ZuivelNL
KETENORGANISATIE VAN DE ZUIVELSECTOR

Dutch Dairy in Figures

2022

• The Netherlands: land of dairy • Market and Economy
• Dairy farming • Milk processing industry • Sustainability
• Trade • Consumption

2022

The publication Dutch Dairy in Figures (Zuivel in Cijfers) provides an overview in figures of the key developments in the Dutch dairy sector in 2022 and is divided into seven topics:

• The Netherlands: land of dairy • Market and Economy • Dairy farming • Milk processing industry • Sustainability • Trade • Consumption

Tables with detailed statistical information can be consulted on ZuivelNL's website.
Although the 2022 figures are provisional, they will not differ much from the final figures.

THE NETHERLANDS: LAND OF DAIRY

Modern industry
The Netherlands is known worldwide as a dairy country. The production and consumption of milk, butter and cheese has a long tradition and the characteristic meadow landscape with cows and windmills is inextricably linked to the image 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 a frontrunner in the international dairy world. As a result, it has a strong image and good access to important (growth) markets. The following requirements are important in this regard:

- Distinctive product quality
- Food safety
- Animal health
- Animal welfare
- Sustainable development

The professionalism of dairy farmers, in the dairy processing industry and in supplying sectors is the decisive factor for the successful development of the Dutch dairy sector.

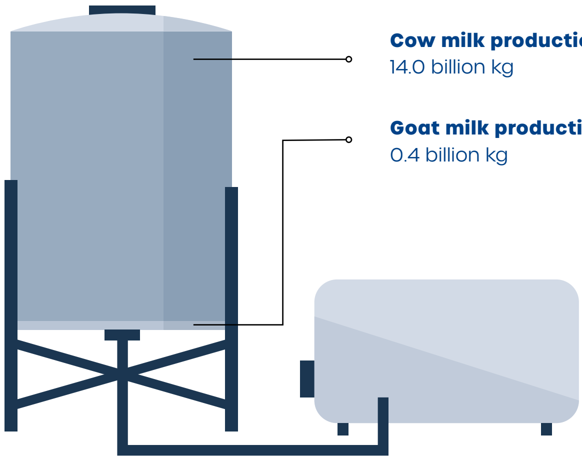
The nitrogen policy and the phasing out of the derogation arrangement pose a major challenge to the dairy sector
The abolition of the milk quota system in 2015 and the generally promising outlook for the global dairy market gave a boost to new investments in dairy farming and the dairy processing industry. The growth in dairy farming in the years that followed saw new challenges.

When it became apparent in the years 2015 to 2017 that the phosphate production ceiling set by the European Commission for the Netherlands had been significantly exceeded, drastic measures were taken. The effect of a plan for reducing phosphate drafted by the dairy sector in 2017 and a phosphate rights system introduced by the government with effect from January 2018 was that as of 2018 dairy farming had returned to the position where it stayed within the applicable phosphate production limits.

The government has imposed the heavy task on the agricultural sector to drastically reduce its nitrogen emissions. The entire Dutch dairy sector is expected to feel the consequences of that task during the period until 2035.
In 2022, the European Commission's Nitrate Committee decided to phase out the ample possibilities for spreading manure. As a result, the costs incurred by the dairy farming sector will increase sharply in the coming years. The annual, phased reduction commenced in 2023. The derogation arrangement will end definitively on 1 January 2026. As from that date, Dutch dairy farmers may only spread a maximum of 170 kg of nitrogen from animal manure per hectare per year (previously this was 230 to 250 kg).

Future-oriented through economically and environmentally responsible developments
In the coming years, Dutch dairy farming will continue to focus on a healthy, balanced development within the environmental limits. Climate measures, and greenhouse gas reduction and energy policies in particular, also have an increasing impact on dairy companies. Both the dairy processing industry and dairy farms want to make a positive contribution to realising the national climate objectives in an economically responsible manner.

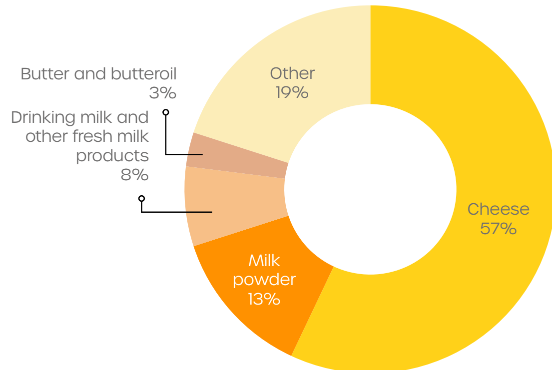
MILK PRODUCTION



Cow milk production
14.0 billion kg

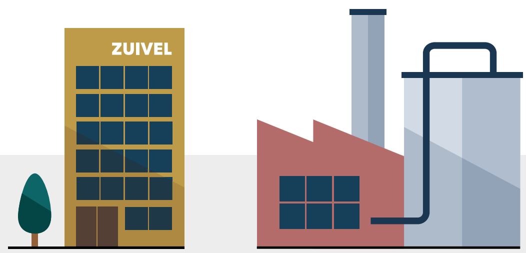
Goat milk production
0.4 billion kg

MILK PROCESSING



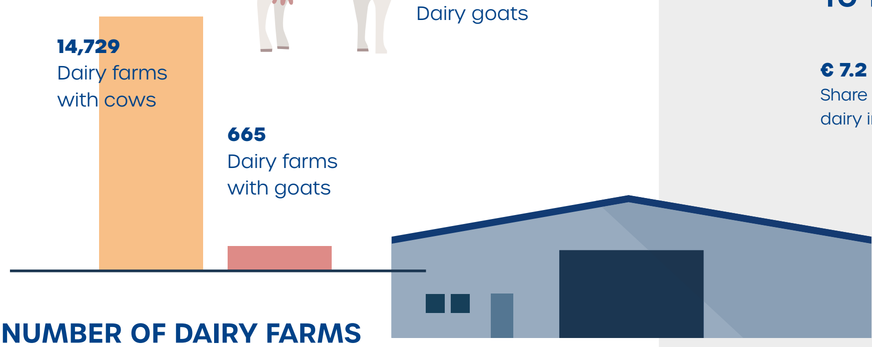
26
Milk processing companies

54
Dairy plants



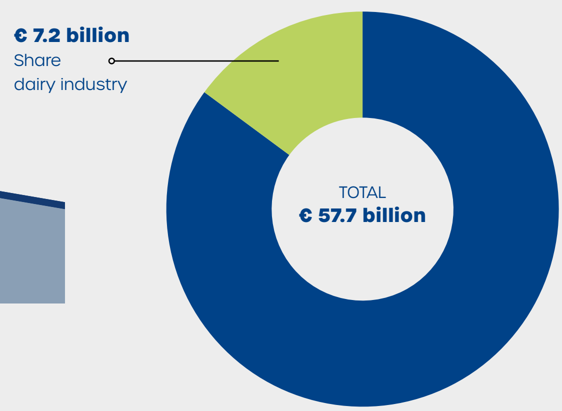
1.6 million
Dairy cows

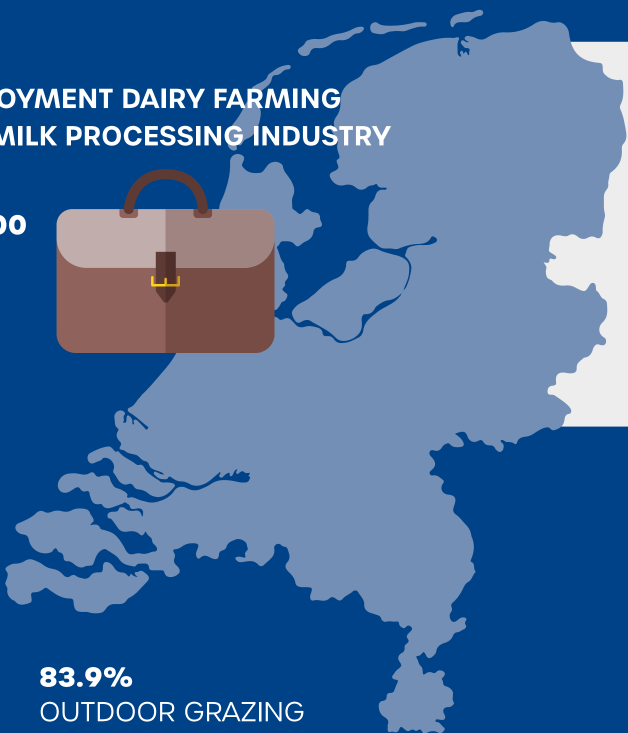
0.5 million
Dairy goats



NUMBER OF DAIRY FARMS IN THE NETHERLANDS

CONTRIBUTION OF AGRO & FOOD TO THE ECONOMY





EMPLOYMENT DAIRY FARMING AND MILK PROCESSING INDUSTRY

46,000
fte

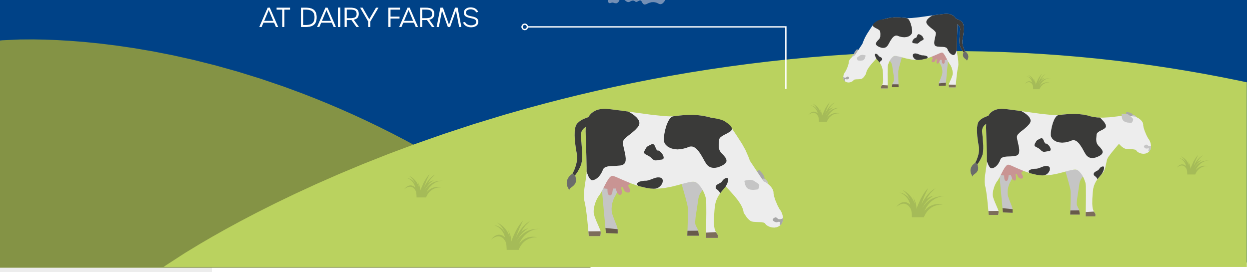
TOTAL SURFACE AREA GRASSLAND AND MAIZE
1.1 MILLION HECTARES

THIS IS **26%** OF THE SURFACE AREA IN THE NETHERLANDS

EXPORT REVENUES
€ 10.8 billion

7.4% contribution to trade surplus

83.9%
OUTDOOR GRAZING AT DAIRY FARMS



Dutch dairy at a glance

Source: Statistics Netherlands (CBS), Sustainable Dairy Chain (ZuivelNL), Wageningen University & Research, ZuivelNL

Market and Economy

Market development

In 2022, the global dairy market was strongly affected by the shortfall in milk production in the main export regions and extremely high cost levels in the entire dairy chain. The costs of fertiliser, feed and energy, for example, were already high before the war broke out in Ukraine and continued to skyrocket later. Less supply and high cost meant that the market prices for dairy products reached record highs.

Starting in September 2021, milk production in the leading export regions saw a downward trend. The sharply risen costs in the dairy farming industry resulted in smaller margins, which slowed down the production of milk. The cost of cattle feed in particular affected costs and, as a result, less concentrated feed was used. Furthermore, Europe in particular was confronted with a disappointing quality of roughage, which caused the production of milk and the milk contents to drop even further. In the fourth quarter of 2022, the milk supply in some key dairy countries recovered somewhat. This was the result of the very high milk price and falling costs.

In early 2022, the dairy market was relatively firm. The drop in milk production coupled with good demand and limited stocks resulted in a sharp increase in prices. The easing of the COVID-19 measures resulted in a positive market sentiment. However, the sentiment changed completely at the end of February when the war between Russia and Ukraine broke out, causing all kinds of raw materials (grain, vegetable fats, oil and gas) to reach unprecedented price levels. The already visible upward price movement in the dairy market was further reinforced by the war. The peak was reached in mid-April when the Dutch price of butter was € 735 per 100 kg and the price of skimmed milk powder was € 424 per 100 kg.

After reaching these record levels, the European butter market saw little movement in the prices until the third quarter. Little demand but also limited availability of fresh butter kept the Dutch price around € 700 per 100 kg. For skimmed milk powder, the situation was different. Unlike butter, this product has a much stronger direct link to the world market. Since mid-April, due to a drop in demand and competition with other suppliers from outside the EU, there was an almost continuous decline. At first, this decline was still modest, influenced by the drop in the global milk production, high cost (due to ever-rising energy costs) and the lack of sales pressure among producers.

From the start of October, the dairy market reached a tipping point. An increasing drop in demand due to the high price level combined with recovery of the milk supply in some key dairy countries and falling prices in the energy market put great pressure on market prices. Buyers took a wait-and-see attitude and assumed that the prices would fall even further. The price of butter in particular fell sharply in the fourth quarter of 2022, ending the year at just above € 500 per 100 kg. Skimmed milk powder also showed a sharp fall during this period: the price level at the end of December was well below € 300 per 100 kg.

For the second year in a row, the average price levels were significantly higher than in the previous year. Due to the war in Ukraine, the price levels increased even sharper in 2022 compared with the 2021 pandemic year. The average butter price increased by a huge 56%, making it the highest riser. The average annual prices for skimmed milk powder and whole milk powder rose by 37% and 44%, respectively. The same applied to cheese prices (+40%). Whey power showed a more modest increase of 12%.

Milk prices paid

Logically, the movements in the milk prices paid in the Netherlands reflected the developments on the dairy market. The upward trend in the milk price, which had already started in the fourth quarter of 2021, continued throughout 2022. In the second and third quarter in particular, the sharply risen market prices for dairy translated into substantial increases in the milk payout prices. From the second half of 2022, the milk price paid was around € 60 per 100 kg, which was a record.

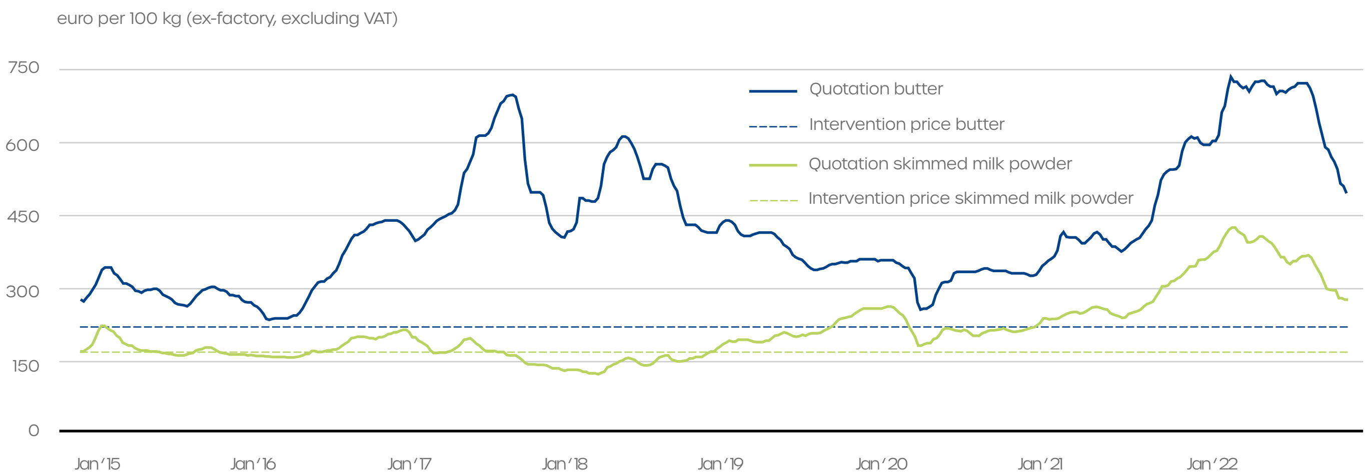
On average, the 2022 Dutch milk price was no less than 46% higher than in the previous year. However, it was not until the second half of the year that the milk price was at such a high level that returns improved significantly, also because the costs fell. This created an incentive to increase milk production.

Economic significance

In 2021, Agro & Food contributed € 57.7 billion (6.9%) to the Dutch economy (total: € 856.2 billion), of which € 7.2 billion (0.8%) related to dairy.

The share of dairy products[1] in Dutch households' consumer spending on food and non-alcoholic drinks has increased to roughly 15% in recent years. In 2021, this amounted to € 6.5 billion, or 1.8% of total consumer spending.

DUTCH QUOTATION FOR BUTTER AND SKIMMED MILK POWDER



[1] Including eggs, oils and fats.

Source: ZuivelNL

ANNUAL AVERAGE DUTCH QUOTATIONS

euro per 100 kg (ex-factory, excluding VAT)

index, 2015=100

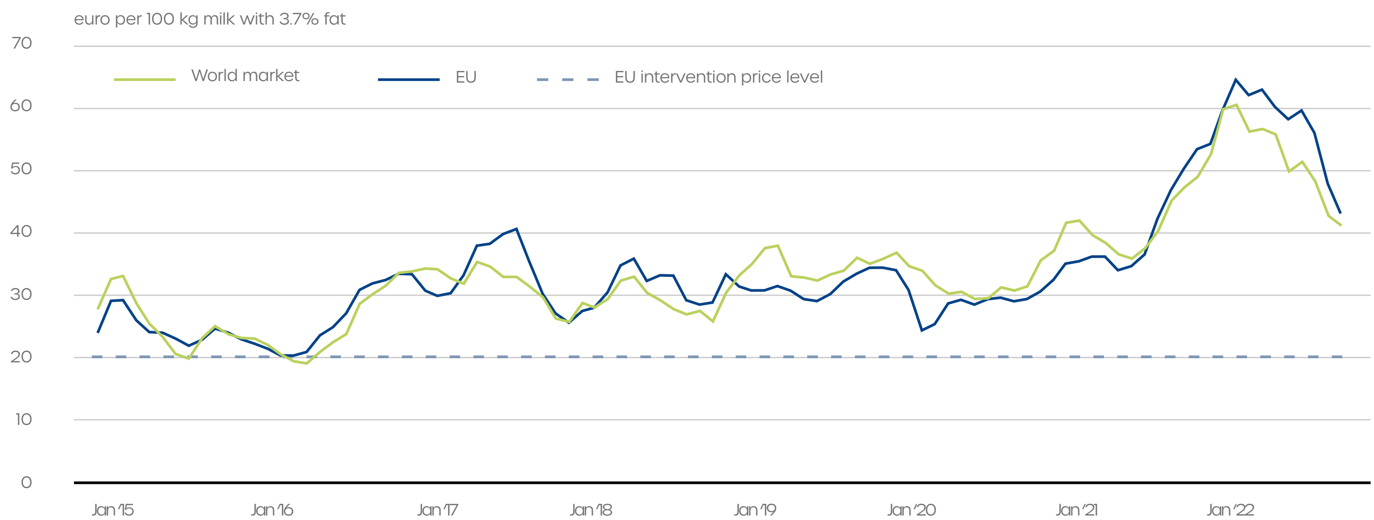
	Fresh butter		Whole milk powder [2]		Skimmed milk powder				Whey powder	
					Human consumption [2]		Feed (in bulk) [3]			
Year	Euro	Index	Euro	Index	Euro	Index	Euro	Index	Euro	Index
2022	662.27	224	472.71	202	363.69	201	353.90	214	111.62	172
2021	425.08	144	328.90	140	265.21	147	259.79	157	99.56	153
2020	325.77	110	276.36	118	220.15	122	209.30	127	72.32	111
2019	381.23	129	293.46	125	213.48	118	196.27	119	70.65	109
2018	499.29	169	268.54	114	149.12	82	132.13	80	69.65	107
2017	521.48	177	285.25	122	174.58	97	164.35	99	78.40	121
2016	325.83	110	225.48	96	179.65	99	165.52	100	64.42	99
2015	295.35	100	234.56	100	180.88	100	165.23	100	64.94	100

[2] According usual merchantable quality (protein-standardized).
[3] Free of charge delivery.

Source: ZuivelNL

FINANCIAL REVENUE OF MILK

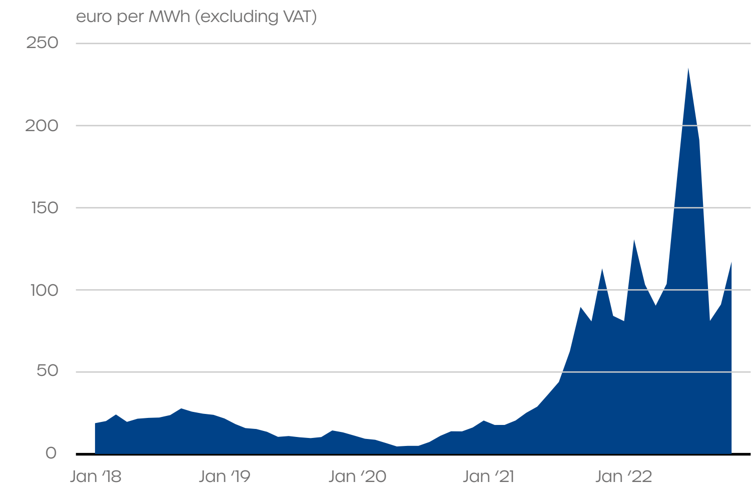
Based on Dutch quotations, respectively global market prices for butter and skimmed milk powder



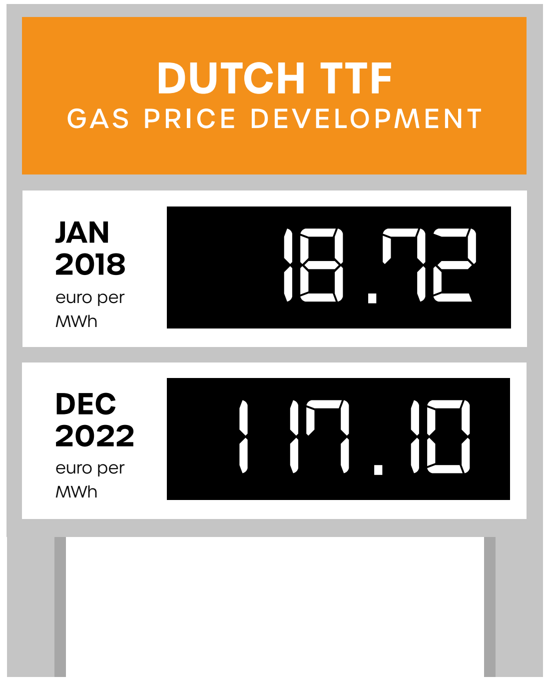
Source: ZuivelNL

GAS PRICES DEVELOPMENT (DUTCH TTF)

TTF: Title Transfer Facility (Dutch (virtual) trading place where gas is traded)

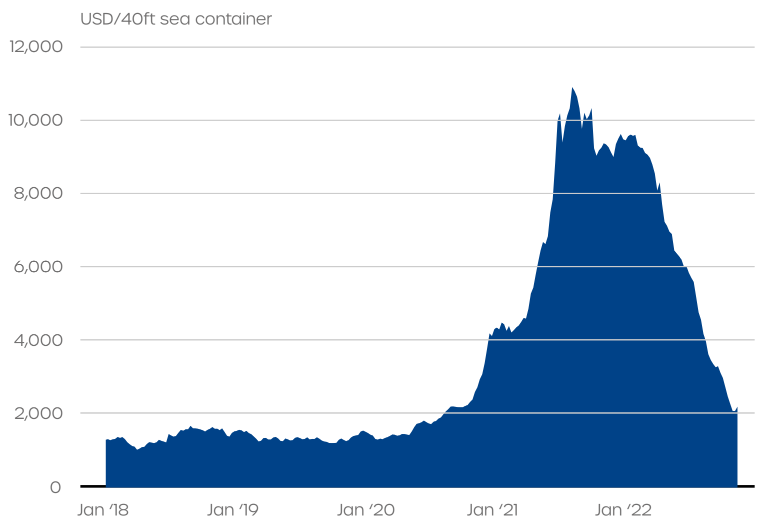


Source: Elexys

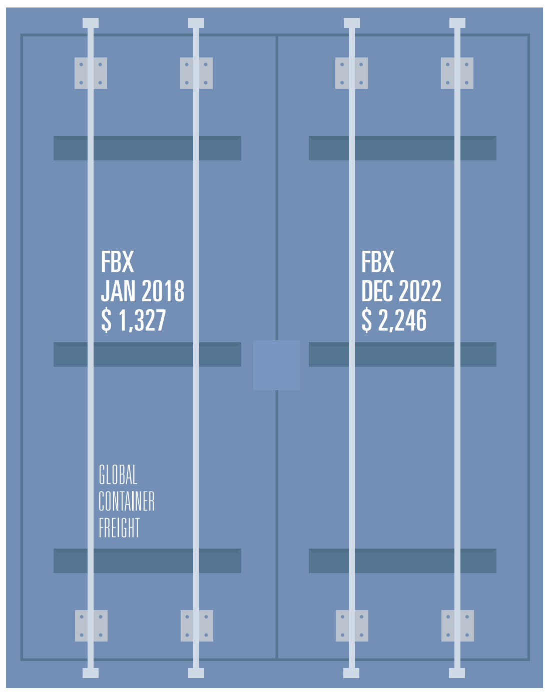


PRICE DEVELOPMENT GLOBAL CONTAINER FREIGHT

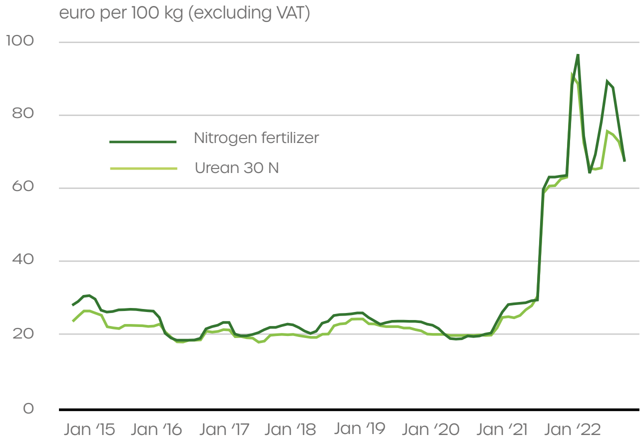
Freightos Baltic Index (FBX): rates for 40ft sea containers



Source: Freightos data

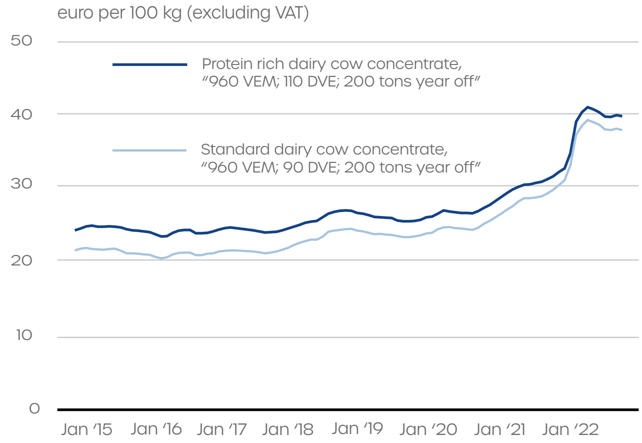


PRICE DEVELOPMENT FERTILIZER



Source: Wageningen University & Research

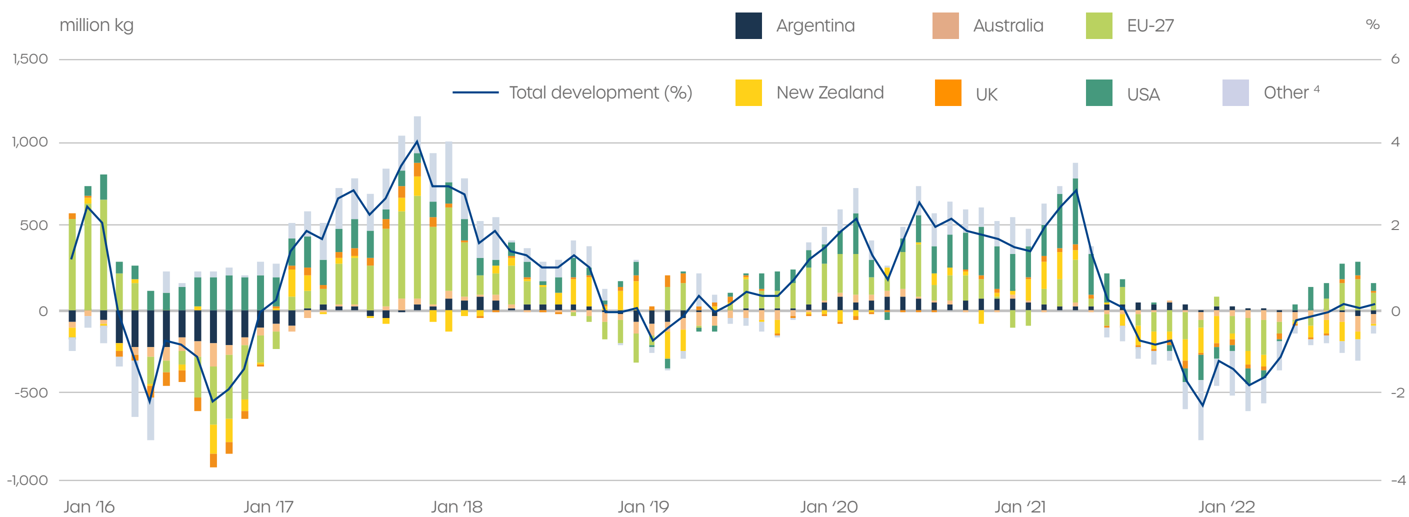
PRICE DEVELOPMENT CATTLE FEED



Source: Wageningen University & Research

DEVELOPMENT MONTHLY MILK DELIVERIES IN LEADING GLOBAL DAIRY EXPORTING COUNTRIES

Change from the same month in the previous year

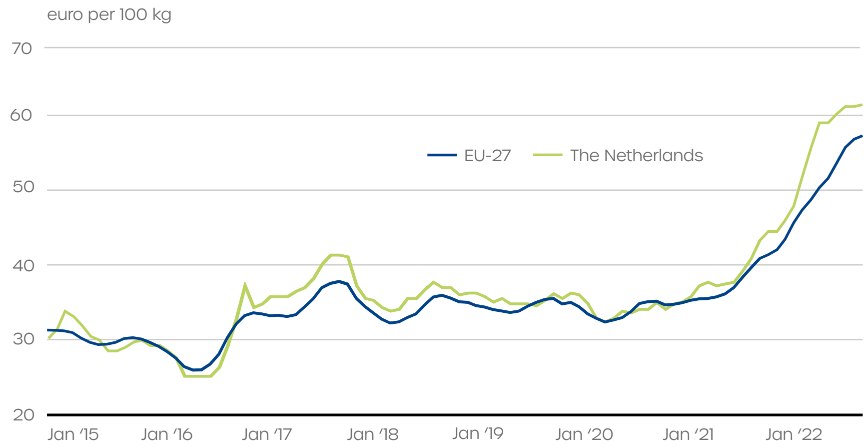


[4] Other: Belarus, Brazil, Canada, Chile, Türkiye and Uruguay.

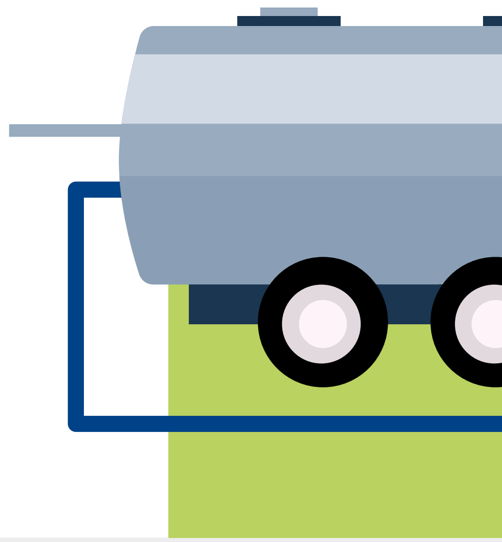
Source: Eurostat, RVO, national statistics, ZuivelNL

MONTHLY MILK PRICES PAID

The Netherlands and the EU-27

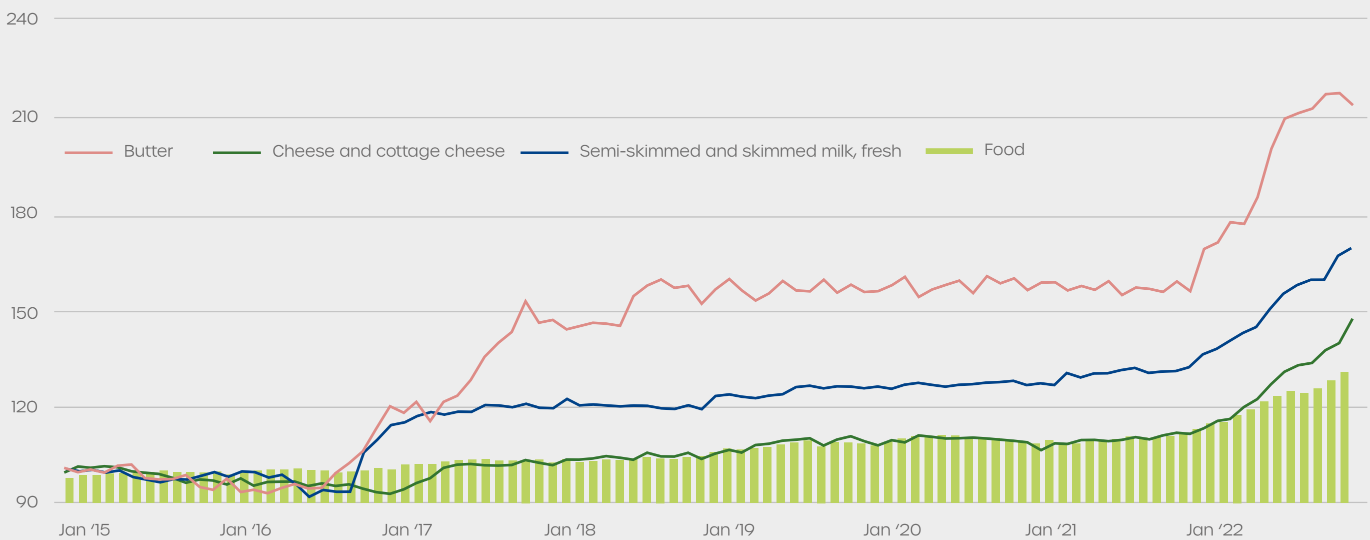


Source: Milk Market Observatory



DEVELOPMENT OF DUTCH CONSUMER PRICES

index, 2015 = 100



Source: Statistics Netherlands (CBS)

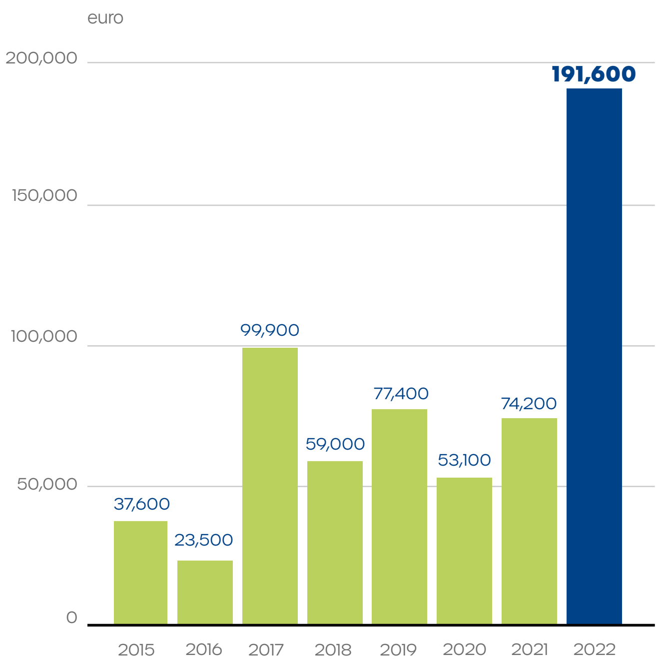
CONTRIBUTION OF DAIRY TO THE DUTCH ECONOMY

million euro	2015	2016	2017	2018	2019	2020	2021
Dairy farming	875	924	1,458	719	822	506	626
Milk processing industry	1,569	1,412	1,398	1,780	1,747	1,812	1,530
Distribution	1,432	1,148	1,026	957	819	757	808
Dairy sector related services [5]	3,727	3,880	4,115	4,096	4,087	4,245	4,262
TOTAL DAIRY	**7,603**	**7,364**	**7,997**	**7,551**	**7,475**	**7,320**	**7,226**
% GDP	**1.1%**	**1.0%**	**1.1%**	**1.0%**	**0.9%**	**0.9%**	**0.8%**
Agro & food other	41,752	43,498	46,228	46,505	48,108	48,517	50,468
% GDP	6.1%	6.1%	6.3%	6.0%	5.9%	6.1%	5.9%

[5] Among other agricultural and financial services, utilities and employment agencies.

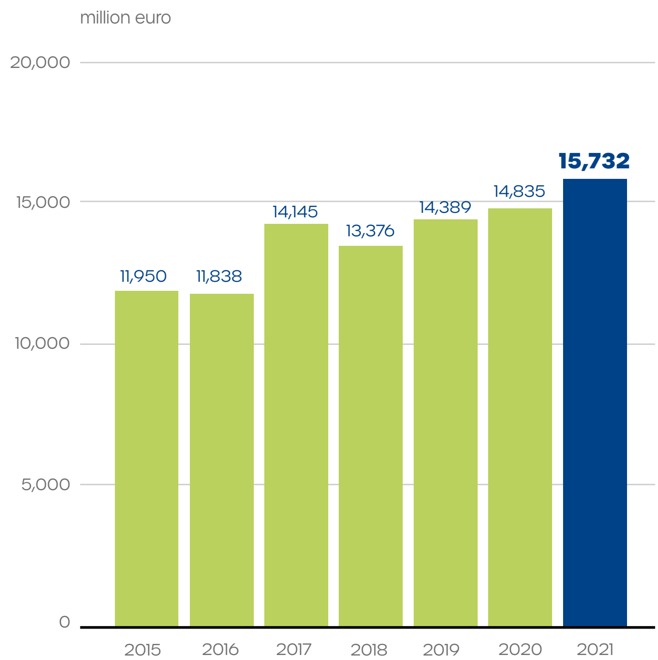
Source: Wageningen University & Research

DAIRY FARMS - INCOME DEVELOPMENT PER FARM



Source: Wageningen University & Research

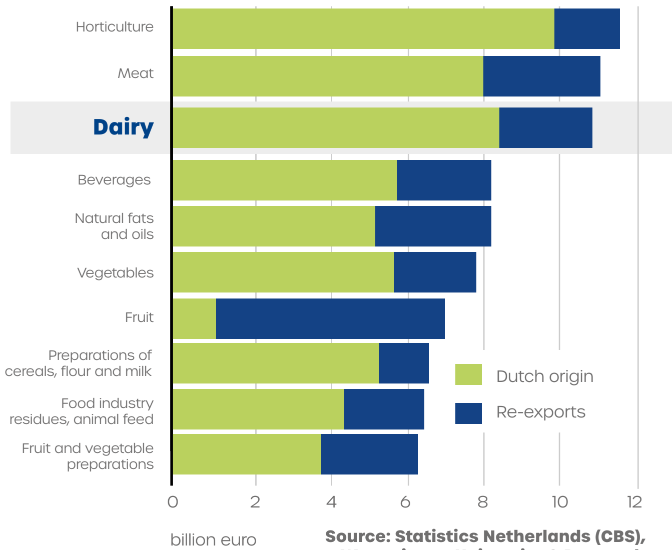
NET TURNOVER MILK PROCESSING INDUSTRY THE NETHERLANDS [6]



[6] Including production of ice cream.

Source: Statistics Netherlands (CBS)

EXPORT REVENUES AGRICULTURAL PRODUCTS



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

DAIRY EXPORT REVENUES

billion euro

	Dutch origin	Re-exports	Total
Milk and cream	**0.8**	**0.2**	**1.0**
Concentrated milk products	**1.4**	**0.4**	**1.8**
Fermented milk products	**0.1**	**0.1**	**0.2**
Whey products and milk protein concentrates	**0.5**	**0.2**	**0.6**
Butter and butteroil	**1.4**	**0.6**	**2.0**
Cheese	**4.3**	**0.9**	**5.2**
TOTAL	**8.4**	**2.4**	**10.7**

Source: Statistics Netherlands (CBS)

CONSUMPTION SPENDING OF DUTCH HOUSEHOLDS

billion euro

	2015	2016	2017	2018	2019	2020	2021
Potatoes, vegetables and fruit	6.8	7.1	7.5	7.7	8.1	9.3	9.3
Meat and meat products	6.7	6.9	7.1	7.3	7.6	8.8	9.0
Bread and bakery products	7.1	7.1	7.3	7.5	7.9	8.2	8.3
Dairy, eggs, oils and fats	4.9	5.0	5.3	5.6	5.9	6.6	6.5
Sugar, confectionery and ice cream	2.6	2.6	2.7	2.7	2.8	2.8	2.9
Mineral water, soft drinks and such	1.9	2.0	1.9	1.9	1.9	2.0	2.0
Fish	1.2	1.2	1.2	1.3	1.4	1.6	1.6
Coffee, tea and cacao	1.1	1.1	1.2	1.2	1.2	1.5	1.6
Other foods	2.6	2.7	2.8	2.9	3.0	3.3	3.4
Total food and non-alcoholic beverages	**34.9**	**35.6**	**37.0**	**38.0**	**39.8**	**44.1**	**44.6**
Total consumption spending	**310.8**	**316.0**	**327.3**	**341.6**	**353.5**	**335.5**	**359.6**
Share of dairy products in:							
Total food and non-alcoholic beverages	14.1%	14.0%	14.3%	14.8%	14.8%	15.0%	14.6%
Total consumption spending	1.6%	1.6%	1.6%	1.6%	1.7%	2.0%	1.8%

Source: Statistics Netherlands (CBS)

Dairy farming

Milk production
In 2022, Dutch milk production increased by 1.0% to a volume of over 14 billion kg. Production dropped in the first five months of 2022. The further sharp increase in energy and feed prices and the disappointing quality of roughage slowed down the development of the milk production and also resulted in lower levels of fat and protein in the raw milk. From June, the prolonged period of decline, which had lasted altogether a year and a half, came to an end. In particular, the improvement in returns due to sharply risen milk prices led to Dutch dairy farmers being encouraged to increase milk production.

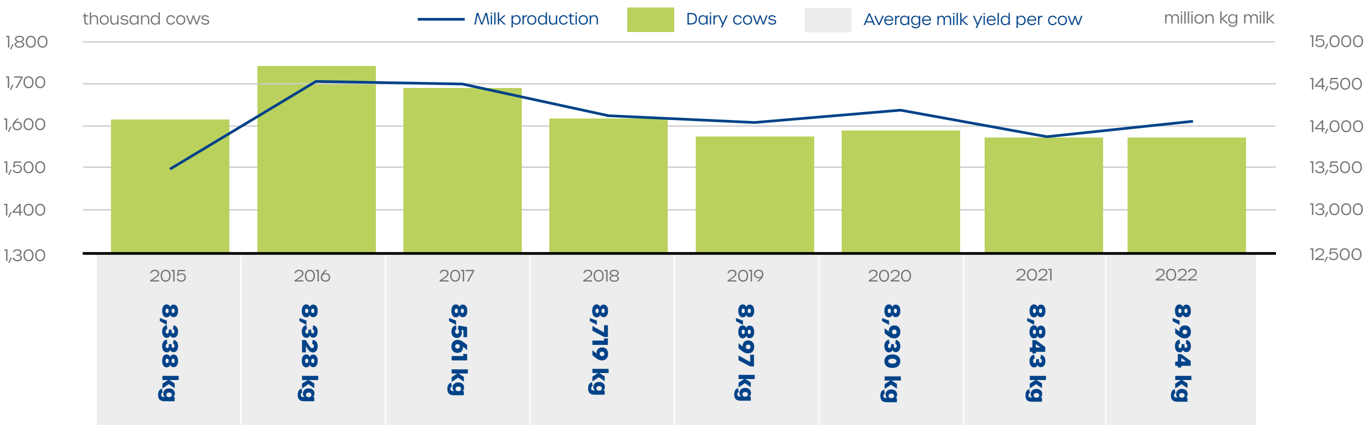
According to Statistics Netherlands (CBS), at the beginning of April 2022 there were 1.57 million dairy cows and cows in calf in the Netherlands, which is the same number as in 2021. The increase in milk production is therefore entirely attributable to the increase in the average milk yield per cow, which was more than 8,930 kg in 2022, 90 kg more than in the previous year (+1.0%).

Scale
For decades, the structural development in dairy farming has been characterised by a declining number of dairy farms. In the period from 2015 onwards, an average of 3% of farms ended their activities each year. Due to the phosphate legislation, the percentage of businesses that ceased operations in 2018 and 2019 was slightly higher than in the years just after the quota period (the milk quota system ended on 31 March 2015). In the past three years, the unfavourable market development and the uncertainty surrounding the nitrogen measures were additional factors in the decision whether to close down. According to Statistics Netherlands (CBS), in 2022 the number of dairy farmers fell by 3.4% to 14,730. In 2020 and 2021, the decrease was virtually the same.

The number of smaller dairy farms with less than 100 dairy cows is declining rapidly. The decline in the total number of dairy farmers over the past three years is entirely attributable to the decline in this size class, which shrunk by over 8% in 2022. The number of dairy farmers with more than 100 dairy cows increased. In 2022, this size class saw an increase of over 3%, meaning that the larger dairy farms represented 45% of the total (2015: 33%). Remarkably, a significant part of this growth occurred in the category of farms with more than 200 dairy cows.

In 2022, an average dairy farm with 107 dairy cows produced 952.7 thousand kg of milk. In 2021, 103 dairy cows produced 911.1 thousand kg of milk.

DAIRY CATTLE AND MILK PRODUCTION



Source: RVO, Statistics Netherlands (CBS), ZuivelNL

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

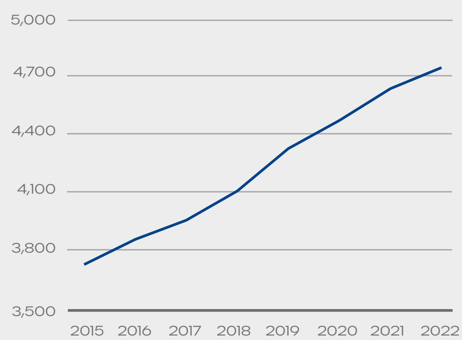
	2015	2016	2017	2018	2019	2020	2021	2022
Less than 100 dairy cows	12,248	10,886	11,404	10,639	10,060	9,260	8,785	8,062
Percentage of total	*67%*	*61%*	*63%*	*63%*	*62%*	*59%*	*58%*	*55%*
Between 100 and 200 dairy cows	5,272	5,963	5,651	5,359	5,236	5,400	5,362	5,473
Percentage of total	*29%*	*33%*	*31%*	*32%*	*32%*	*34%*	*35%*	*37%*
200 dairy cows, and more	745	1,061	1,007	965	964	1,071	1,104	1,194
Percentage of total	*4%*	*6%*	*6%*	*6%*	*6%*	*7%*	*7%*	*8%*
TOTAL	18,265	17,910	18,062	16,963	16,260	15,731	15,251	14,729

Source: Statistics Netherlands (CBS)

DAIRY FARMS, CLASSIFIED ACCORDING TO THE TYPE OF MILKING PARLOUR

	2015	2016	2017	2018	2019	2020	2021	2022
Automatic milking systems	3,705	3,840	3,943	4,100	4,328	4,479	4,650	4,763
Herringbone parlours	7,680	7,237	6,797	6,213	5,726	5,104	4,742	4,384
Parallel parlours	3,409	3,525	3,559	3,603	3,580	3,485	3,431	3,329
Rotary parlours	827	840	837	843	827	810	792	784
Tied up stables	1,326	1,220	1,103	1,007	921	787	736	675
Swingover parlours	383	419	442	456	461	458	454	459
Tandem parlours	612	560	511	476	415	369	340	306
TOTAL	17,942	17,641	17,192	16,698	16,258	15,492	15,145	14,700

Total number **automatic milking systems**



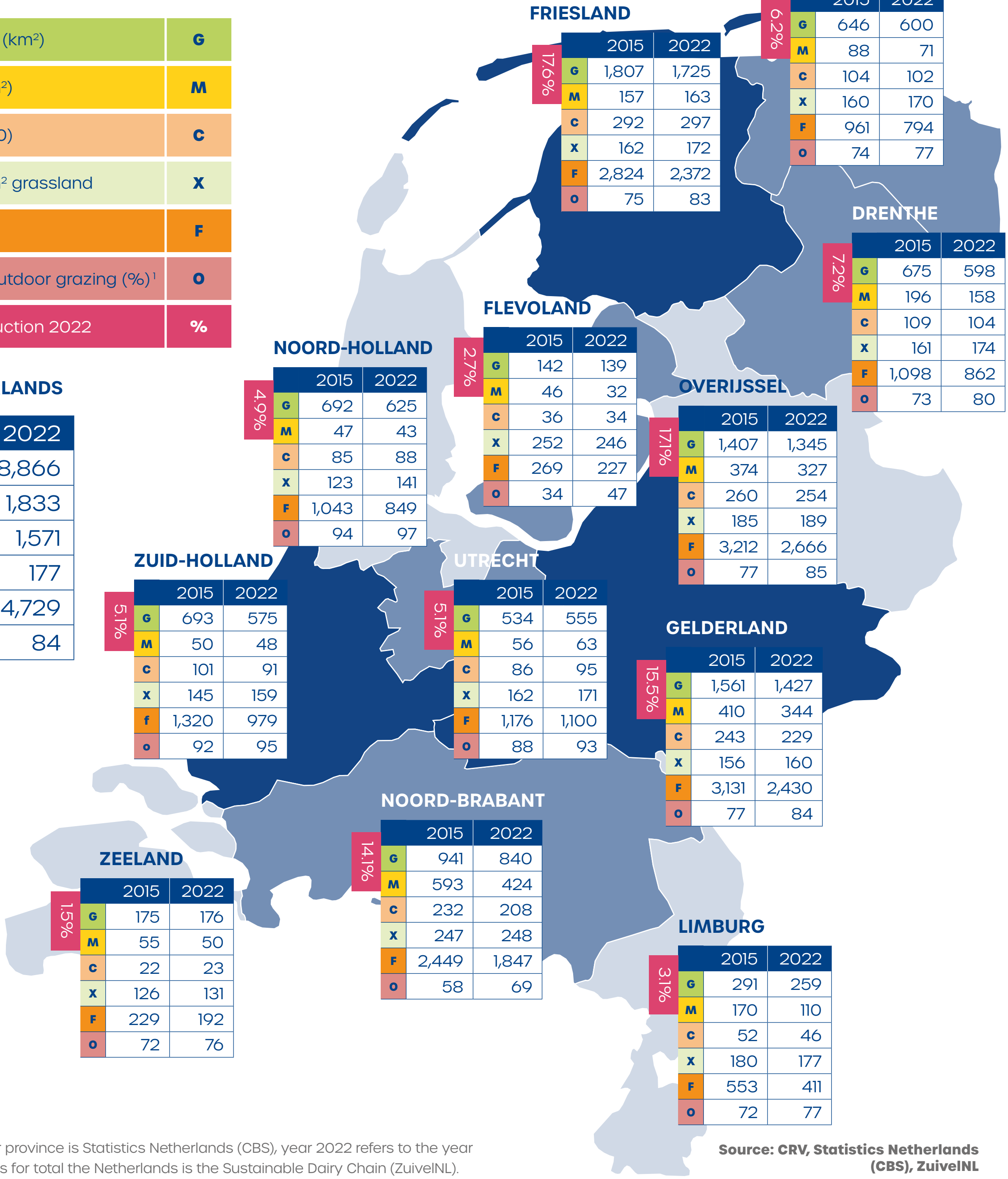
Source: Quality and Maintenance of Milking Installations (Qlip)

KEY FIGURES DAIRY FARMING PER PROVINCE

Surface grassland (km²)	G
Surface maize (km²)	M
Dairy cows (x 1,000)	C
Dairy cows per km² grassland	X
Dairy farms	F
Dairy farms with outdoor grazing (%)[1]	O
Share in milk production 2022	%

TOTAL THE NETHERLANDS

	2015	2022
G	9,563	8,866
M	2,242	1,833
C	1,622	1,571
X	170	177
F	18,265	14,729
O	78	84



GRONINGEN

6.2%

	2015	2022
G	646	600
M	88	71
C	104	102
X	160	170
F	961	794
O	74	77

FRIESLAND

17.6%

	2015	2022
G	1,807	1,725
M	157	163
C	292	297
X	162	172
F	2,824	2,372
O	75	83

DRENTHE

7.2%

	2015	2022
G	675	598
M	196	158
C	109	104
X	161	174
F	1,098	862
O	73	80

FLEVOLAND

2.7%

	2015	2022
G	142	139
M	46	32
C	36	34
X	252	246
F	269	227
O	34	47

NOORD-HOLLAND

4.9%

	2015	2022
G	692	625
M	47	43
C	85	88
X	123	141
F	1,043	849
O	94	97

OVERIJSSEL

17.1%

	2015	2022
G	1,407	1,345
M	374	327
C	260	254
X	185	189
F	3,212	2,666
O	77	85

ZUID-HOLLAND

5.1%

	2015	2022
G	693	575
M	50	48
C	101	91
X	145	159
f	1,320	979
o	92	95

UTRECHT

5.1%

	2015	2022
G	534	555
M	56	63
C	86	95
X	162	171
F	1,176	1,100
O	88	93

GELDERLAND

15.5%

	2015	2022
G	1,561	1,427
M	410	344
C	243	229
X	156	160
F	3,131	2,430
O	77	84

NOORD-BRABANT

14.1%

	2015	2022
G	941	840
M	593	424
C	232	208
X	247	248
F	2,449	1,847
O	58	69

ZEELAND

1.5%

	2015	2022
G	175	176
M	55	50
C	22	23
X	126	131
F	229	192
O	72	76

LIMBURG

3.1%

	2015	2022
G	291	259
M	170	110
C	52	46
X	180	177
F	553	411
O	72	77

[1] Source of the figures per province is Statistics Netherlands (CBS), year 2022 refers to the year 2021. Source of the figures for total the Netherlands is the Sustainable Dairy Chain (ZuivelNL).

Source: CRV, Statistics Netherlands (CBS), ZuivelNL

MILK PRODUCTION PER COUNTRY IN 2021, TOTAL AND IN KG PER CAPITA

Data based on the production of cow's milk and buffalo milk

Milk production (billion kg) | Per capita (kg)

NORTH AND CENTRAL AMERICA

	Milk production (billion kg)	Per capita (kg)
USA	102.6	305
Canada	10.5	275
Mexico	13.2	104

SOUTH AMERICA

	Milk production (billion kg)	Per capita (kg)
Uruguay	2.3	684
Argentina	11.9	263
Brazil	36.4	170
Colombia	8.1	156
Chile	2.7	140
Venezuela	2.4	87

AFRICA

	Milk production (billion kg)	Per capita (kg)
Kenya	4.6	88
South Africa	3.5	59
Egypt	6.3	58
Algeria	2.4	55
Nigeria	0.5	2

EU-27

	Milk production (billion kg)	Per capita (kg)
Ireland	9.0	1.813
Denmark	5.7	977
Netherlands	13.9	793
Lithuania	1.5	530
Germany	32.5	390
Poland	14.9	388
France	24.7	383
Belgium	4.4	379
Italy	13.6	230
Other EU-27	33.9	217
EU-27 AVERAGE	154.3	347

OTHER EUROPE

	Milk production (billion kg)	Per capita (kg)
Belarus	7.8	815
Switzerland	3.8	439
United Kingdom	15.7	233
Russia	32.3	223
Ukraine	8.5	196

ASIA

	Milk production (billion kg)	Per capita (kg)
Pakistan	51.0	220
India	218.2	155
Japan	7.6	61
Republic of Korea	2.0	39
China	39.7	28
Thailand	1.3	19
Vietnam	1.1	11
Indonesia	1.1	4
Malaysia	0.0	1
Philippines	0.0	0

MIDDLE EAST

	Milk production (billion kg)	Per capita (kg)
Türkiye	21.4	253
Israel	1.6	180
Iran	7.2	81
Saudi Arabia	2.6	72
United Arab Emirates	0.1	6

OCEANIA

	Milk production (billion kg)	Per capita (kg)
New Zealand	22.0	4.288
Australia	8.8	338

WORLDWIDE

895.8
MILK PRODUCTION (BILLION KG)

113
PER CAPITA (KG)

Source: FAO, IDF, UN, ZuivelNL

Milk processing

Milk supply

In 2022, on balance the milk supply of the main dairy export countries dropped by 0.9% representing a volume of approximately 3.4 billion kg of milk. The drop had started in September 2021 and continued into 2022. It was strongest in the first half of the year, when dairy farmers hit the brakes even harder because of unfavourable margins as a result of sharply increased cost. In the third quarter there was also a slight decrease, followed by some stabilisation in the fourth quarter. In the EU and the US in particular, a recovery in milk supply could be observed, boosted by high milk prices.

In 2022, milk supply in the 27 EU Member States remained at nearly the same level (-0.1%) as in 2021. Germany (-0.5%), France (-0.7%) and Italy (-0.9%) saw their volumes drop. It was notable that the decline in Italy occurred mostly in the second half of the year, mainly caused by drought. In 2022, the Polish milk supply increased the strongest in absolute terms (+0.3 billion kg) and 2.1% in relative terms. Milk supply in the Netherlands (+1.0%), Belgium (+2.6%) and Ireland (+0.8%) also showed increases.

Like the EU, the US barely managed to achieve growth in its milk supply in 2022 (+0.1%). After the decline in the first half of the year, the milk supply recovered, thanks to an increase in the US dairy herd and in the milk yield per cow. Argentina also saw a stable development on balance. Unlike the EU and the US, Argentinean milk supply actually increased in the first half of 2022. This was followed by declining volumes in the second half of the year, especially in the fourth quarter, which was caused by major drought there.

The biggest drop occurred in Oceania. That development had already started during the second half of 2021. New Zealand's milk supply fell by more than 0.8 billion kg (-3.8%) in 2022, which was mainly due to disappointing weather conditions and unfavourable grass conditions. Australia's 0.6 billion kg drop was even more substantial in relative terms (-6.8%). The high costs, regularly recurring climate problems, the decreasing number of dairy farmers and dairy cows combined with the large labour shortage limited the Australian dairy farming industry's development opportunities.

Milk processing

The Dutch dairy processing industry processed approximately 14.1 billion kg of milk in 2022, which is almost 3% less than in 2021. More than half of that milk was used for cheese production, which dropped by 1% to a volume of 949 thousand tonnes (including cottage cheese). Roughly 60% of the cheese produced was Gouda cheese. The production of butter and butter oil remained nearly steady. Less drinking milk and drinking milk products were produced (-4%). The production of skimmed milk powder decreased by more than 2%. The production of non-skimmed milk powder dropped considerably (-24%), which was caused by a huge decrease in export.

Structure

At the end of 2022, the Dutch dairy processing industry consisted of 26 businesses with a total of 54 production locations. Five of those businesses were cooperatives, that process milk at 25 locations. The production value of the Dutch dairy industry increased by as much as 26% in 2022 to an estimated € 10.3 billion. That increase reflected the striking rise in the market prices for all products on the dairy market. For each 100 kg of processed milk, the production value rose by almost 30% compared to the value in 2021.

INDUSTRIAL DAIRY PRODUCTION THE NETHERLANDS

million kg

	2021	2022[1]	2022/2021
Milk delivered to dairies	13,687	13,821	1.0%
Milk available for processing	14,500	14,100	-2.8%
Drinking milk and other fresh milk products[2]	1,077	1,030	-4.3%
Cheese (including cottage cheese)	958	949	-1.0%
Butter and butteroil	219	220	0.4%
Non-skimmed milk powder[3]	166	126	-23.9%
Skimmed milk powder	73	75	2.4%

[1] Based on the development in the monthly figures.
[2] Excluding added ingredients, including cream.
[3] Estimation.

Source: RVO, ZuivelNL

INTERNATIONAL MILK DELIVERIES

Milk deliveries in the leading exporting countries of the world

	VOLUME 2022	ABSOLUTE DEVELOPMENT COMPARED TO 2021	RELATIVE DEVELOPMENT COMPARED TO 2021
	billion kg	*billion kg*	%
EU-27	144.4	-0.1	**-0.1%**
Germany	31.0	-0.1	**-0.5%**
France	24.0	-0.2	**-0.7%**
The Netherlands	13.8	0.1	**1.0%**
Italy	13.0	-0.1	**-0.9%**
Poland	12.8	0.3	**2.1%**
Ireland	9.1	0.1	**0.8%**
Denmark	5.7	0.0	**0.4%**
Belgium	4.4	0.1	**2.6%**
Other	30.6	-0.3	**-0.9%**
USA	102.3	0.1	**0.1%**
New Zealand	21.1	-0.8	**-3.8%**
United Kingdom	15.3	-0.1	**-0.8%**
Argentina	11.8	0.0	**0.0%**
Australia	8.5	-0.6	**-6.8%**
Uruguay	2.2	-0.0	**-1.4%**
Other[4]	46.5	-1.7	**-3.6%**

[4] Brazil, Canada, Chile and Türkiye.

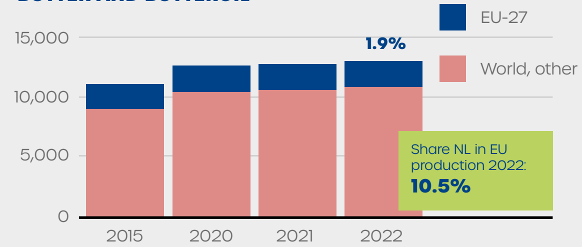
Source: Eurostat, national statistics, RVO

GLOBAL PRODUCTION OF A NUMBER OF DAIRY PRODUCTS

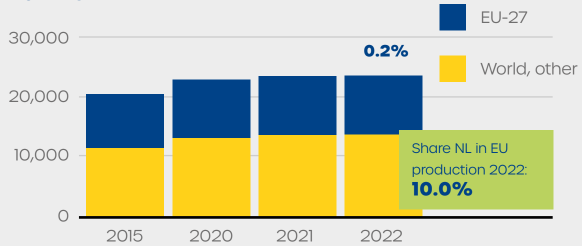
million kg

Relative development compared to 2021

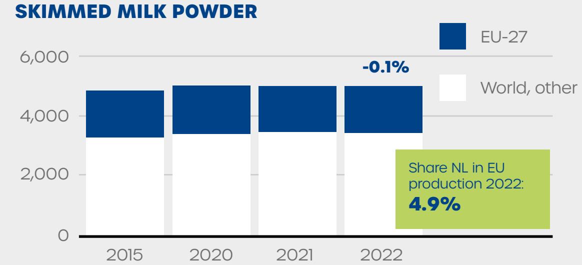
BUTTER AND BUTTEROIL



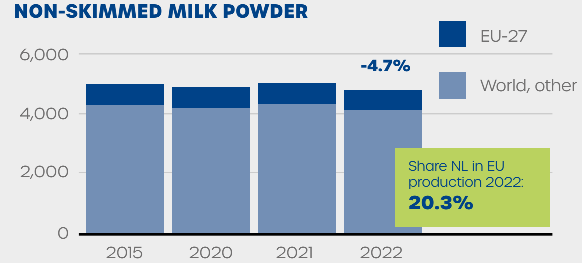
CHEESE



SKIMMED MILK POWDER



NON-SKIMMED MILK POWDER



Source: Eurostat, IDF, national statistics, RVO, USDA, ZMB, ZuivelNL

GEOGRAPHICAL SPREAD OF MILK PROCESSING INDUSTRY

Situation from 31-12-2022

- FrieslandCampina (19)
- Vreugdenhil Dairy Foods (3)
- Ausnutria (2)
- A-ware (2)
- DOC Kaas (DMK) (2)
- Kaasmakerij Henri Willig (2)
- Klaverkaas (2)
- Lactalis Leerdammer (2)
- Nutricia (Danone) (2)
- Rouveen Kaasspecialiteiten (2)
- Arla Foods **NIJKERK**
- CONO Kaasmakers **WESTBEEMSTER**
- Den Eelder **WELL**
- De Graafstroom **BLESKENSGRAAF**
- 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**
- Wheyco (DMK) **HOOGEVEEN**
- Zuivelhoeve **HENGELO OV**

KEY STATISTICS NETHERLANDS

	2020	2021	2022
Companies [5]	26	26	26
Number of dairy plants:	53	52	54
Cooperative	*26*	*25*	*25*
Non-cooperative	*27*	*27*	*29*
Milk processed (million kg)	14,620	14,500	14,100
Production value (million euro)	7,575	8,150	10,275

[5] Which process more than 10 million kg of (raw) milk, cream and/or whey.

Source: RVO, ZuivelNL

TOP-20 LARGEST DAIRY COMPANIES

Turnover in 2021 + mergers and acquisitions between 1 January and 30 June 2022

	COMPANY	COUNTRY	TURNOVER	
			billion US dollar	billion euro
1	**Lactalis**	France	26.7 [6]	22.6 [6]
2	**Nestlé**	Switzerland	21.3 [6]	18.0 [6]
3	**Danone**	France	20.9 [6]	17.7 [6]
4	**Dairy Farmers of America**	USA	19.3	16.3
5	**Yili**	China	18.2 [6]	15.4 [6]
6	**Fonterra**	New Zealand	14.8 [6]	12.5 [6]
7	**Mengniu**	China	13.7	11.6
8	**FrieslandCampina**	The Netherlands	13.6	11.5
9	**Arla Foods**	Denmark/Sweden	13.3	11.2
10	**Saputo**	Canada	12.0	9.6
11	**Unilever**	The Netherlands/UK	8.3 [6]	7.0 [6]
12	**Savencia**	France	6.6	5.6
13	**Gujarat Co-operative Milk Marketing Federation**	India	6.3	5.3
14	**Sodiaal**	France	5.9 [6]	5.0 [6]
15	**Meiji**	Japan	5.9 [6]	5.0 [6]
16	**Agropur**	Canada	5.8	4.9
17	**Müller**	Germany	5.7 [6]	4.9 [6]
18	**DMK**	Germany	5.2 [6]	4.4 [6]
19	**Schreiber Foods**	USA	5.1 [6]	4.3 [6]
20	**Froneri**	UK	5.0	4.2

[6] Estimate.

Source: Rabobank

Sustainability

Sustainable Dairy Chain
ZuivelNL finances and manages the programme for the 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), the Dutch Dairymen Board (DDB) and the dairy companies united in the Dutch Dairy Association (NZO). Through the Sustainable Dairy Chain the dairy farmer organisations and dairy companies work together towards a more future proof dairy chain.

SECTOR CARBON FOOTPRINT FROM THE DAIRY CHAIN

Greenhouse gas emissions in Mton CO2 equivalents

	2015	2016	2017	2018	2019	2020
Production of raw materials (especially feed and fertilizer)	7.59	8.06	8.10	7.50	7.01	7.28
Dairy farms (milk and meat production)	14.52	15.31	14.51	13.83	13.47	13.62
Milk processing (including milk transport and packaging)	1.48	1.52	1.52	1.46	1.39	1.41
TOTAAL	23.59	24.89	24.13	22.79	21.87	22.31

PROGRESS IN ENERGY EFFICIENCY IN THE DAIRY CHAIN

Objective: annual reduction of 2% compared to reference year 2005

m3 natural gas equivalents per 1,000 kg milk

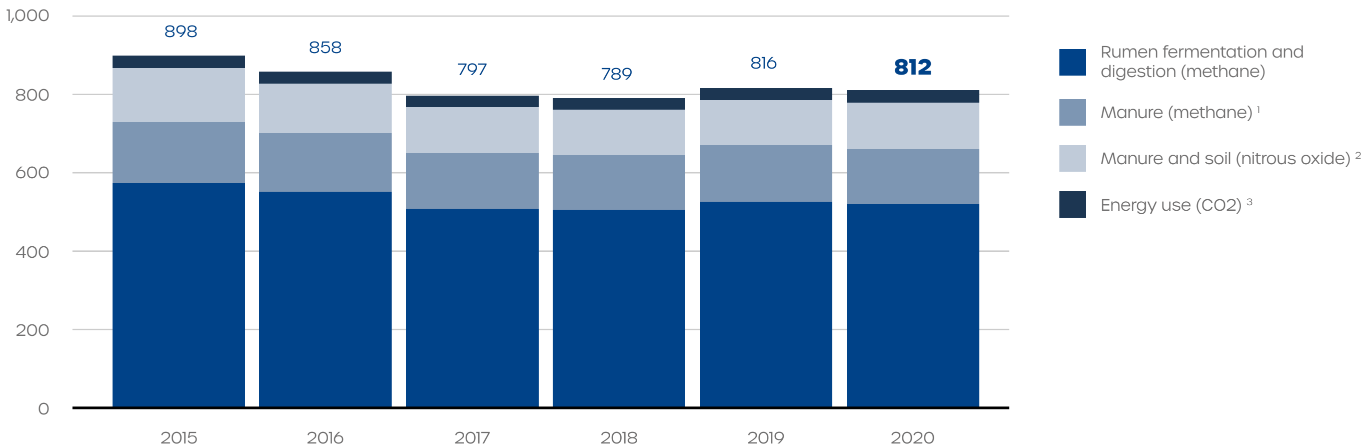
	2015	2016	2017	2018	2019	2020
Dairy farming	23.4	22.8	23.0	22.1	20.6	20.6
Milk transport	2.0	1.9	2.0	1.9	1.9	1.9
Milk processing	33.4	32.7	32.5	31.4	29.8	29.8
TOTAL	58.7	57.4	57.5	55.5	52.3	52.4
Objective	67.5	66.1	64.8	63.5	62.3	61.0

Source: Sustainable Dairy Chain, 2020 Report (ZuivelNL)

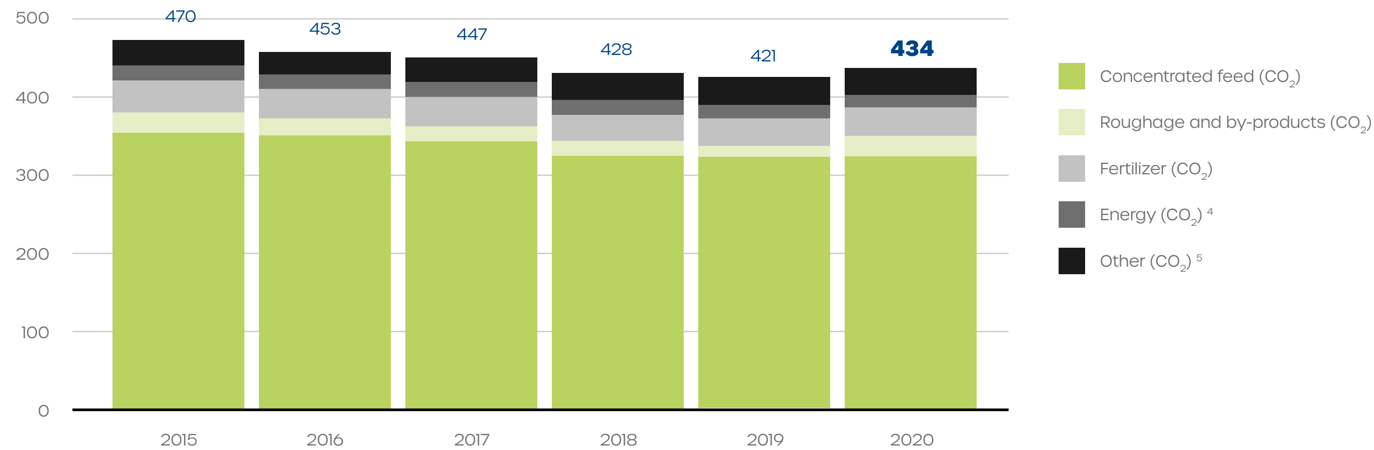
PRODUCT CARBON FOOTPRINT DAIRY FARMING

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

ON THE DAIRY FARM

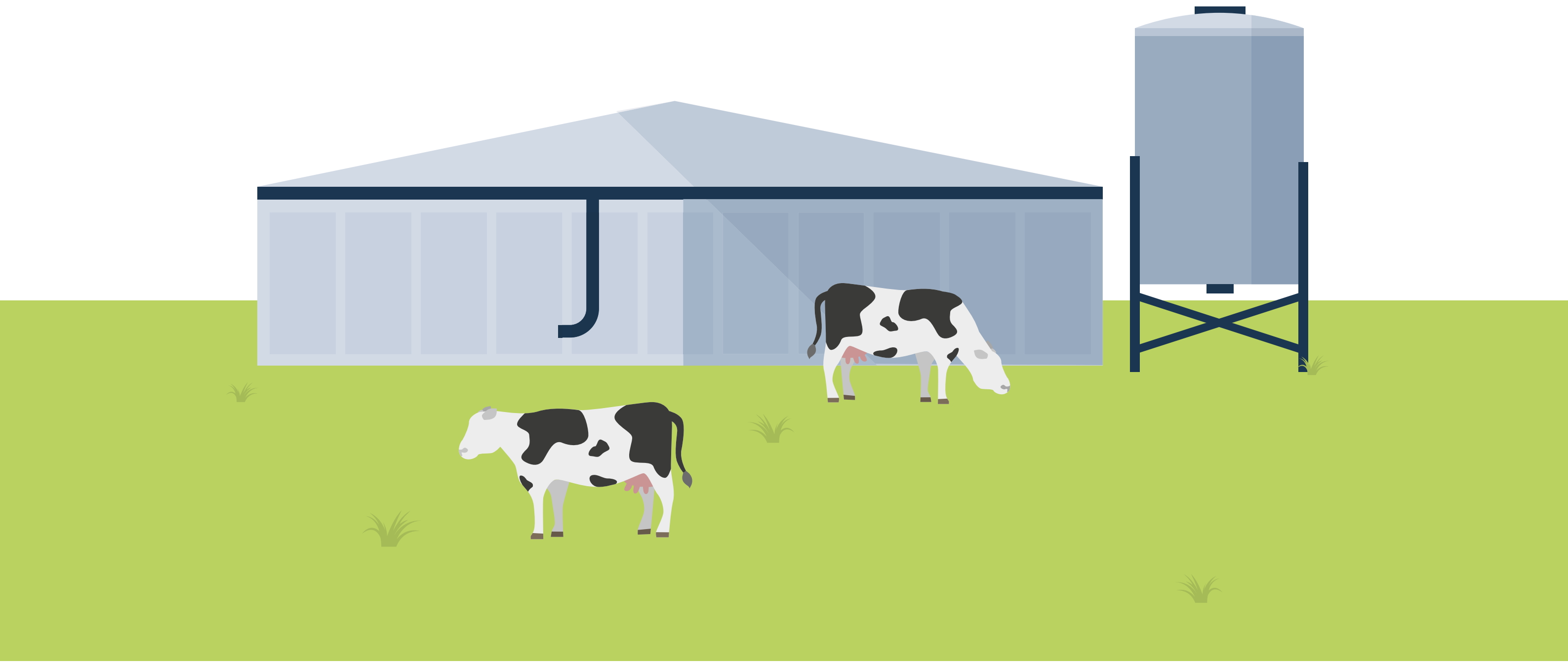


IN PRODUCTION OF RAW MATERIALS

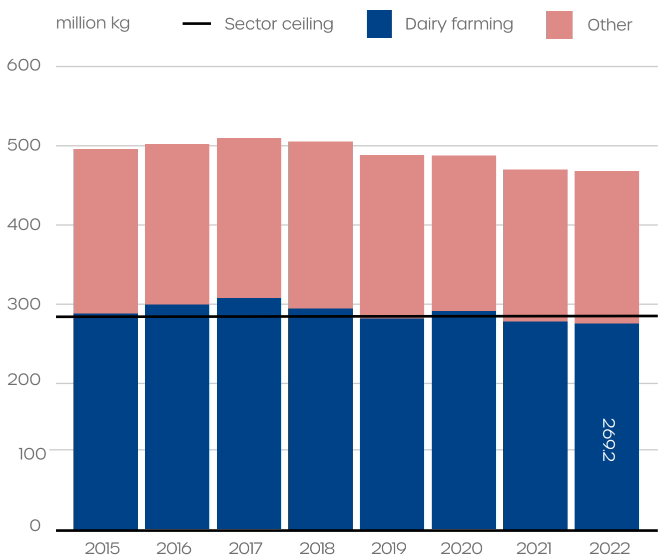


[1] Animal manure emissions from fermentation processes in an anaerobic environment.
[2] Emissions from nitrification and denitrification processes in the storage of animal manure and in the soil, and the indirect emission after atmospheric deposition of N-compounds and by washout of N from agricultural 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, 2020 Report (ZuivelNL)

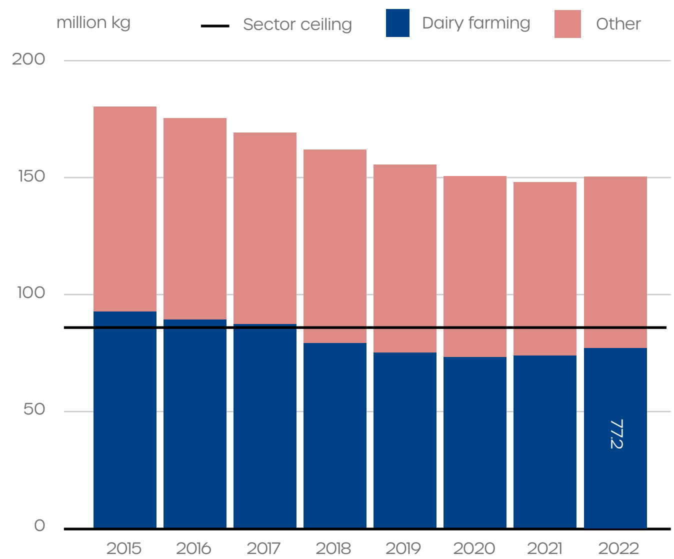


NITROGEN PRODUCTION IN ANIMAL MANURE



Sector ceiling dairy farming 281.8 million kg

PHOSPHATE PRODUCTION IN ANIMAL MANURE

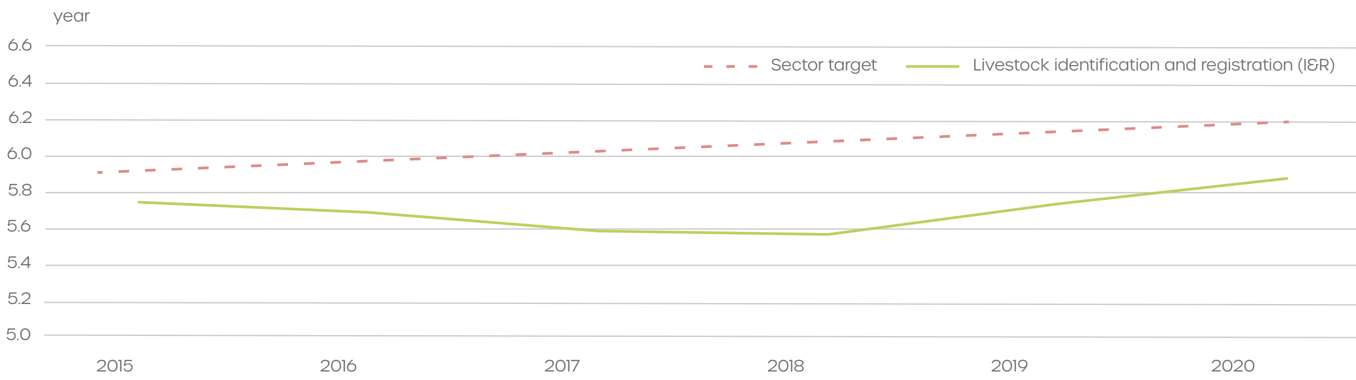


Sector ceiling dairy farming 84.9 million kg

Source: Statistics Netherlands (CBS)

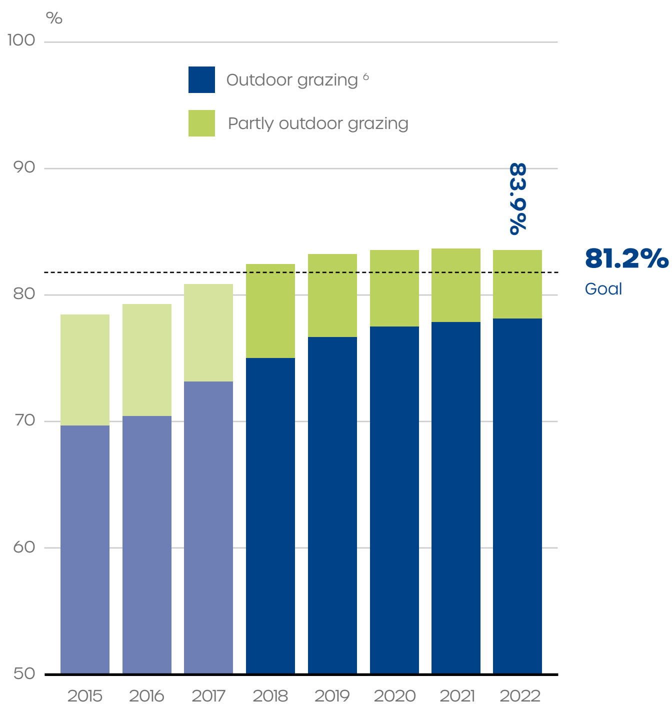
LIFESPAN OF DAIRY COWS

Average age at removal



Source: Sustainable Dairy Chain, 2020 Report (ZuivelNL)

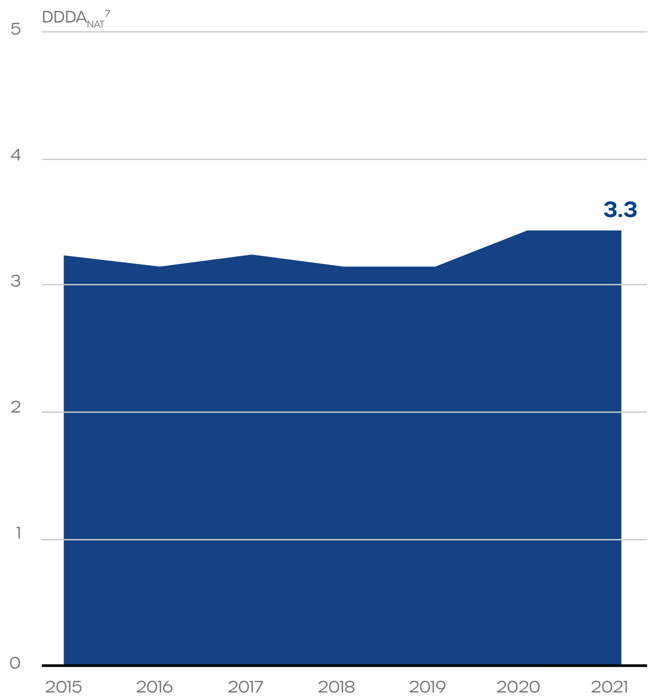
OUTDOOR GRAZING



[6] With 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



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

Source: Sustainable Dairy Chain (ZuivelNL)

Trade

Export

In 2022, the Dutch dairy export value increased by 32%, reaching a level of almost € 10.8 billion. This was not only the result of the substantially higher dairy market prices, but also of the volume growth in a number of product groups. With the exception of whey products (drop in lactose), all product groups contributed to the value increase, in particular butter and butter oil (+45%), cheese (+27%), and skimmed milk powder (+54%). The latter two categories also showed an increase in volume. This was particularly the case for skimmed milk powder (+11%). The export value of non-skimmed milk powder also increased sharply (+18%) despite a sharp drop in volume (-23%).

The EU traditionally is the most important sales region for Dutch dairy products. With a value of almost € 7.8 billion, exports to EU Member States represented over 72% of the total export value in 2022. When also taking into account the other European countries, the share is even close to 76%. Neighbouring countries Belgium and Germany alone, together with France, represent almost 52% of the total Dutch dairy sales.

The Netherlands is one of the most active EU Member States on the world market. The Dutch share in world trade, which amounted to approximately 90 billion kg of milk equivalents in 2022, was almost 4.5%. Outside the EU, South Korea was the largest market for dairy from the Netherlands in 2022, representing 3% of the total export value. The UK and China (including Hong Kong) both accounted for more than 2% of the total.

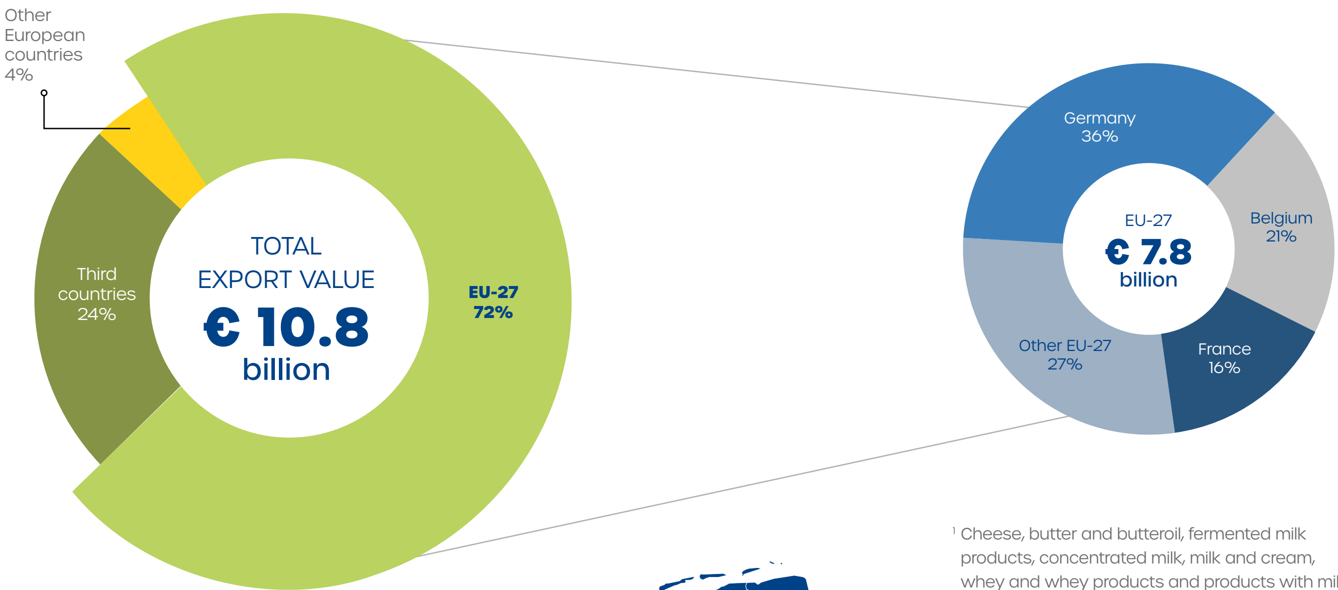
For the main product group, i.e. cheese, the export volume increased by almost 3% to 970 thousand tonnes. Remarkably, for the second year in a row, the export of Dutch cheese types (Edam, Gouda and Maasdam) dropped sharply (2022: down 20 thousand tonnes; 2021: down 25 thousand tonnes). The export of Gouda, in particular, saw a significant drop (-5%). After several years of strong increases, the export of Mozzarella dropped by almost 3%. The significant increase in the export of grated cheese (+21%) also stands out. This possibly concerns the transit of foreign products, as the import of grated cheese also saw an important increase.

Most of the absolute growth in the export of cheese was realised in the 27 EU Member States (+3%) and Asia (+3%). In 2022, exports to Asia more than recovered from the contraction in 2021. Considerably less cheese was exported to Central and South America.

Import

In addition to being an exporter, the Netherlands is a large importer of dairy from other EU Member States, primarily from Germany, Belgium and Ireland. The share from other origin countries outside the EU is 5%, two thirds of which comes from the UK. In 2022, the import value saw significant growth to almost € 5.5 billion (+36%). The import of cheese, milk and cream and whey products increased sharply in terms of both volume and value. For most other products, only the value increased. The Dutch dairy trade surplus was € 5.3 billion in 2022, which is significantly higher than in 2021 (+29%).

DUTCH EXPORT VALUE [1] PER DESTINATION



[1] 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: Eurostat, ZuivelNL

DUTCH EXPORTS TO BELGIUM, GERMANY AND FRANCE

Germany

PRODUCT	Volume (million kg)	Value (million euro)
Cheese	309	1.527
Butter and butteroil	114	663
Milk powder	29	110
Milk and cream	107	219
Other [2]	- [3]	249
Total	- [3]	2.767

Belgium

PRODUCT	Volume (million kg)	Value (million euro)
Cheese	105	564
Butter and butteroil	44	262
Milk powder	31	109
Milk and cream	535	540
Other [2]	- [3]	125
Total	- [3]	1.601

France

PRODUCT	Volume (million kg)	Value (million euro)
Cheese	95	512
Butter and butteroil	76	484
Milk powder	11	50
Milk and cream	46	111
Other [2]	- [3]	72
Total	- [3]	1.228

Source: Eurostat, ZuivelNL

[2] Condensed milk, fermented milk products, milk and cream, whey and whey products and products with milk constituents.
[3] Addition not possible due to diversity in products.

TRADE BALANCE

IMPORTS

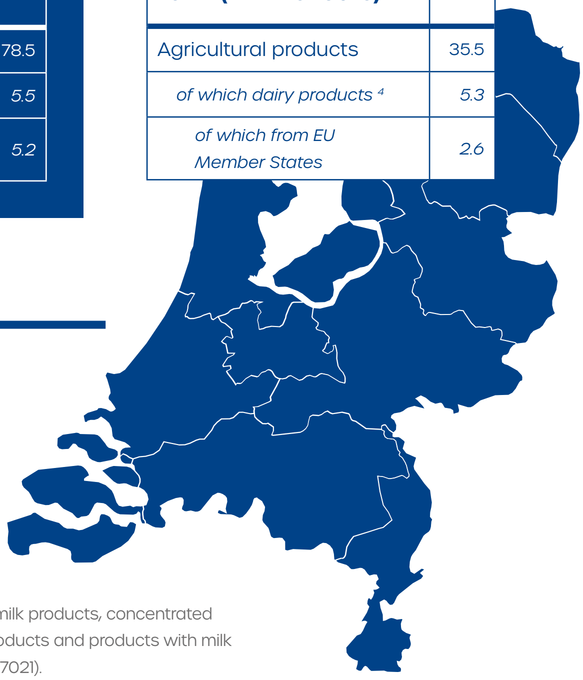
billion euro

TOTAL (ALL PRODUCTS)	685.8
Agricultural products	78.5
of which dairy products [4]	*5.5*
of which from EU Member States	*5.2*

Positive trade balance

billion euro

TOTAL (ALL PRODUCTS)	71.3
Agricultural products	35.5
of which dairy products [4]	*5.3*
of which from EU Member States	*2.6*



EXPORTS

billion euro

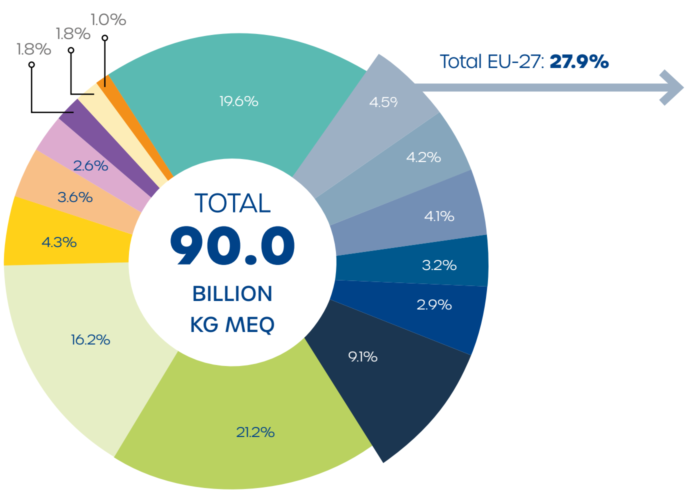
TOTAL (ALL PRODUCTS)	757.2
Agricultural products	113.9
of which dairy products [4]	*10.8*
of which from EU Member States	*7.8*

Source: Eurostat, Statistics Netherlands (CBS), ZuivelNL

[4] 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).

POSITION OF DUTCH DAIRY EXPORTS ON THE WORLD MARKET

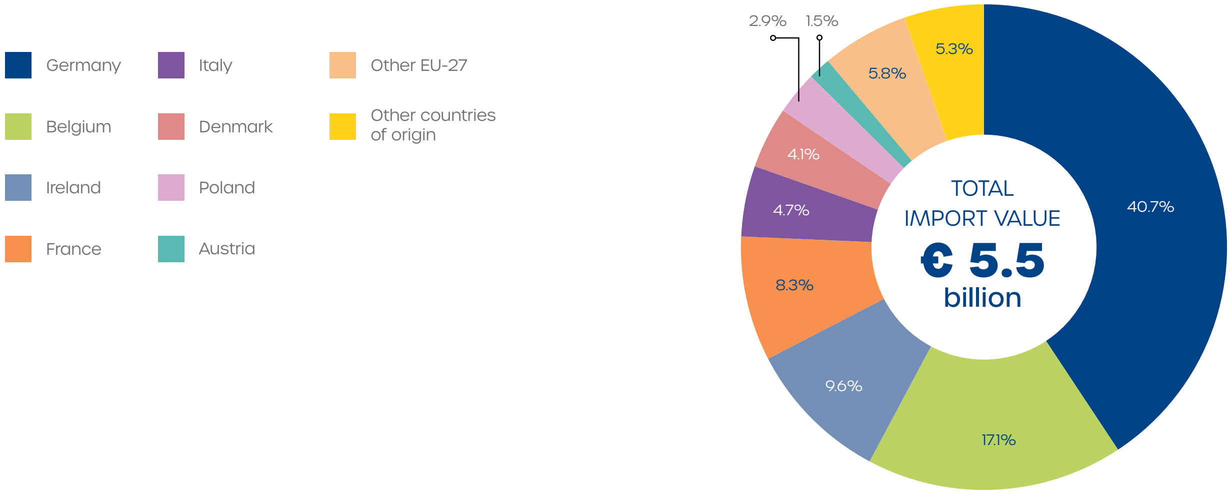
Export shares of the most important dairy exporting countries (in % of total world trade. expressed in milk equivalents)



Dutch exports to third countries:
4.0 billion kg. In % of world trade: **4.5%**

Source: Comtrade, Eurostat, ZuivelNL

COUNTRIES OF ORIGIN OF DUTCH IMPORTS



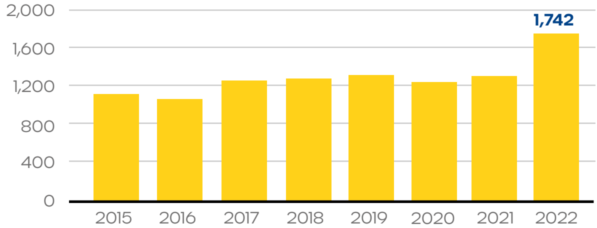
Source: Eurostat

DEVELOPMENT DUTCH IMPORTS

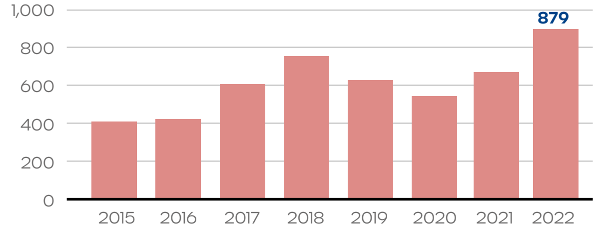
(including intra trade)

million euro

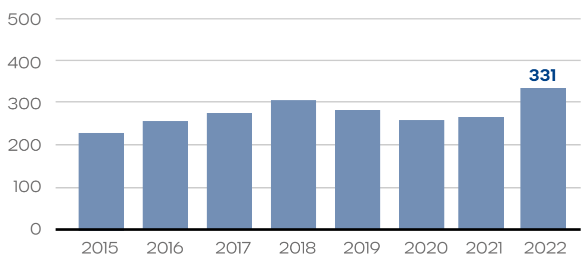
CHEESE



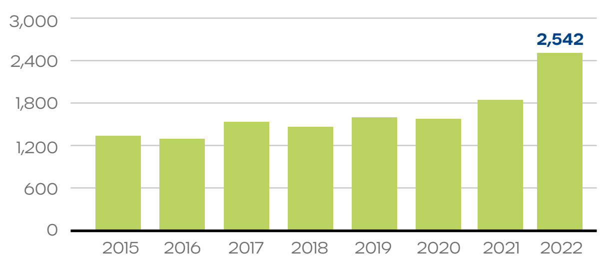
BUTTER AND BUTTEROIL



MILK AND CREAM [5]



OTHER [6]



[5] In small packages for consumers.
[6] Milk powder, condensed milk, fermented milk products, whey and whey products, milk and cream (in bulk).

Source: Eurostat

Consumption

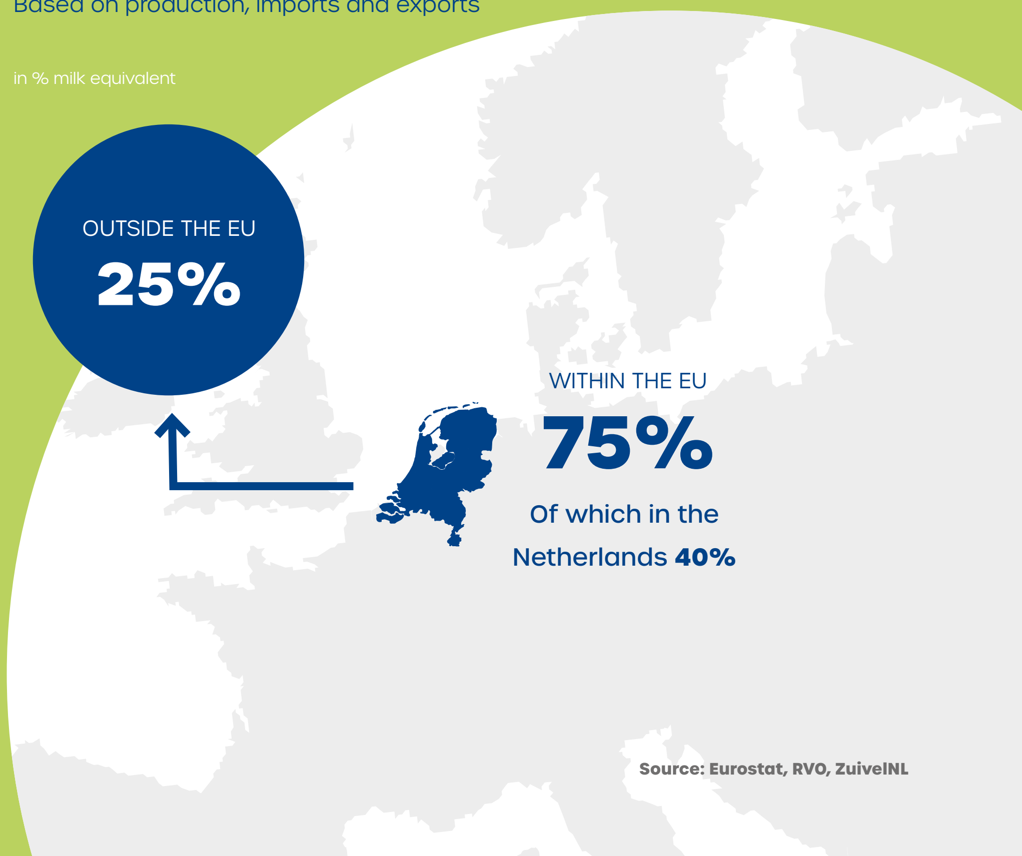
The Netherlands has a long tradition of dairy consumption. Milk, cheese, yoghurt and dairy desserts are part of the daily diet of many Dutch people. The fact that milk and dairy products also contribute to improving people's health is shown by the fact that dairy has a place in the Netherlands Nutrition 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.

With the Food Consumption Survey (VCP), the Dutch National Institute for Public Health and the Environment (RIVM) maps out the dietary patterns of about 3,500 children and adults. The VCP provides information about what, where and when Dutch people eat and drink, and links this to the guidelines of the Health Council of the Netherlands. The latest poll, conducted from 2019 to 2021, shows that the average Dutch person consumes 337 grams of dairy products on a daily basis. Milk and milk drinks, yoghurt and cheese (including cottage cheese) are the leading categories at 180 grams, 70 grams and 49 grams, respectively. Cheese is an important part of Dutch dairy consumption. Dutch cheese consumption per capita has been above the European average for years. The consumption of cheese per capita, including quark and goat's cheese, is between 20 and 25 kg. Of the dairy available in the Netherlands (expressed in milk equivalents), which consists of national milk production and imports, approximately 30% is consumed in the domestic market. The remaining 70% is exported, most of which is sold in the EU, especially in our neighbouring countries.

DESTINATION OF AVAILABLE DAIRY PRODUCTS IN THE NETHERLANDS

Based on production, imports and exports

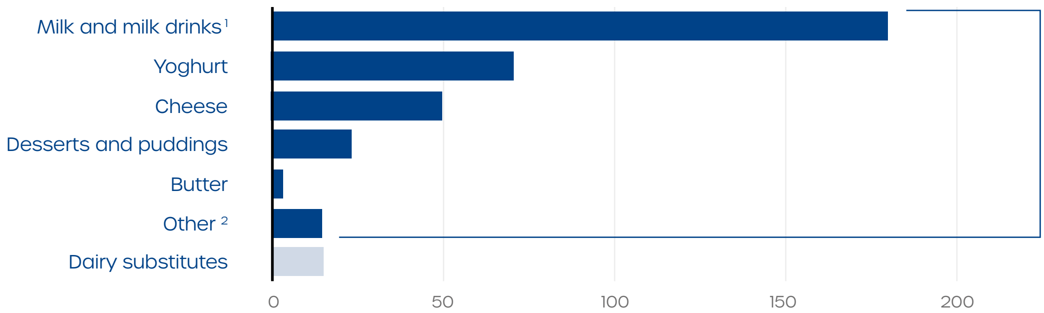
in % milk equivalent



Source: Eurostat, RVO, ZuivelNL

DAIRY CONSUMPTION IN THE NETHERLANDS

Grams per day, total population 1-79 years



TOTAL CONSUMPTION

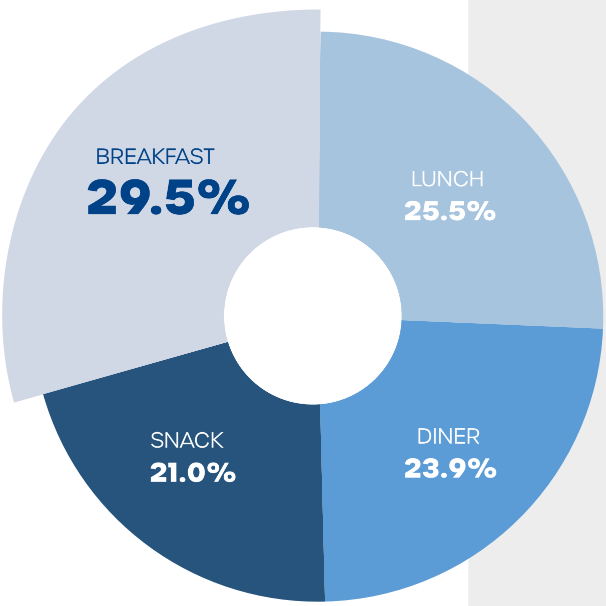
337

grams per day [3]

[1] Including buttermilk and yoghurt drinks.
[2] Including (coffee) cream and other products with dairy ingredients.
[3] Excluding dairy substitutes.

DAIRY [4] CONSUMPTION BY MOMENT OF INTAKE

% of total consumption, total population 1-79 years

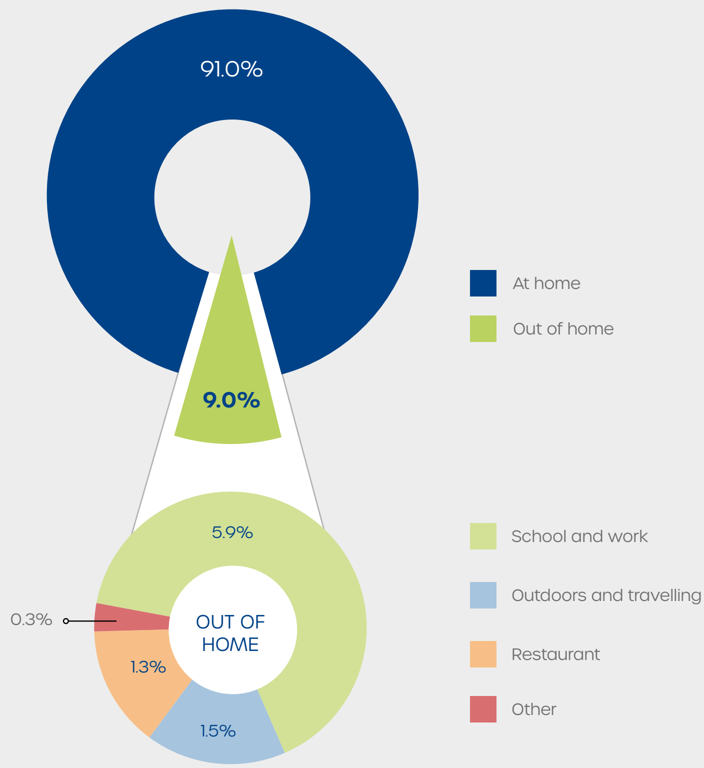


[4] Including dairy substitutes.

Source: Food consumption survey 2019-2021 RIVM

WHERE IS DAIRY [4] CONSUMED?

% of total consumption, total population 1-79 years



ZuivelNL
KETENORGANISATIE VAN DE ZUIVELSECTOR

Dutch Dairy in Figures 2022 (Zuivel in Cijfers 2022) is a publication of ZuivelNL. It provides an overview in figures of the key developments in the Dutch dairy industry.

ZuivelNL's mission is to strengthen the Dutch dairy chain while maintaining respect for mankind, animals, the environment and society as a whole. To facilitate discourse between dairy farmer interest groups and dairy companies in its capacity as an industry organisation, and to create added value through joint initiatives. ZuivelNL's members are the Dutch Dairymen Board (DDB), the Netherlands Agricultural and Horticultural Association (LTO), the Dutch Dairy Farmers' Union (NMV), and the Dutch Dairy Association (NZO).

For more information about ZuivelNL, visit **www.zuivelnl.org**

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ZUIVELNL
BENOORDENHOUTSEWEG 46
2596 BC DEN HAAG
INFO@ZUIVELNL.ORG
WWW.ZUIVELNL.ORG
KVK 59667222

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