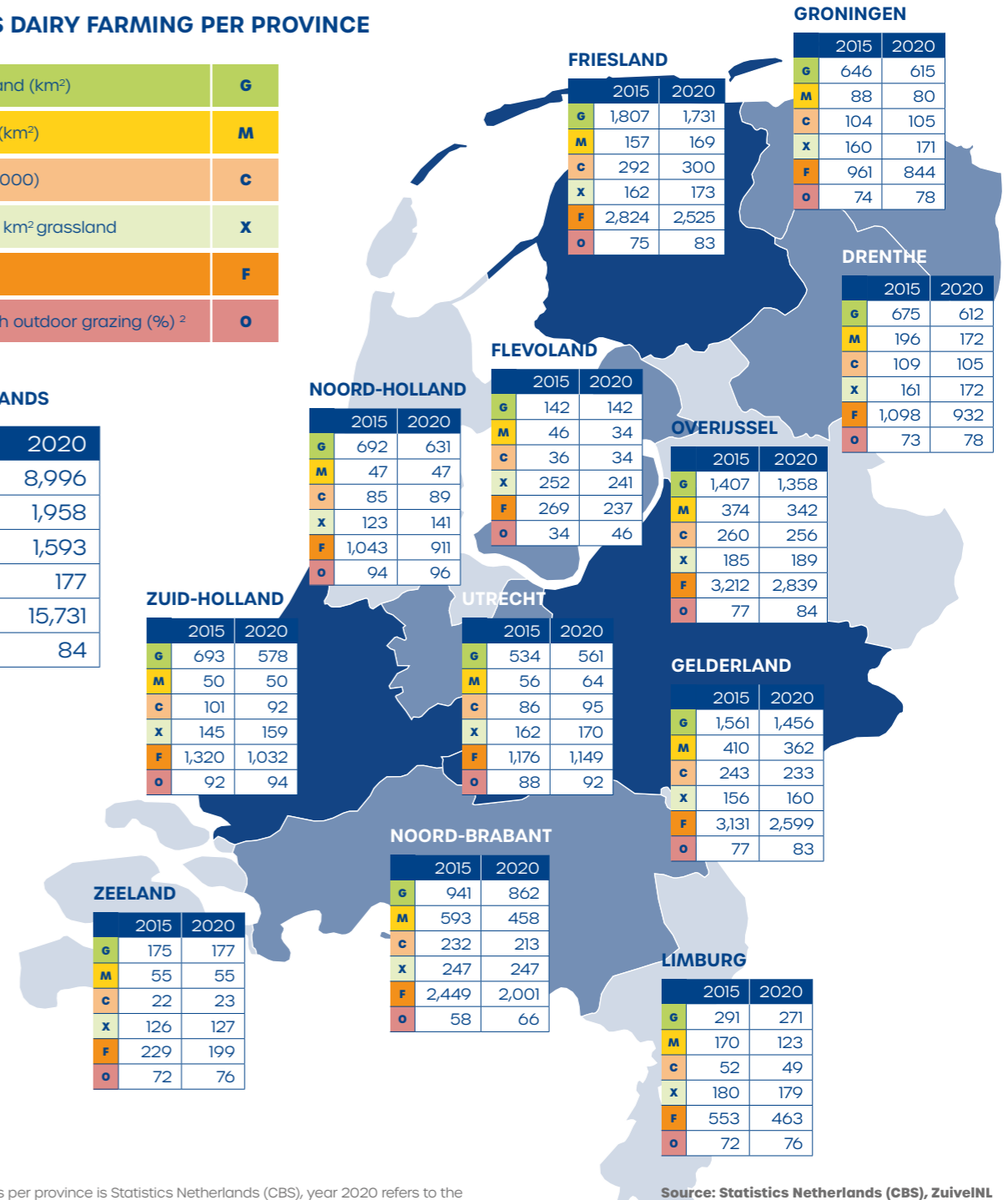
Source: Statistics Netherlands (CBS), RVO.nl, Wageningen University & Research, ZuivelNL

KEY FIGURES DAIRY FARMING PER PROVINCE

Surface grassland (km ²)	G
Surface maize (km ²)	M
Dairy cows (x 1,000)	C
Dairy cows per km ² grassland	X
Dairy farms	F
Dairy farms with outdoor grazing (%) ²	O

TOTAL NETHERLANDS

	2015	2020
G	9,563	8,996
M	2,242	1,958
C	1,622	1,593
X	170	177
F	18,265	15,731
O	78	84



²Source of the figures per province is Statistics Netherlands (CBS), year 2020 refers to the year 2019. Source of the figures for total Netherlands is Sustainable Dairy Chain (ZuivelNL).

Source: Statistics Netherlands (CBS), ZuivelNL

Milk processing industry

Milk supply

On balance, in 2020 the top dairy exporting countries achieved a 2% growth in milk supply, relative to 2019. This increase was achieved at the start of the year and then remained more or less constant. At year end, this represented an additional volume of approximately 6.9 billion kg of milk. This shows that the global dairy sector has proved to be sufficiently resilient to also maintain the level of milk production under the sometimes difficult circumstances during the COVID-19 pandemic. Processing also did not experience major disruptions either. In the Netherlands dairy industry, a proactive approach based on tightened hygiene protocols prevented problems from arising in the staffing of factories.

The milk supply in the EU-28 increased by 1.5% in 2020. In terms of absolute numbers, Italy, Ireland and Poland achieved the greatest increases, followed by the Netherlands where an additional 172 million kg was supplied to factories (+1.2%). The milk supply

development in large countries such as Germany (+0.2%) and France (+0.6%) was clearly below the European average. Besides the EU, the US in particular contributed to the growth in 2020, i.e. with 2.2 billion kg (+2.2%). In the US, good milk prices at the start of the year were followed by a favourable milk price/feed-cost ratio trend, despite the COVID-19 pandemic. That led to a significant increase in the dairy herd.

New Zealand's milk supply recovered only slightly in 2020 compared with the preceding moderate year (+0.4%). At the end of the day, good grass conditions in Q4 made the difference. For Australia, 2020 was characterised by recovery following previous contraction due to drought (+2.9%). Production in South America also saw a boost. Argentina achieved its highest production level since 2015 (+7.5%).

Milk processing

The Dutch dairy industry processed 14.5 billion kg of milk in 2020, almost 2% more than in 2019. More than half of that milk was used for cheese

production, which increased by more than 4% to a volume of 963 thousand tonnes (including quark). More than 60% of the cheese produced was Gouda cheese. COVID-19 also created a greater demand for milk in the retail sector, meaning that more milk went to drinking milk and drinking milk products (+3%). A larger volume of milk powder was also produced. Skimmed milk powder saw a razor-sharp increase to almost 74 thousand tonnes (+10%), a recovery compared with the relatively low production in 2019. The production of non-skimmed milk powder increased slightly to 179 thousand tonnes (+1%). Butter and butter oil production dropped by 3% to a volume of 215 thousand tonnes. The production volume of condensed milk fell by more than 13% to 339 thousand tonnes.

Structure

At the end of 2020, the Dutch dairy industry consisted of 25 companies with a total of 52 production locations. Five of these companies are cooperatives. They process the milk at 26 production locations.

INDUSTRIAL DAIRY PRODUCTION NETHERLANDS

million kg

	2019	2020 ¹	2020/2019
Milk delivered to dairies	13,802	13,974	1.2%
Milk available for processing	14,230	14,500	1.9%
Drinking milk and other fresh milk products ²	1,026	1,062	3.5%
Cheese (including cottage cheese)	922	963	4.5%
Butter and butteroil	222	215	-3.0%
Non-skimmed milk powder	177	179	1.0%
Skimmed milk powder	67	74	10.4%
Condensed milk ³	391	339	-13.3%

¹ Based on the development in the monthly figures

² Excluding added ingredients, including cream

³ Including coffee milk

Source: RVO.nl, ZuivelNL

The production value of the Dutch dairy industry fell by 1.6% in 2020 to an estimated €7.6 billion. For the most part, this drop in revenue was caused by COVID-19. The prices of butter, butter oil and non-skimmed milk powder in particular underperformed relative to the 2019 prices. For each 100 kg of processed milk, the production value came to €52.59, which is more than 3% below the price for the previous year.

INTERNATIONAL MILK DELIVERIES

Milk deliveries in the leading exporting countries of the world

	VOLUME 2020	ABSOLUTE GROWTH COMPARED TO 2019	RELATIVE GROWTH COMPARED TO 2019
	<i>billion kg</i>	<i>billion kg</i>	<i>%</i>
EU-28	160.2	2.4	1.5%
Italy	12.7	0.5	4.5%
Ireland	8.5	0.3	3.8%
Poland	12.5	0.3	2.3%
Netherlands	14.0	0.2	1.2%
France	24.7	0.1	0.6%
Belgium	4.3	0.1	3.4%
Germany	31.8	0.1	0.2%
Denmark	5.7	0.1	0.9%
United Kingdom	15.5	0.0	0.1%
Other EU-28	30.6	0.7	2.2%
USA	100.8	2.2	2.2%
Argentina	11.4	0.8	7.5%
Brazil	26.3	0.5	2.1%
Turkey	9.8	0.3	3.5%
Australia	9.1	0.3	2.9%
Chile	2.5	0.1	5.8%
Canada	9.6	0.1	1.4%
Uruguay	2.1	0.1	5.1%
New Zealand	21.9	0.1	0.4%

Source: Eurostat, RVO.nl, national statistics

GEOGRAPHICAL SPREAD OF MILK PROCESSING INDUSTRY

Situation from 31-12-2020



- FrieslandCampina (20)
- Ausnutria (2)
- A-ware (2)
- Bel Leerdammer (2)
- DOC Kaas (DMK) (2)
- Kaasmakerij Henri Willig (2)
- Danone/Nutricia (2)
- Rouveen Kaasspecialiteiten (2)
- Vreugdenhil Dairy Foods (2)
- Arla Foods NIJKERK
- CONO Kaasmakers WESTBEEMSTER
- De Graafstroom BLESKENSGRAAF
- Den Eelder WELL
- Wheyco (DMK) HOOGEVEEN
- Eijssen Dairy BEEK
- Farm Dairy LELYSTAD
- Fonterra HEERENVEEN
- Globemilk BOXMEER
- Hochwald Foods BOLSWARD
- Kaasmakerij Özgazi ETTEN-LEUR
- Nestlé NUNSPEET
- Trouw Nutrition SLOTEN
- Vecozuivel ZEEWOLDE
- VIV Buisman ZELHEM
- Zuivelhoeve HENGLO OV

KEY STATISTICS NETHERLANDS

	2018	2019	2020
Companies ⁴	25	25	25
Number of dairy plants	53	53	52
<i>Cooperative</i>	27	27	26
<i>Non-cooperative</i>	26	26	26
Milk processed (million kg)	13,749	14,230	14,500
Production value (million euro)	7,500	7,750	7,625

⁴ Which process more than 10 million kg of (raw) milk, cream and/or whey

Source: RVO.nl, ZuivelNL

TOP-20 LARGEST DAIRY COMPANIES

Turnover in 2019 + mergers and acquisitions between 1 January and 30 June 2020

	COMPANY	COUNTRY	TURNOVER	
			billion US dollar	billion euro
1	Nestlé	Switzerland	22.1	19.7
2	Lactalis	France	21.0	18.8
3	Dairy Farmers of America	USA	20.1	18.0
4	Danone	France	18.2	16.3
5	Yili	China	13.4	11.6
6	Fonterra	New Zealand	13.2	11.8
7	FrieslandCampina	Netherlands	12.6	11.3
8	Mengniu	China	11.9	10.3
9	Arla Foods	Denmark/Sweden	11.8	10.5
10	Saputo	Canada	11.3	10.1
11	DMK	Germany	6.5	5.8
12	Unilever	Netherlands/UK	6.4 ⁵	5.7 ⁵
13	Meiji	Japan	5.9	5.3
14	Sodiaal	France	5.7	5.1
15	Savencia	France	5.6	5.0
16	Gujarat Co-operative Milk Marketing Federation	India	5.5	4.9
17	Agropur	Canada	5.5	4.9
18	Kraft Heinz	USA	5.4	4.8
19	Schreiber Foods	USA	5.1 ⁵	4.6 ⁵
20	Müller	Germany	4.9 ⁵	4.4 ⁵

