



# European dairy policy

in the years to come

*Impact of quota abolition on the dairy sector*

# European dairy policy in the years to come: impact of quota abolition on the dairy sector

Siemen van Berkum and John Helming LEI - Wageningen UR

The Hague  
The Netherlands

Agricultural Economics Research Institute  
P.O.Box 29703, 2500 LS The Hague  
The Netherlands  
Telephone: +31 70 3358330  
Fax: +31 70 3615624  
E-mail: [informatie@wur.nl](mailto:informatie@wur.nl)

[www.lei.wur.nl](http://www.lei.wur.nl)

September 2006

Design and production: The KEY Agency, Amsterdam

# Contents

## Abstract

|          |   |    |
|----------|---|----|
| <b>1</b> | Background  | 1  |
| <b>2</b> | Trends in dairy farm structures, milk prices and dairy farm income      | 2  |
| <b>3</b> | Possible price developments under further trade liberalisation          | 5  |
| <b>4</b> | Quota abolition and price effects at the EU dairy market                | 8  |
| <b>5</b> | Policy scenarios and model simulations for the Dutch dairy farms sector | 10 |
| <b>6</b> | Implications for the dairy industry                                     | 13 |
| <b>7</b> | Transitional policies: ways to quota abolition                          | 16 |
| <b>8</b> | Conclusions   | 18 |

## Abstract

This paper examines EU dairy sector and market developments, and the likely impact of the milk quota removal. The latter is illustrated by model simulations focused on the Dutch dairy farm sector. Declining milk prices raise the question whether quota are still relevant to the sector. Ongoing trade liberalisation will further push down EU milk prices, with significant income effects. The Dutch case study shows that early quota abolition will be beneficial for larger farms eager to expand and enhances structural change. Implications for the European dairy processing sector are discussed too. The paper concludes by presenting sets of policy instruments that may facilitate the sector gradual adjustment to a situation without milk quota.

## Background

The present EU dairy market regime combines price support, through measures like intervention buying, import tariffs and export subsidies, with milk quotas to limit production levels. The 2003 Luxembourg Agreements on reforms of the Common Agricultural Policy (CAP) retain the quota system at least until 1 April 2015. In its policy statement 'Kiezen voor landbouw' ('The Choice for Agriculture'), published in Autumn 2005, the Dutch ministry of Agriculture, Nature and Food Quality announces the start of the discussion about the future of the EU milk quota system.

Background to this announcement is the EU agricultural ministers' decision to evaluate the 2003 Luxembourg Agreements in 2008. In that mid-term check-up of the CAP reform a review of the EU's dairy market regime is expected to take place, assessing the impact of the policy reforms on the sector and (international) market developments. In this context the process of ongoing international trade liberalisation is of major importance. Further reduction of export support and market protection in the framework of WTO may push EU milk prices further down, to a level where the quota system may not be effective anymore. The impact of quota removal may importantly be affected by its timing and conditions, as a Dutch study, exploring the consequences of quota abolition in 2015 or earlier for the dairy chain in the Netherlands, shows (Van Berkum et al., 2006). This study also proposes several policy instruments to smooth the sector's adjustments towards a situation without milk quota.

This paper summarises the major outcomes of this study, emphasising the broader context of international and EU market developments. First issues addressed are past trends in the sector's structure, milk prices and sector income, followed by an estimation of the most plausible EU price developments on medium term. The Dutch case is used to illustrate the impact quota removal may have under different policy scenarios. Implications for the European dairy processing sector are discussed too. The paper concludes by presenting sets of policy instruments that may facilitate the sector gradual adjustment to a situation without milk quota.

## Trends in dairy farm structures, milk prices and dairy farm income

Over the last decades the European dairy farm sector has gone through a tremendous structural change. Since the introduction of the milk quotas the number of dairy farms in EU-9 has shown a strong decline, while the average size of a dairy farm increased substantially in all countries (see table 1). The strongest decline in the number of dairy farms occurred in Italy (-80%), Denmark (-78%) and France (-73%). Increase in scale of production over the years was strongest in Italy (+254%), Denmark (+165%), Germany (+158%) and Ireland (+135%), noting though that except for Denmark, the size of the farms in these countries was rather low in the base year. Dairy farms in the UK and the Netherlands were the biggest in the EU-9 in 1983 and have, together with those in Denmark, most cows per farm in 2003. For all 9 member states together the number of farms declined by 72%. In most countries the dairy cow herd decreased by 40 to 45% over this period.

Behind these averages there are large differences in farm size in each country. In Denmark and the UK more than half of the dairy farms have over 100 milk cows. Also in Italy and Germany a substantial share of cows is on farms with more than 100 cows, but at the same time a relatively large share of the farms has less than 30 cows. In the Netherlands, most cows are on farms with 50 to 100 cows. Figure 1 presents the development in the structure in the Netherlands based on size classes, indicating the strong decline especially in the number of the small farms between 1990 and 2003/04. Extrapolating this trend to 2015, the number of (specialised) dairy farms in the Netherlands would fall

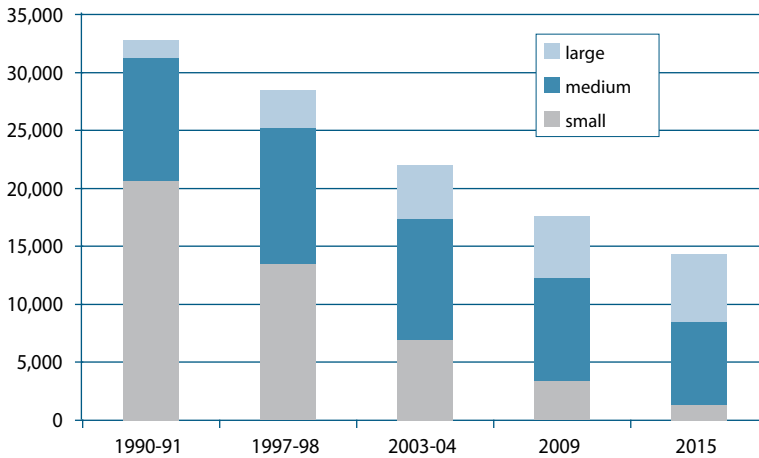
**Table 1** Number of farms with dairy cows and cows per farm in 1983 and 2003

|             | 1983    |           | 2003    |           | Index 2003 (1983 = 100) |      |           |
|-------------|---------|-----------|---------|-----------|-------------------------|------|-----------|
|             | