The Dutch dairy sector (source Dutch dairy board www.prodzuivel.nl)

1. INTRODUCTION

About 120 years ago, when the first dairy factory was established in the Netherlands, total annual milk production was about 2 million tonnes. At that time the Netherlands had a population of 4 million people. Fifty years later both milk production and population had doubled. After the Second World War the rise in milk production outstripped the growth in population. In the period between the 1930s and 2000, the Dutch population doubled, but milk production almost tripled. The expansion of dairy farming in the Netherlands gained momentum after 1960.

Since then, the Netherlands have become a major exporter of dairy products, selling about 60 percent of domestic milk production abroad. Nowadays the Dutch dairy sector has about 22 thousand dairy farms with 1.4 million dairy cows. Annual milk production amounts to 11 billion kg and the bulk of this is processed into cheese, butter, powdered milk, fresh milk products and specialities. A small proportion of the milk is processed on the farm. Some 300 wholesalers (cheese, butter and powder) and 6,000 sales outlets are involved in the trade in and sales of dairy products. The dairy sector as a whole provides around 62 thousand jobs.

The Dutch dairy sector is characterised by a high degree of organisation. Each segment of the production chain has its own organisation to represent its interests. Farmers are represented by the Dutch Organisation for Agriculture and Horticulture (LTO-Nederland), industry by the Dutch Dairy Organisation (NZO) and traders by the Joint Dairy Federation (Gemzu). These organisations all participate in the Board of Governors of the Dutch Dairy Board, which includes representatives of employers and employees from every segment of the Dutch dairy sector, covering dairy farming, dairy industry, wholesale and retail trade in dairy products. The Board has regulatory powers, which means it can impose regulations with which all dairy farmers, dairy processors and traders must comply. Levies are imposed to finance promotion, research, animal healthcare and quality projects. In addition to serving as a platform for discussion on developments in national and international dairy policy, the Board also acts as an information and knowledge centre for the dairy sector in the Netherlands. Finally, the Dairy Board is in charge of implementing the quota system and other dairy related EU regulations (e.g. trade, school milk etc.).

Many other organisations are involved in the Dutch dairy complex. The institute NIZO Food Research plays an important role in dairy research and technology development. The Research Station for Animal Husbandry has a focus on research on dairy farming issues. Since mid 2007, Qlip is the central organisation for quality assurance in the Dutch Dairy sector. This new entity includes the Dutch Organisation for Certification of Dairy Farms (OCM), which is involved in dairy farm monitoring, the Netherlands Controlling Authority for Milk and Milk Products (COKZ) and the Netherlands Milk Control Station (MCS), which both are responsible for all quality control related issues in the dairy sector. The Animal Health Service Deventer (GD) provides services in order to prevent and deal with veterinary diseases. Furthermore, activities in the field of generic promotion of Dutch dairy produce on the domestic market and abroad form an integrated part of the NZO scope of activities, as does the dissemination of information on the relation between dairy and health.

2. DAIRY FARMING

2.1 History and present position

The rapid rise in milk production since 1960 can be attributed to a process of increasing specialisation and mechanisation in dairy farming, coupled with scale enlargement. The development towards more specialisation is illustrated by the change in position of the mixed farm. Whereas such farms were extremely common in the first half of the 19th Century, nowadays they are almost non-existent. Increased specialisation and mechanisation in their turn contributed to and reinforced the ongoing process of up scaling. In 1960 average milk production per farm was 37,000 kg. Nowadays, the average Dutch dairy farm produces nearly 500,000 kgs of milk a year. Dairy farming is one of the most important sectors of Dutch agriculture. Approximately 60% of agricultural land in the Netherlands is used by dairy farmers. Milk alone accounts for approximately 17% of the total production value of Dutch agriculture.

2.2 Dairy farms

As in many mature dairy economies, dairy farming development in the Netherlands is characterised by falling cow numbers, a decline in the number of dairy farmers and an ever increasing level of farm technology and milk yield. The long-term tendency of decline in the number of dairy farms in the Netherlands continued in 2006. The number decreased with another 5% to 22,300 dairy farmers. This means a 40% decline since the mid-nineties. Meanwhile, total output of Dutch dairy farms remains fairly stable: apparently, the ever decreasing number of Dutch farmers is able to fill up the Dutch total milk quota (for deliveries 11,052 million kgs in the 2006/'07 season) in force under the EU-quota regime. As a consequence, the average farm production levels tend to go up each year.

Number of dairy farms in the Netherlands: classified according to the number of dairy cows per farm

	1-29	%	30-69	%	>70	%	Total
1995	11,355	30.3	19,823	52.9	6,287	16.8	37,465
2000	6,855	23.3	16,231	55.1	6,381	21.6	29,467
2005	4,031	17.1	11,603	49.3	7,893	33.6	23,527
2006	3,505	15.7	10,619	47.6	8,177	36.7	22,301

Source: CBS Agricultural census

The average farm size, as expressed in production volume, reached 493.000 kgs in 2006. This is about 64% above the 1995 level. This increase stems from both an improved milk yield and an increased per-farm cow number. In 2006, the average number of cows per farm grew further, up to almost 64 cows per farm. As a consequence, the number of large holdings with 70 cows or more is also on the increase. In 2006, those farms almost reached a 37% share in total farm number. Nearly all cow's milk produced in the Netherlands is delivered to factories (95%).

2.3 Dairy cattle

The Netherlands counted circa 1.4 million dairy cows in 2006. Since 1995, cattle numbers have declined by on average 1.7% per year. In 2006, the overall, average milk yield was about 7,744 kgs per cow per year but milk yield of recorded cows scored an average that by far exceeded 8,000 kgs.

Number of dairy cows. average milk yield and total milk production in the Netherlands

	Dairy cow numbers (x 1.000)	Average milk yield (kgs)	Average milk yield recorded cows (kgs) (a)	Milk production (x 1.000 tonnes)	Share of milk delivered to factories
1995	1,708	6,613	7,508	11,294	95.9%
2000	1,504	7,296	8,418	10,974	96.2%
2005	1,433	7,554	8,029	10,827	96.6%
2006	1,420	7,744	8,127	10,995	96.9%

(a) rolling year average on a 365-days basis Source: CBS Agricultural census / LEI / Dutch Dairy Board

The traditional breeds in the Netherlands were the Friesian Hollands (FH), the Maas, Rijn and IJssel (MRIJ) and the Groningen. The FH population was almost entirely patched black/black and white with a small amount of patched red. MRIJ cattle are patched red. Friesland Holland cows and bulls have been sold in North America since the middle of the 19th century and formed the basis of the Holstein Friesian (HF) breed.

Holstein Friesian nowadays is the dominant breed, accounting for more than 95% of Dutch black and white cattle. The central breeding organisation in the Netherlands is CR-Delta, which is a co-operative with 27,000 members and part of the Dutch-Belgian company CRV Holding BV. The Netherlands' export of cattle, embryo's for breeding and dairy production purposes is substantial. For the year 2005/06, CR-Delta reported the emission of more than 50,000 export certificates by NRS, the Dutch cattle improvement organisation. In addition to this, trade in more than 1.5 million doses of semen was reported. Much information on Dutch breeding is on-line available through the organisation's website (www.cr-delta.nl).

3. DAIRY PROCESSING INDUSTRY AND TRADE

3.1 History and present position

Before 1870 all dairy produce was produced on farms. The first dairy factories were established in 1871. By 1910 there were no fewer than 958 butter factories and 291 cheese factories. Since then an ongoing process of concentration and scale enlargement has been evident in the processing industry as well. As in the case of dairy farming, this process accelerated in the 1970s and 1980s. Nowadays the Dutch dairy industry is one of the most consolidated in the world. It is dominated by the co-operative structure. This situation stems from a longstanding tradition in the Netherlands: co-operatives owned by dairy farmers have been in place since the early days of the dairy industry. Consequently, they were also part of the process of consolidation that accelerated over the past decades. Nowadays, two major, international oriented co-operatives process almost 80% of the milk delivered to factories. These two largest dairy companies, Campina and Royal Friesland Foods, are also among the world's largest.

Leading dairy companies in the Netherlands by turnover (2006)

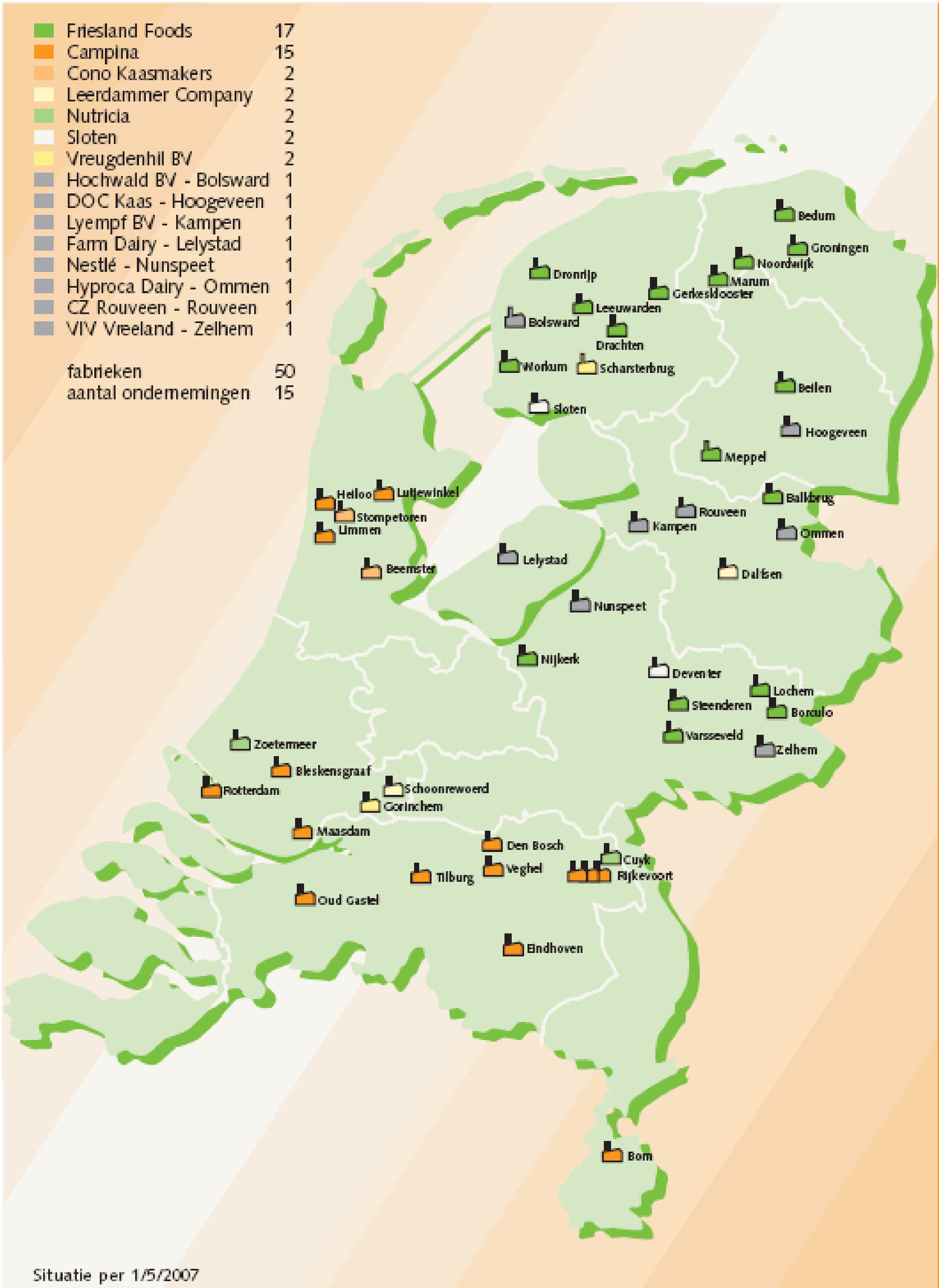
	Company	Structure	Turnover (billion €)
1.	**Royal Friesland Foods**	co-operative	4.7
2.	**Campina**	co-operative	3.6
3.	**D.O.C. Hoogeveen**	co-operative	0.4
4.	**Bel Leerdammer**	private	0.3
5.	**Nestlé Nederland (a)**	private	0.2

(a) estimate of dairy related activities in the Netherlands Source: Annual Reports / Productschap Zuivel (Dutch Dairy Board)

3.2 Factories

As of 1 May 2007, the heart of the Dutch dairy industry consisted of 15 companies, operating a total number of 50 factories. Of these factories, almost two third belonged to the leading companies Friesland Foods and Campina. For historic reasons, production facilities of the former are mainly located in the northern and eastern parts of the country while the latter dominates the southern and western parts of the country (see map).

Location of dairy factories in the Netherlands (as of 1 May 2007)



Source: Productschap Zuivel (Dutch Dairy Board)

3.3 International orientation

The Dutch dairy industry has been able to achieve a strong competitive international position based on its high standards with respect to both technology and quality and taking advantage from the long tradition of the Netherlands as a trading nation. With the current export value amounting to around € 3.7 billion, the Netherlands are among the world's major dairy exporters. Export revenues represent a large share of total annual sales by the Dutch dairy industry. About 60% of Dutch dairy produce goes for export, the remaining being consumed on the domestic market. The EU is the most important export market for Dutch dairy produce, accounting for two third of total dairy export value in 2006. Of this, about 70% was related to dairy products sold to Germany, France and Belgium.

Besides export, the Netherlands is also a major importer of dairy produce, because the country is an important entrepot, re-exporting much of its imports to the rest of Europe and beyond. Thus, the Netherlands also functions as a kind of springboard into other markets in Western Europe and the world. In 2006, total Dutch dairy imports valued almost € 1.9 billion.

3.4 Summary of Dutch production and trade in 2006

Milk deliveries to factories and production of milk and milk products in The Netherlands (x 1.000 tonnes)		
	2006	**2006/2005 +/-**
-Milk deliveries:	10,656.6	+1.7%
-Cream	11.8	-4.9%
-Milk and milk products	1,434.6	-3.6%
-(factory) Cheese (a)	714.0	+6.2%
-Butter	125.1	+5.3%
-Condensed milk (b)	308.9	+5.9%
-Whole milk powder - WMP	105.6	-1.5%
-Skimmed milk powder - SMP	48.9	-8.1%
-Whey powder (c)	264.0	-1.3%

(a) including cottage/fresh cheese;

(b) including coffee milk

2006 preliminary figures

Source: Productschap Zuivel (Dutch Dairy Board)

Dutch exports of milk and dairy products (x 1,000 tonnes)						
	2006			% change compared to 2005		
	EU-25	Third countries	Total	EU-25	Third countries	Total
Cheese	455.3	86.6	541.9	+8.1%	+11.3%	+8.6%
Butter	76.0	51.7	127.7	+9.7%	-9.4%	+1.1%
Butter oil	34.5	15.6	50.1	-4.5%	-28.6%	-13.6%
Condensed milk	123.1	137.5	260.6	+27.0%	+5.4%	+14.6%
WMP	14.6	144.9	159.5	+2.2%	+1.1%	+1.2%
SMP	21.7	21.5	43.2	-24.4%	+24.4%	-24.4%

Source: Productschap Zuivel (Dutch Dairy Board)

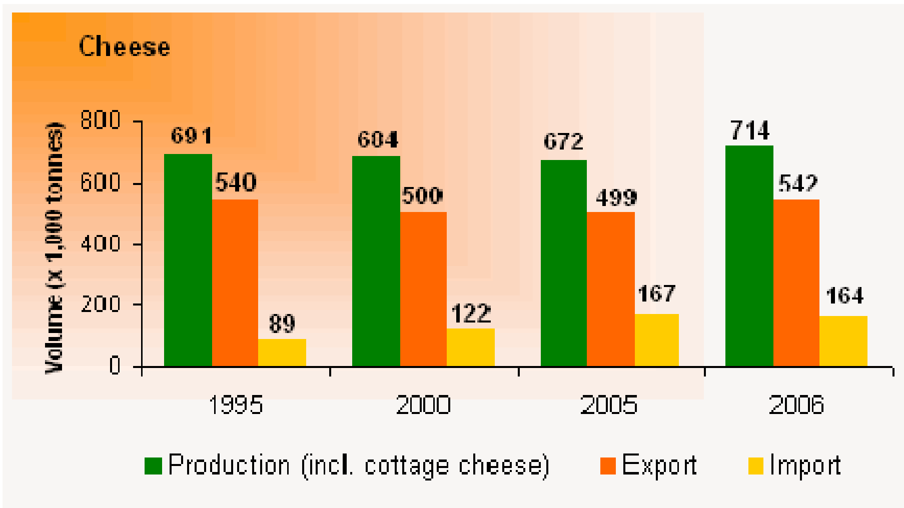
3.5 Cheese: the leading dairy product in the Netherlands

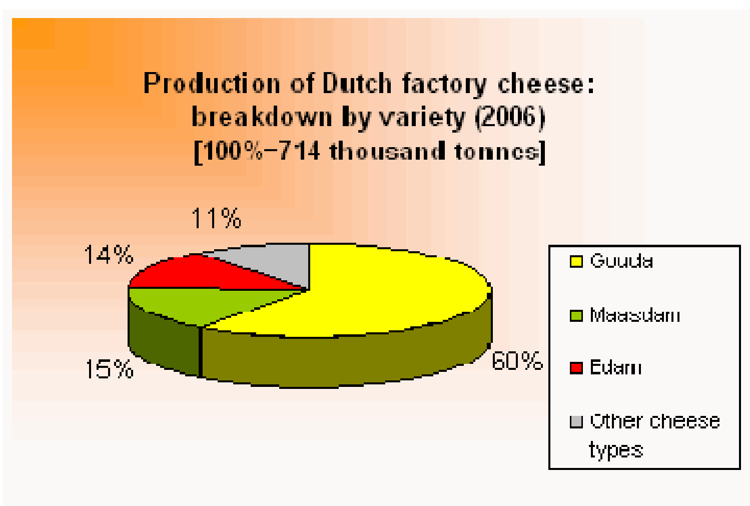
Cheese is by far the most important dairy product in the Netherlands: about half of the milk is destined to cheese production. Gouda cheese is the dominant variety, representing 60% of total Dutch factory cheese volume. In 2006, for the first time in history Dutch cheese production (including cottage cheese) exceeded the 700 thousand tonnes barrier, reaching a volume of 714 thousand tonnes, 6% above the previous year level.

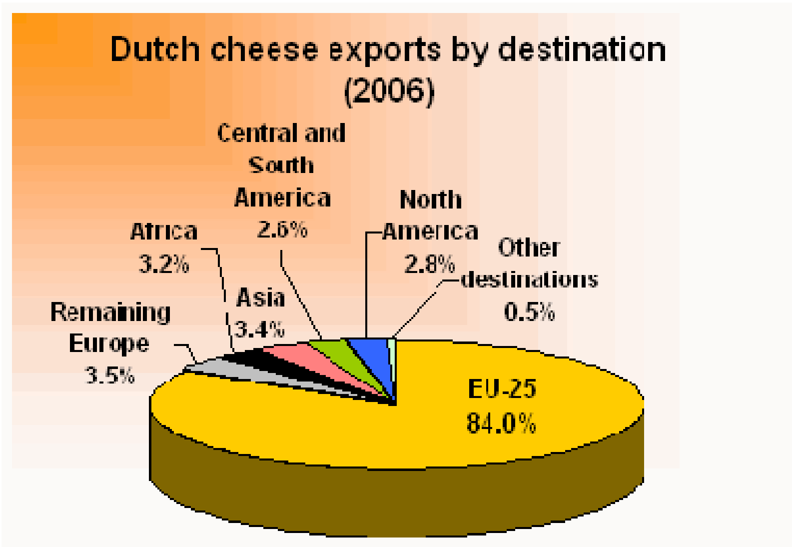
In line with production expansion, Dutch cheese exports soared in 2006, reaching a volume of 542 thousand tonnes, well above the 2005 volume (+9%). Cheese exports represented an export value of about €1.9 billion, which was about half of the Dutch total export value for dairy.

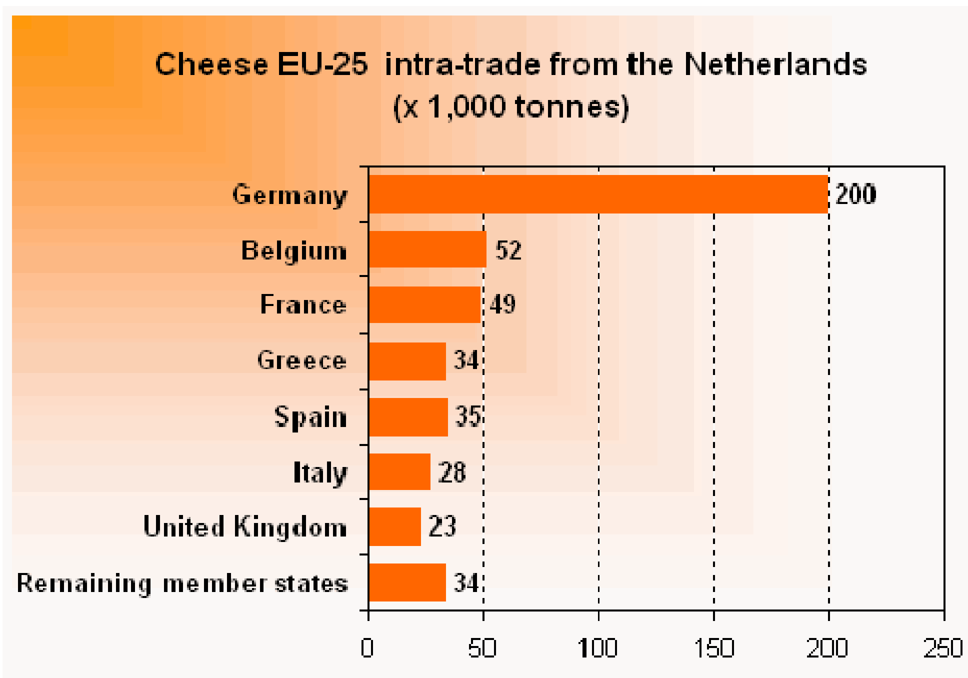
Dutch cheese exports in majority go to destinations within the EU (84%). Neighbour country Germany is by far Holland's most important cheese market, absorbing 37% of total cheese export volume in 2006. Cheese exports to

EU destinations increased by 8%, showing growth in all major cheese destinations in the EU. Trade developments to third countries (+11%) were dominated by a strong increase in the exports to Russia (+44%). With 17,000 tonnes Russia became the main destination for Dutch cheese outside the EU in 2006. Meanwhile, Dutch sales into another important cheese markets were stable (US, Egypt) or fell back slightly (Japan, Algeria and Mexico).









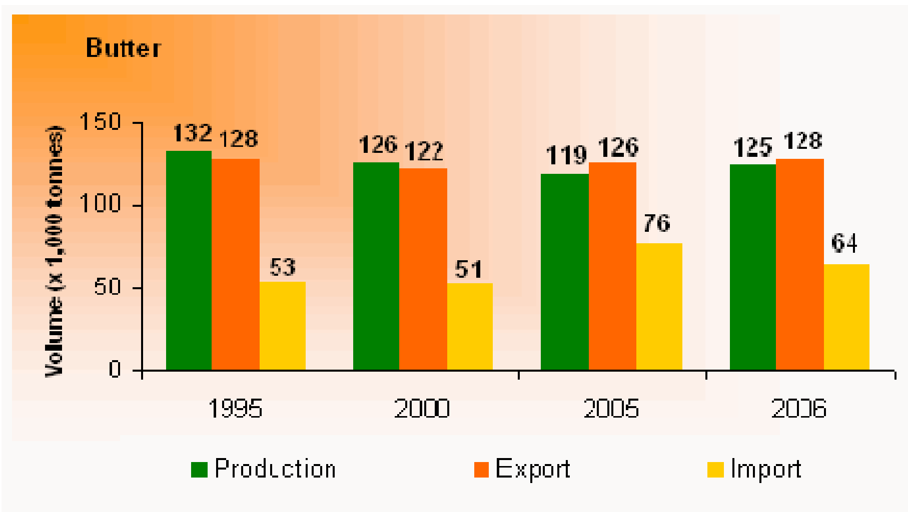
Source: Productschap Zuivel (Dutch Dairy Board)

3.6 Butter: 2006 production and EU exports up, third country trade down

In 2006, Dutch dairy factories produced more butter than in the year before. Total butter production was up 5%, reaching a volume of 125 thousand tonnes. This development differed from that in all other important butter producing countries in the EU (like Germany, France, Ireland and Poland), where butter production fell back.

Total Dutch butter exports slightly increased (+1%), to a volume of almost 128 thousand tonnes in 2006. This was however the result of two opposite developments: a strong increase of exports to EU destinations on the one hand (+10%) and a sharp drop in third country exports on the other (-9%). Consequently, in 2006 about 60% of total volume remained within EU borders, much more than in the previous year. Most of the intra trade went to Belgium (31%), France (30%) and Germany (23%).

Outside the EU, important butter markets like Iran, Morocco, Singapore and Egypt all bought less product. Rays of hope were a very strong increase in the butter exports to Saudi Arabia (+60%), which became the leading destination for Dutch butter exports outside the EU, and some recovery in the trade with Russia, after the low point in 2005.



Source: Productschap Zuivel (Dutch Dairy Board)

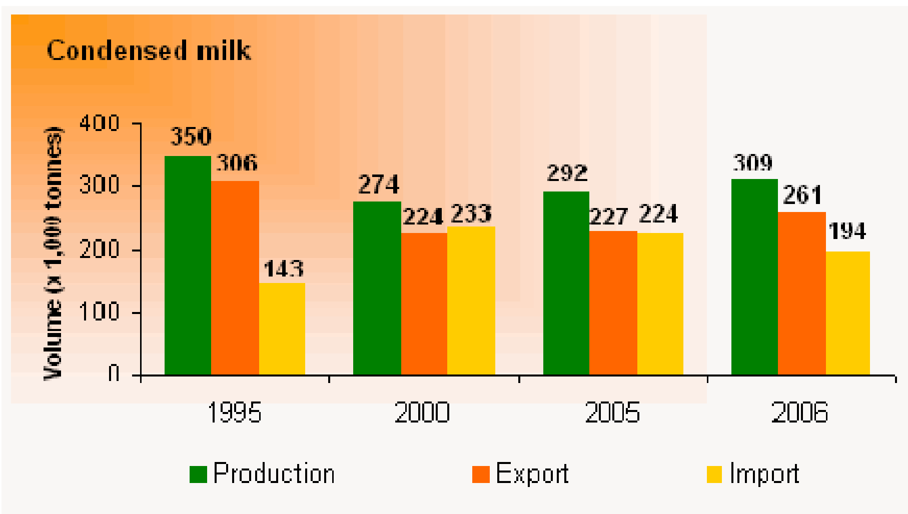
3.7 Condensed milk: production and trade keep increasing in 2006

The Netherlands is one of the major players in condensed milk products worldwide, holding a 20% share in global trade volume. Dutch production in 2006 reached a volume of nearly 309 thousand tonnes, up 6% compared to the previous year level. Both sweetened and unsweetened product showed growth. The expansion of Dutch production is triggered by an increase in global demand for condensed milk.

Consequently, Dutch exports of condensed milk grew by almost 15% in 2006, up to 260 thousand tonnes. This increase was mainly attributable to the increased export of unsweetened condensed milk, which reached a volume of 207 thousand tonnes (+17%). This made unsweetened condensed milk cover about 80% of total Dutch export volume in condensed milk products in 2006, the highest share ever. Meanwhile, exports of sweetened condensed showed a more moderate increase, up 5% to 53 thousand tonnes.

Most growth in the exports of unsweetened condensed milk took place in the EU. More produce went to all important EU markets. As a result, the share of EU destinations in total export volume for this category increased to almost 43%. Meanwhile, also third country exports expanded (+6%). For this, particularly trade with Asia and Middle East was responsible, while demand from Africa as a whole was somewhat stagnant. Especially oil producing states like United Arab Emirates and Qatar bought more produce. In 2006, third country export of unsweetened product covered 57% of total volume.

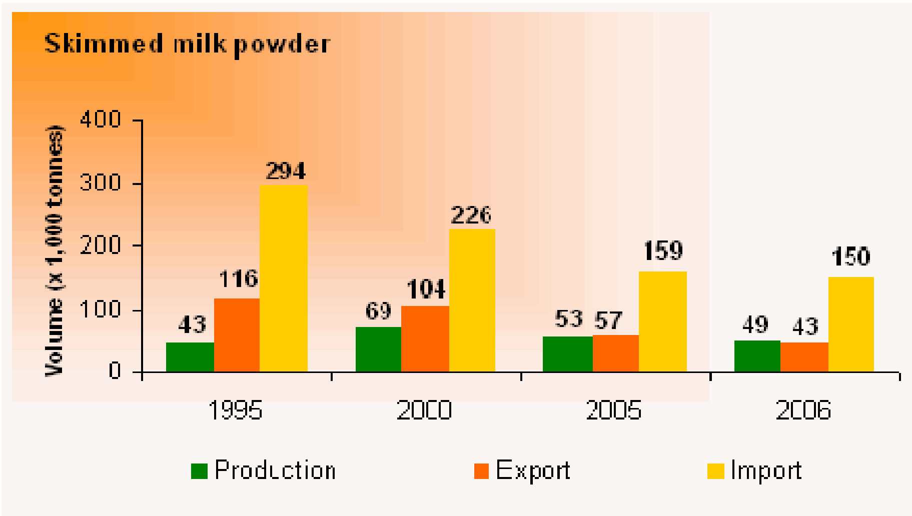
As for sweetened condensed milk, exports merely focus on other EU-member states, that received two thirds of total volume in 2006. UK was the largest buyer, responsible for 24% of total volume. The export to third countries more or less stabilised. Saudi-Arabia remained the number one destination outside the EU, representing a volume of 8% of total exports.



Source: Productschap Zuivel (Dutch Dairy Board)

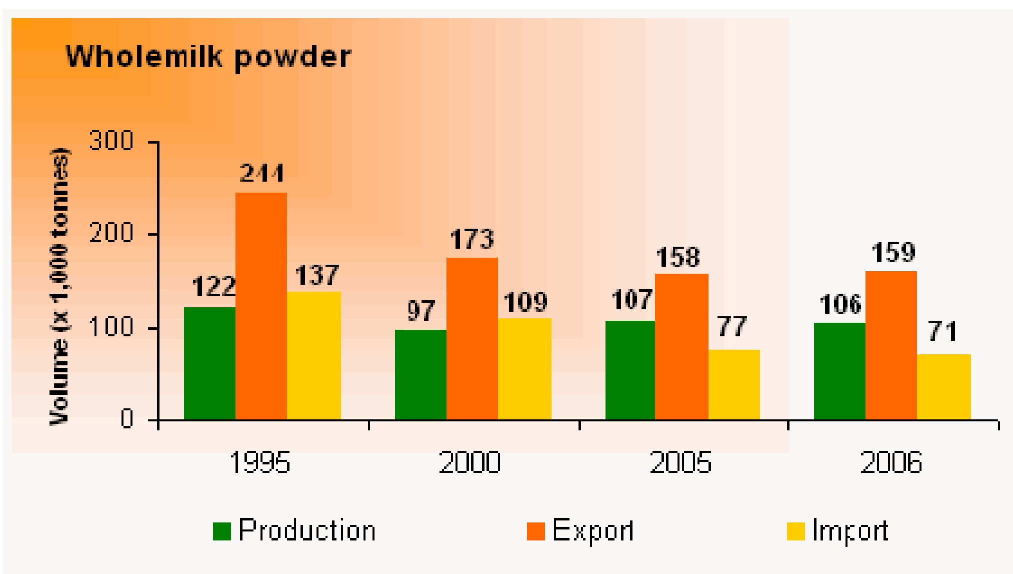
3.8 Milk powder: less production and exports in 2006

Milk powder, especially whole milk powder (WMP), forms a significant product category for the Dutch dairy sector. In 2006, total milk powder production amounted to about 154 thousand tonnes, 4% less compared to the previous year. Almost 70% of this volume refers to WMP. It was especially the production of SMP that fell back strongly (-8%), down to a volume of 49 thousand tonnes, which is a continuation of the trend observed over the past few years. In line with this, also SMP exports to both EU and third country destinations further dropped, down to a volume of 43 thousand tonnes (-24%).



Source: Productschap Zuivel (Dutch Dairy Board)

About half of the SMP export volume was sold in the EU, with Belgium, Germany and France being the main destinations. Third country trade dropped by nearly 16%, to a volume of 22 thousand tonnes. In this trade, Nigeria, Vietnam and Thailand were the main destinations.



Source: Productschap Zuivel (Dutch Dairy Board)

In 2006, Dutch industries produced a bit less than 106 thousand tonnes of WMP (-1.5% compared to 2005). After the sharp drop in that same year, Dutch exports stabilised in 2006, to reach a total volume of 159 thousand tonnes (+1%). Typically, this trade mainly went to third countries (91%). The Middle East and increasingly Africa host the main destinations. Saudi-Arabia has since long been the number one market. In 2006, the trade volume to this country was lifted to nearly 29 thousand tonnes (+15%). On the other hand, after years of growth, the export volume to Nigeria sharply dropped, down to 12 thousand tonnes (-34%), still to remain Netherlands' second destination overseas. Meanwhile, WMP exports to Angola soared, to reach almost 12 thousand tonnes, to become the number third destination for Dutch WMP.

4. CONSUMPTION

In the Netherlands, the consumption of milk and dairy products stems from a long tradition, since environmental and climatic conditions of the country allowed pasture and cows, as well as its products, to become a natural part of Dutch people's lives. Dairy consumption is therefore relatively high. For most products it is above the average level of the European Union, which on a global scale is already not only a leading dairy producer but also a leading dairy consuming region. Liquid milk, cheese and dairy desserts are part of the daily diet for most Dutch people. Traditionally, Dutch lunch goes with sandwich, often with sliced cheese, in combination with a glass of milk. In drinking milk, the Dutch usually go for the fresh product. The emphasis in liquid milk consumption therefore lies on pasteurised, semi-skimmed milk (73% of total liquid milk consumption in 2006). Despite the still strong traditions in specific uses of milk and dairy products, the days are certainly changing. This means that many other eating patterns have developed in the course of time, particularly those pushing the out-of-home channel. But also there, dairy took its position, with the Dutch dairy industry offering innovative solutions in both traditional applications as well as in new value added products. This goes especially for the fresh products line (desserts, functional foods, health foods etc.).

Per capita consumption of milk and dairy products in the Netherlands (kgs)

	1995	2000	2005	2006
Consumption milk (a)	71.5	65.6	61.2	57.9
- of which pasteurised semi-skimmed milk:	44.2	42.8	44.7	42.3
Yoghurt (b)	20.3	20.1	19.5	19.6
Dairy desserts (custards. porridges)b	13.6	12.1	10.6	10.2
Cream	2.2	1.6	0.8	0.7
(factory) cheese (c)	16.1	18.6	19.4	19.4
Butter	3.5	3.3	3.2	3.3

(a) sold by dairies for national consumption. including chocolate milk. buttermilk and other drinks (excludes imports);

(b) sold by dairies for national consumption (excluding imports);

(c) from cow's milk only. including cottage cheese. excluding processed cheese.

Source: Dutch Dairy Board

When it comes to trends in dairy consumption in the Netherlands, liquid milk consumption is under pressure, while on the other hand the use of value added dairy drinks and fresh dairy desserts has been on the increase over the past years. In 2006, the total amount of consumption milk and fresh products brought into consumption by the Dutch dairy industry, was about 3.6% below the previous year level. The consumption milk category was fully responsible for this. Total per capita consumption of consumption milk and consumption milk products was about 123 kgs.

Though, as in most categories, the consumption of (milk)fat has been under some pressure over the past period, butter consumption in the Netherlands seems to stabilise these years. Especially in bakery and special products it still finds many solid fields for application. In 2006, the per capita butter consumption was pinned at 3.3 kg. Cheese remains a very popular product in the Netherlands. Per capita consumption has been constantly on the rise over the past period and for factory cheese only, was about a bit over 19 kgs in 2006. However, present growth patterns in consumption tend to weaken, resulting in some stabilisation in consumption volumes. Apart from the traditional sliced cheese, cheese nowadays finds its way to consumers through many different food applications, in particular in the fast food and ready-to-eat meal segment (for instance pizzas).