⁵ Estimate

Source: Rabobank

Sustainability

PRODUCT CARBON FOOTPRINT DAIRY FARMING

grams of CO2 equivalents per kg of measuring milk delivered by source

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
On the dairy farm										
Rumen fermentation and digestion (methane)	571	572	581	581	572	573	552	509	506	525
Manure (methane) ¹	152	150	154	157	153	157	149	141	139	144
Manure and soil (nitrous oxide) ²	147	149	152	151	151	137	127	118	115	118
Energy use (CO ₂) ³	31	33	34	31	33	31	30	29	29	30
Total on the dairy farm	900	904	920	919	910	898	858	797	789	817
In production of raw materials										
Concentrated feed (CO ₂)	298	310	331	339	330	351	346	340	322	312
Roughage and by-products (CO ₂)	16	21	23	24	26	27	23	20	16	14
Fertilizer (CO ₂)	43	41	44	43	44	41	37	37	33	36
Energy (CO ₂) ⁴	37	20	21	22	20	19	19	19	19	17
Other (CO ₂) ⁵	34	38	37	31	32	32	28	31	34	36
Total production raw materials	429	431	456	459	452	470	453	446	423	415
Total dairy farming	1,329	1,335	1,376	1,378	1,362	1,368	1,312	1,243	1,211	1,232

¹ animal manure emissions from fermentation processes in an anaerobic environment;

² emissions from nitrification and denitrification processes in the storage of animal manure and in the soil, and the indirect emission after atmospheric deposition of N-compounds and by wash out of N from agricultural soils;

³ direct fossil fuel emissions (assuming that 80% of the total fossil fuel emissions occur during combustion on dairy farm), including contract work and cultivation work;

⁴ emissions that occur during the production of electricity (100%) and fossil fuels (assuming that 20% of the total emissions of fossil fuels occur during production);

⁵ emissions from the production of other raw materials supplied, for example agricultural plastics and pesticides.

Source: Sustainable Dairy Chain, 2019 Report

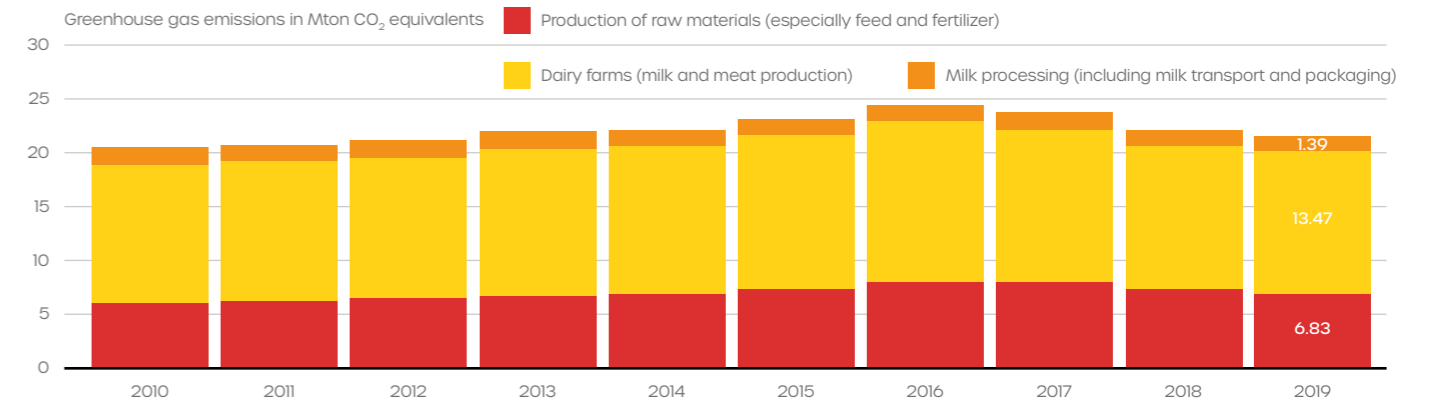
Sustainable Dairy Chain

ZuivelNL finances and manages the programme for Sustainable Dairy Chain (DZK), which is a collaboration between the Netherlands Agricultural and Horticultural Association (LTO Nederland), the Dutch Agricultural Youth Association (NAJK), the Dutch Dairy Farmers' Union (NMV) and dairy companies united in the Dutch Dairy Association (NZO). Through the

Sustainable Dairy Chain, the dairy farmer organisations in question and milk processing companies work together towards a sustainable dairy chain (for more detailed information visit: www.duurzamezuivelketen.nl).

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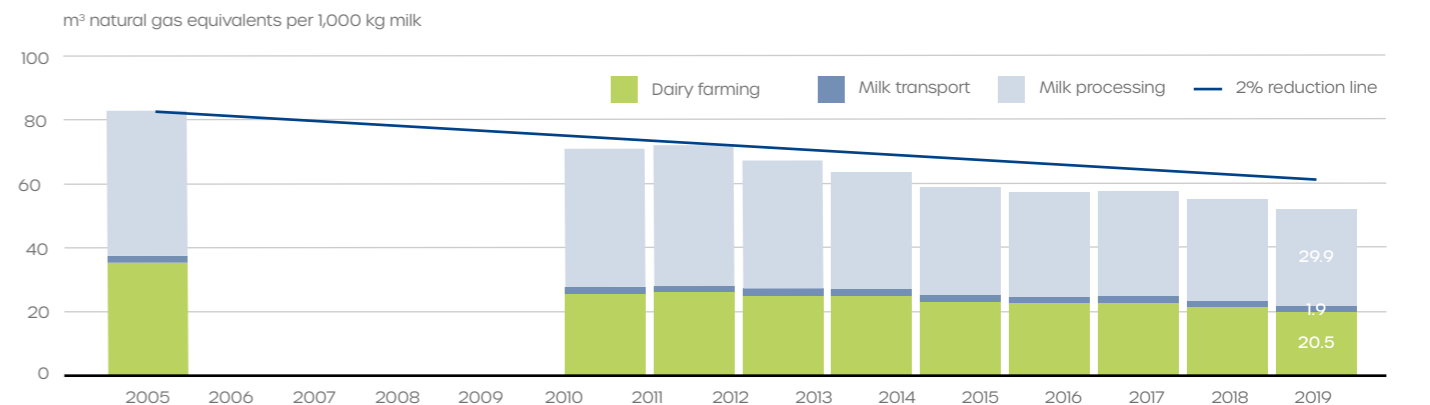
SECTOR CARBON FOOTPRINT FROM THE DAIRY CHAIN



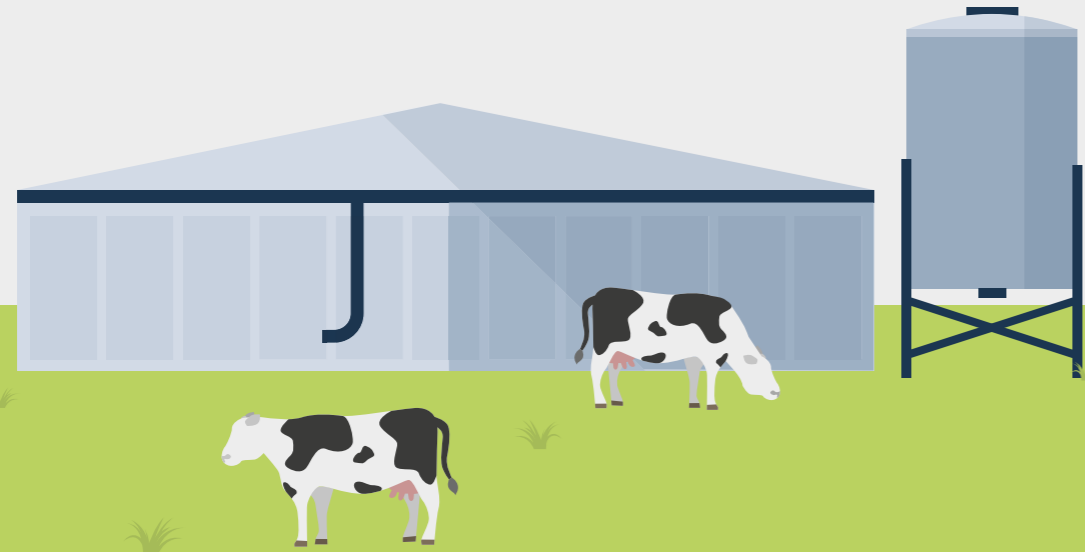
Source: Sustainable Dairy Chain, 2019 Report

PROGRESS IN ENERGY EFFICIENCY IN THE DAIRY CHAIN

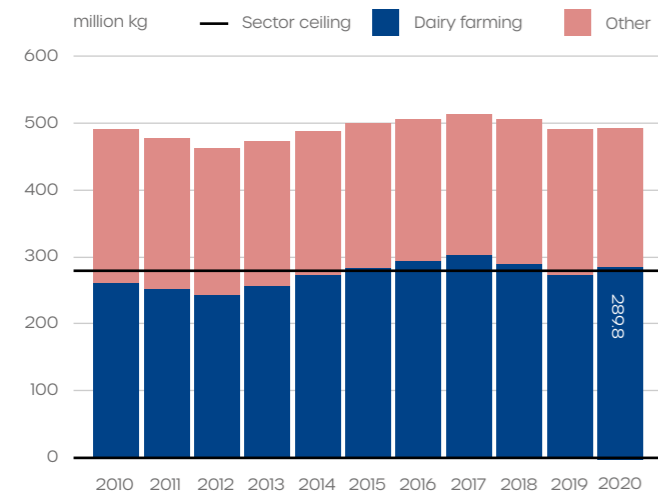
(objective: annual reduction of 2% compared to reference year 2005)



Source: Sustainable Dairy Chain, 2019 Report

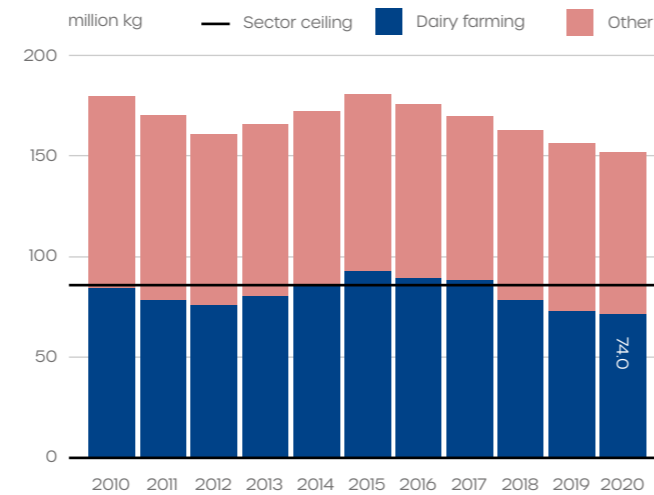


NITROGEN PRODUCTION IN ANIMAL MANURE



Sector ceiling dairy farming 281.8 million kg

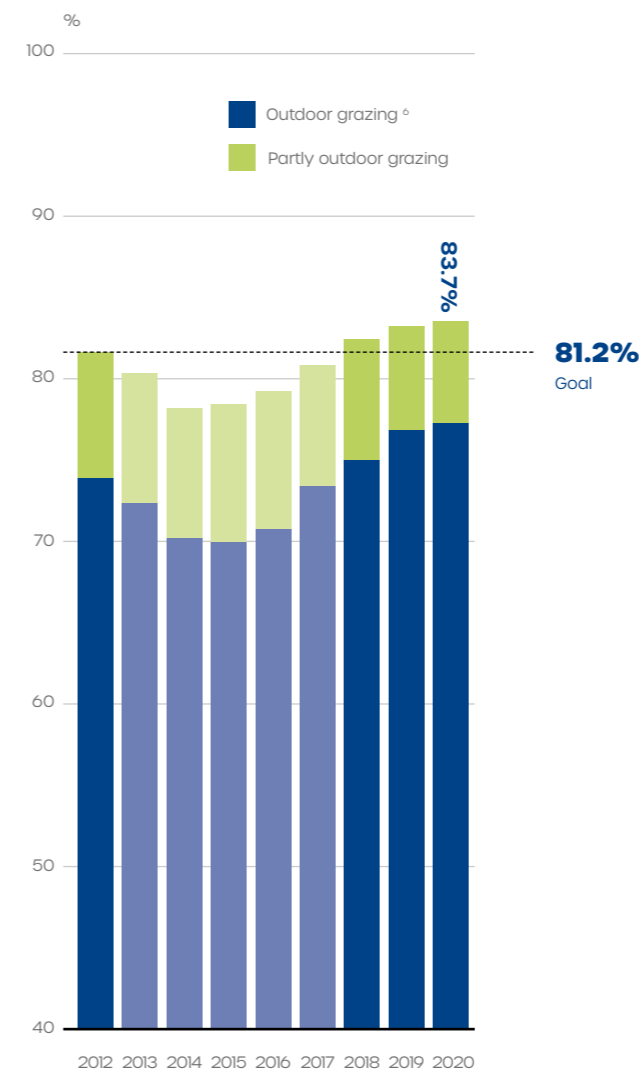
PHOSPHATE PRODUCTION IN ANIMAL MANURE



Sector ceiling dairy farming 84.9 million kg

Source: Statistics Netherlands (CBS)

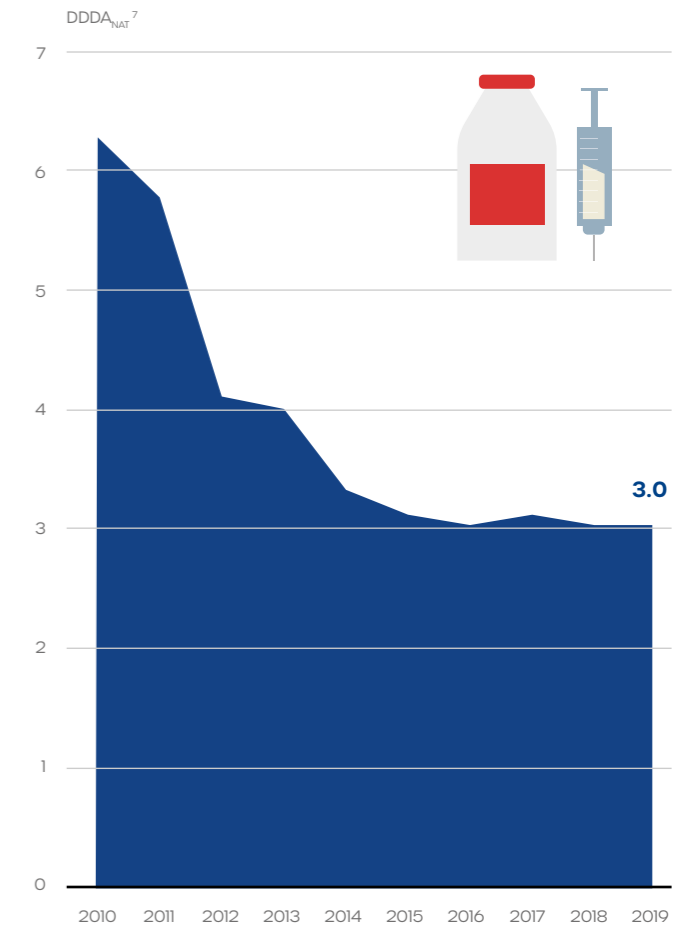
OUTDOOR GRAZING



⁶With outdoor grazing, the dairy cows are outside for at least 120 days and at least 6 hours a day on an annual basis

Source: Sustainable Dairy Chain, ZuivelNL

DEVELOPMENT OF AVERAGE ANTIBIOTIC USE BY DAIRY FARMS ACCORDING TO THE NETHERLANDS VETERINARY MEDICINES INSTITUTE



⁷Defined Daily Dose Animal, National: use of antibiotics at national level

Source: Sustainable Dairy Chain, 2019 Report

Trade

Export

The total export value dropped by roughly 3.5% in 2020 and stabilised at just under €7.6 billion. This drop is attributable mainly to the consequences that the dairy market endured from the COVID-19 pandemic, which had the greatest impact from March onwards. Decrease in value played a role in that respect, as did shifts in the product portfolio to a certain extent. A decrease in the export value of milk contributed significantly to the reduction of the export value. Butter and butter oil also showed a sharp drop in value (-12%), despite the fact that more product crossed the border (+3%).

Skimmed milk powder did not see any volume growth (-8%). On balance, even despite COVID-19, more value was generated (+6%), as the price level was on average somewhat higher than in reference year 2019, in which prices were relatively low.

Despite COVID-19, the main product group cheese did show growth (+1%) in both value and volume in 2020. The largest absolute volume increase was achieved in trade with the Netherlands' largest trading partner Germany (+6%).

However, this could not compensate the sharp drop in exports to Belgium, France and Greece in particular. The bottom line was that, on balance, the Dutch cheese trade within the EU underperformed slightly (-1%). The overall growth was attributable entirely to the increase in exports to third countries, which rose by 13%.

All key non-EU countries purchased more cheese, especially Republic of Korea, Japan, Chile and Morocco. Within the total Dutch export package (almost 926 thousand tonnes), the strong growth of mozzarella was particularly noticeable (+150%). The more traditional types of cheese, which are also dominant in terms of volume, either stagnated (Gouda, -0.7%) or saw limited growth (Edam, +2.7%).

The EU is by far the most important sales region for Dutch dairy products. In 2020, exports to EU Member States with a value of almost €5.4 billion represented over 70% of the total export value. Neighbouring countries Belgium and Germany alone, together with France, are good for half of the total Dutch dairy sales. The United Kingdom has also been an important and stable

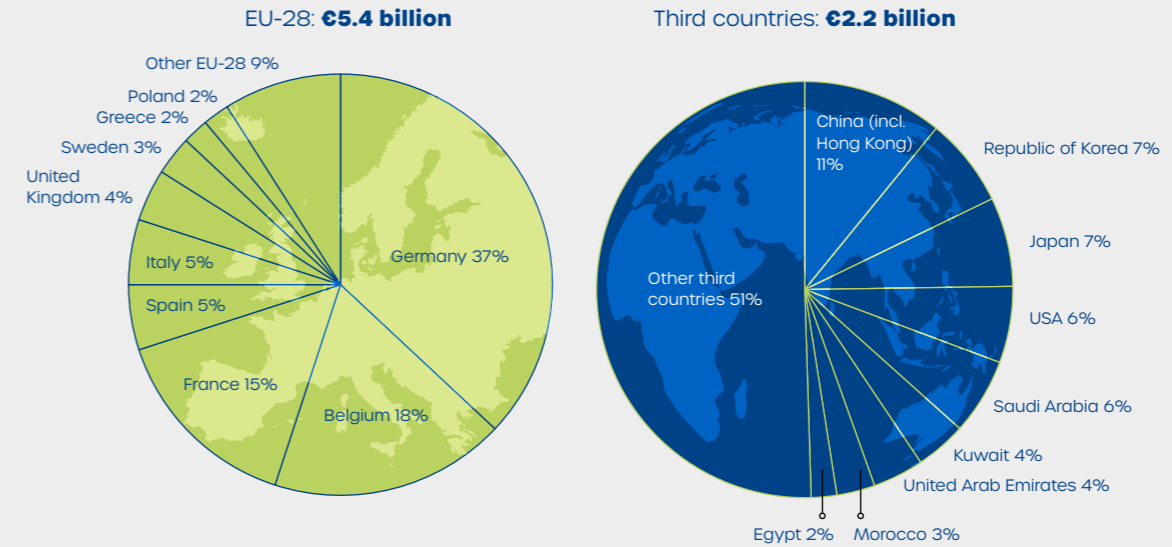
market for Dutch dairy over the years. The impact of Brexit will materialise in the coming years. Of all EU member states, the Netherlands is the most active on the world market. The Dutch share in world trade, which amounted to 83.4 billion kg of milk equivalents in 2020, was almost 5%.

This puts the Netherlands among the world's top five largest dairy exporters, together with New Zealand, the United States, Belarus and Germany. Outside the EU, China was again the largest market for dairy from the Netherlands in 2020, representing 3% of the total export value. With the exception of the United States, Morocco and Egypt, the top 10 destination countries were all in Asia and the Middle East.

Import

In addition to being an exporter, the Netherlands is an important importer of dairy from other EU Member States, primarily from Germany and Belgium. In 2020, the value of that import also dropped, to more than €3.6 billion (-4%), mainly due to less cheese, butter, milk and cream being imported. On balance, in 2020 the Dutch dairy trade surplus fell to €3.9 billion (-3%).

DUTCH EXPORT VALUE ¹ PER DESTINATION



¹Cheese, butter and butteroil, fermented milk products, concentrated milk, milk and cream, whey and whey products and products with milk constituents (HS-codes 0401-0406 and 17021)

Source: Eurostat, ZuivelNL

TOP-5 DESTINATIONS DUTCH EXPORTS IN VOLUME

million kg

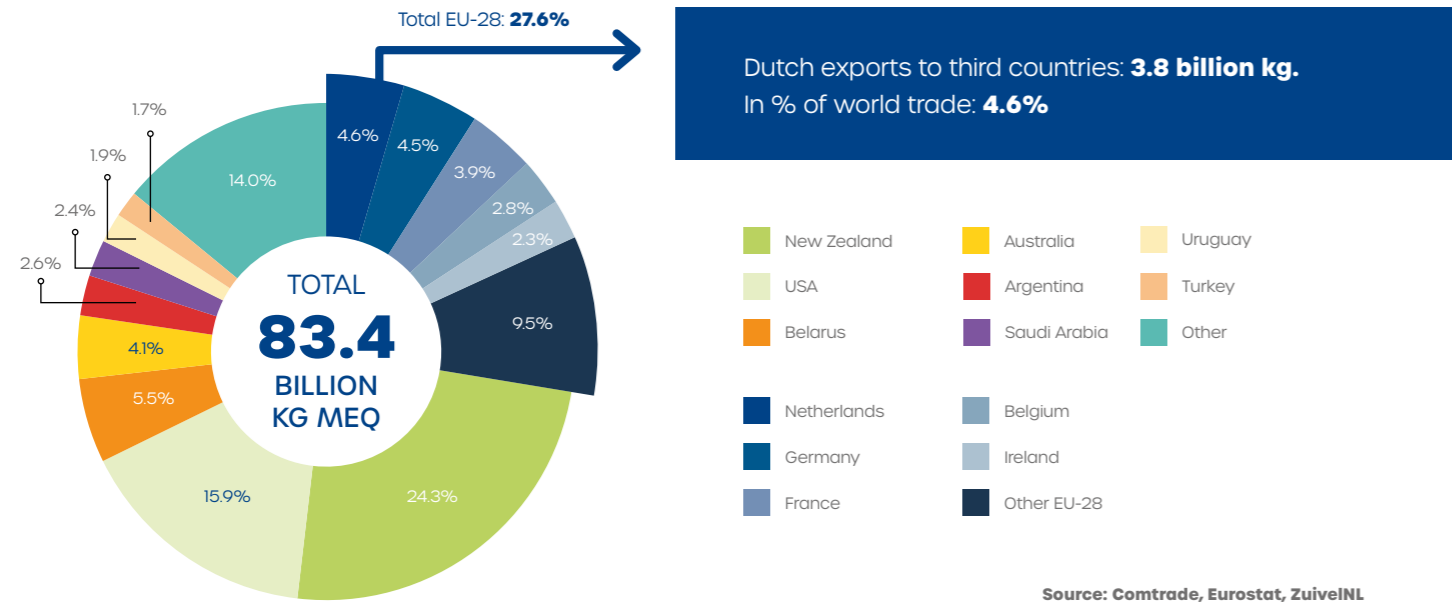
CHEESE			BUTTER AND BUTTEROIL			NON-SKIMMED MILK POWDER			SKIMMED MILK POWDER		
DESTINATION	VOLUME	%	DESTINATION	VOLUME	%	DESTINATION	VOLUME	%	DESTINATION	VOLUME	%
EU-28	765.7	82.7%	EU-28	280.5	87.2%	EU-28	45.4	30.4%	EU-28	69.1	45.2%
of which: Germany	301.2	32.5%	of which: Germany	108.5	33.8%	of which: Germany	12.2	8.2%	of which: Belgium	18.9	12.3%
Belgium	108.2	11.7%	France	73.2	22.8%	Belgium	7.6	5.1%	Germany	18.3	12.0%
France	95.0	10.3%	Belgium	42.0	13.1%	France	6.0	4.0%	Italy	7.1	4.6%
Spain	60.6	6.5%	Italy	13.2	4.1%	UK	5.3	3.6%	Spain	6.6	4.3%
Italy	39.3	4.2%	UK	10.3	3.2%	Italy	4.0	2.7%	France	6.2	4.0%
Japan	36.3	3.9%	USA	4.4	1.4%	Kuwait	15.7	10.5%	Saudi Arabia	8.7	5.7%
USA	15.5	1.7%	China ²	3.4	1.1%	Nigeria	11.3	7.5%	China ²	8.0	5.3%
Rep. of Korea	11.0	1.2%	Singapore	3.1	1.0%	China ²	9.4	6.3%	Yemen	7.2	4.7%
Morocco	9.9	1.1%	Philippines	2.6	0.8%	Saudi Arabia	4.4	3.0%	Singapore	6.5	4.3%
Other	87.3	9.4%	Other	27.6	8.6%	Other	63.3	42.3%	Other	53.4	34.9%
Total	925.7	100.0%	Total	321.5	100.0%	Total	149.5	100.0%	Total	153.0	100.0%

² Including Hong Kong

Source: Eurostat

POSITION OF DUTCH DAIRY EXPORTS ON THE WORLD MARKET

Export shares of the most important dairy exporting countries (in % of total world trade, expressed in milk equivalents)



DUTCH DAIRY EXPORTS TO THE UNITED KINGDOM

million kg

	2015	2016	2017	2018	2019	2020
Butter and butteroil	4.4	9.4	13.7	16.6	14.2	10.3
Condensed and evaporated milk	14.5	13.6	13.5	13.6	10.4	12.6
Fermented milk products	0.5	0.8	1.3	1.1	1.6	1.9
Cheese	34.5	35.7	33.5	35.2	32.2	31.7
Skimmed milk powder	1.7	1.0	0.9	1.2	2.0	1.3
Milk and cream	5.4	6.5	3.1	3.3	3.2	3.6
Non-skimmed milk powder	1.6	2.5	4.6	5.6	3.9	5.3
Other products ³	3.6	4.0	6.0	7.2	6.2	8.0

Total value (million euro)	€ 182.7	€ 206.7	€ 254.2	€ 275.3	€ 238.8	€ 227.6
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³Whey and whey products and products with milk constituents (HS-codes 0404 en 17021)

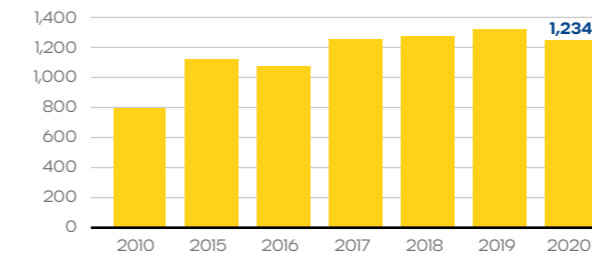
Source: Eurostat

DEVELOPMENT DUTCH IMPORTS

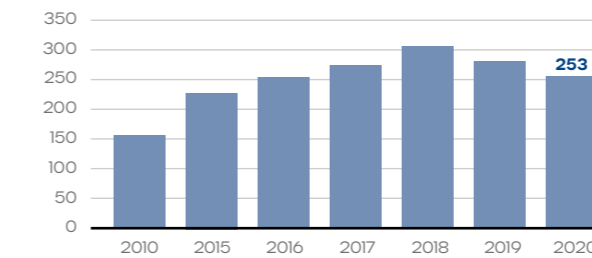
(including intra trade)

million euro

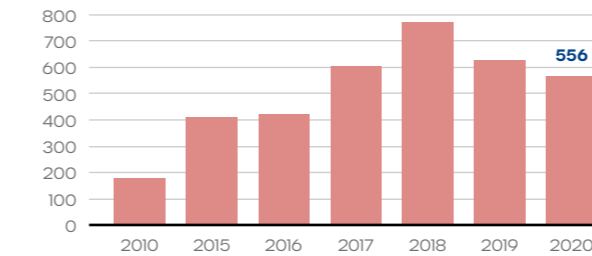
CHEESE



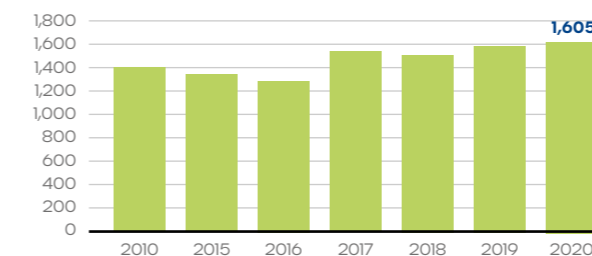
MILK AND CREAM⁴



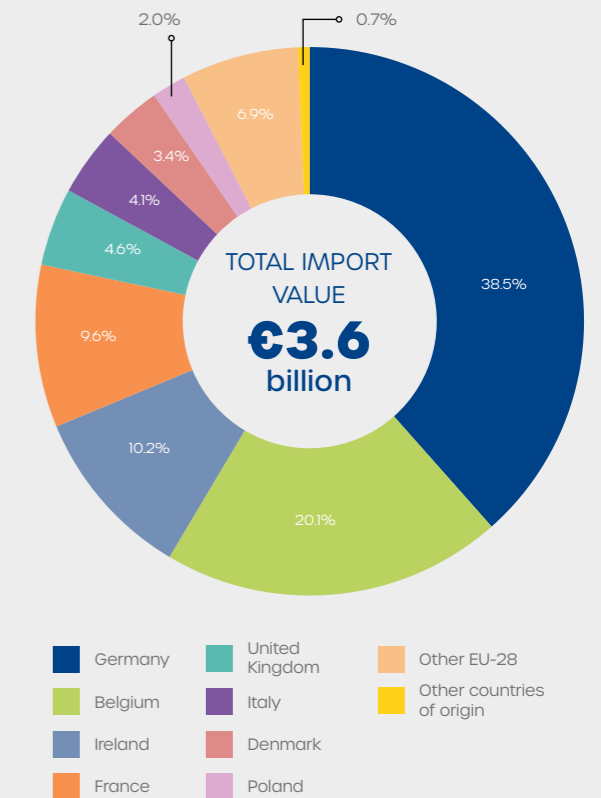
BUTTER AND BUTTEROIL



OTHER⁵



COUNTRIES OF ORIGIN OF DUTCH IMPORTS



⁴In small packages for consumers

⁵Milk powder, condensed milk, fermented products, whey and whey products, milk and cream (in bulk)

Source: Eurostat

Consumption

The Netherlands has a long tradition of dairy consumption. Milk, cheese, yoghurt and dairy desserts are part of the daily diet of many Dutch people. The fact that milk and dairy also contribute to people's better health is shown by the fact that dairy has a place in the Netherlands Nutrition Centre's 'Schijf van Vijf', its equivalent to the food pyramid. This is a nationally recognised information model to promote good, safe and more sustainable food choices.

The share of dairy¹ in Dutch households' consumer spending on food and non-alcoholic drinks has been more or less stable for years at just over 14%, while the past few years have seen it slowly increase to 15%. In 2019, this amounted to €5.9 billion, or 1.7% of total consumer spending.

Cheese is an important part of Dutch dairy consumption. Dutch cheese consumption per capita has been above the European average for years. In 2020, the per capita consumption of cheese, including quark and goat's cheese, amounted to approximately 26 kg. Of the

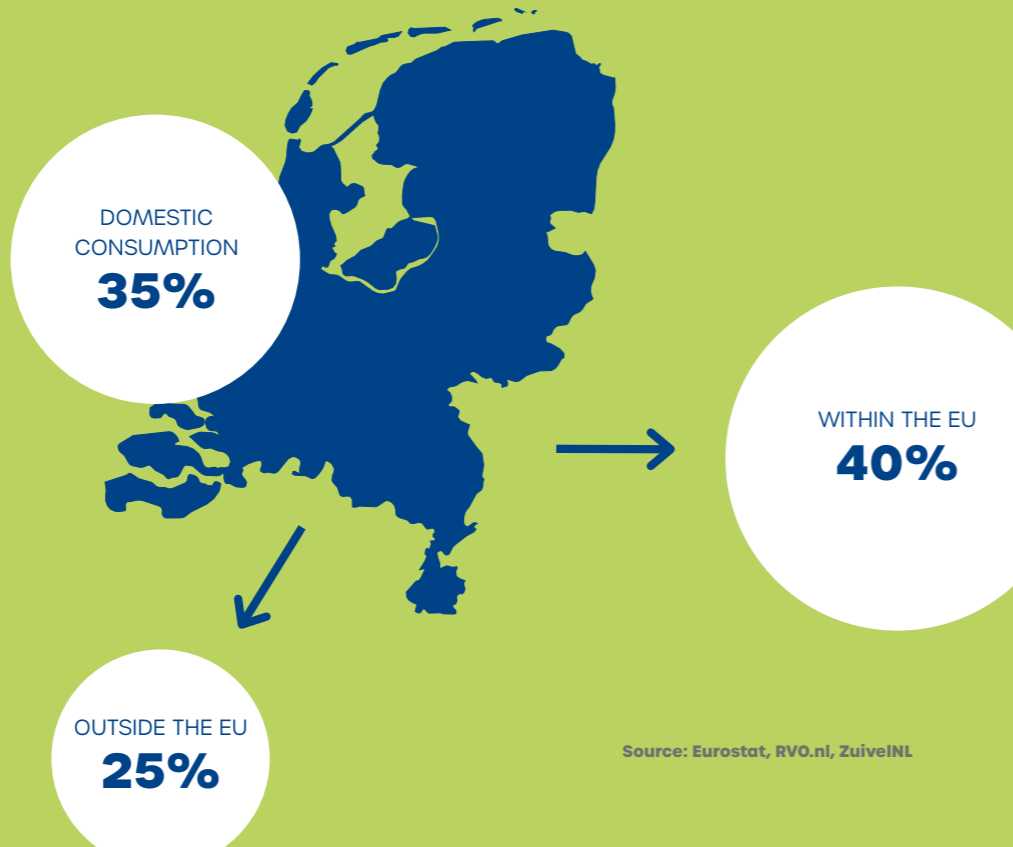
¹Including eggs, oils and fats

dairy available in the Netherlands (expressed in milk equivalents), which consists of national milk production and imports, approximately 35% is consumed in the domestic market. The remaining 65% is exported.

DESTINATION OF AVAILABLE DAIRY PRODUCTS IN THE NETHERLANDS

Based on production, imports and exports

in % milk equivalent



Source: Eurostat, RVO.nl, ZuivelNL

CONSUMPTION SPENDING OF DUTCH HOUSEHOLDS

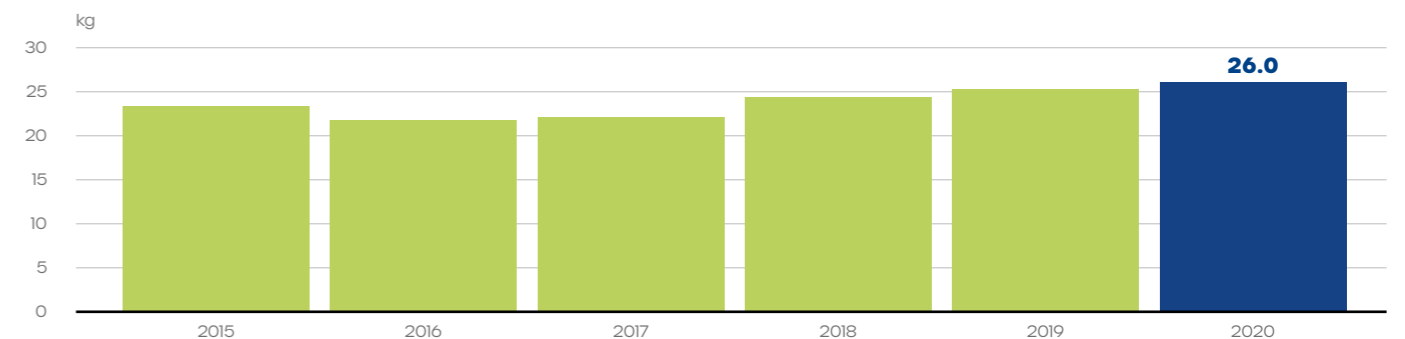
billion euro

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Potatoes, vegetables and fruit	5.8	5.9	6.0	6.3	6.4	6.8	7.1	7.5	7.7	8.1
Bread and bakery products	6.4	6.5	6.9	7.0	7.0	7.1	7.1	7.3	7.5	7.8
Meat and meat products	6.1	6.3	6.5	6.6	6.5	6.7	6.9	7.1	7.3	7.5
Dairy, eggs, oils and fats	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.3	5.6	5.9
Sugar, confectionery and ice	2.3	2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8
Mineral water, soft drinks and such	1.7	1.9	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9
Fish	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.4
Coffee, tea and cacao	0.9	1.0	1.1	1.0	1.0	1.1	1.1	1.2	1.2	1.3
Other foods	2.1	2.2	2.3	2.5	2.6	2.6	2.7	2.8	2.9	3.0
Total food and non-alcoholic beverages	30.7	31.8	33.0	33.6	33.8	34.9	35.6	37.0	38.0	39.7
Total consumption spending	290.5	296.8	297.2	300.4	304.2	310.8	316.0	327.3	341.6	354.7
Share of dairy products in:										
Total food and non-alcoholic beverages	14.3%	14.3%	14.0%	13.9%	14.3%	14.1%	14.0%	14.3%	14.8%	14.8%
Total consumption spending	1.5%	1.5%	1.6%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.7%

Source: Statistics Netherlands (CBS)

PER CAPITA CONSUMPTION CHEESE IN THE NETHERLANDS²

Based on production, imports and exports



²Including consumption of cottage cheese (about 4 to 5 kg per person) and goat cheese

Source: ZuivelNL



Dutch Dairy in Figures is a publication of ZuivelNL. It provides an overview in figures of the key developments in the Dutch dairy sector.

ZuivelNL is the chain organisation for the Dutch dairy sector. Its mission is to provide a platform for consultation and agreements between farmers' interest groups and dairy companies in those areas where chain links can jointly create added value. Themes include food safety, animal health, sustainability, research & innovation, export, market information, educating young persons and representation in the International Dairy Federation (IDF).

ZuivelNL's members are the Netherlands Agricultural and Horticultural Association (LTO Nederland), the Dutch Dairy Farmers' Union (NMV) and the Dutch Dairy Association (NZO). ZuivelNL finances the activities from contributions that are based on an amount that is withheld from each kilo of milk that is produced by dairy farmers and each kilo of milk that is processed by dairy companies.

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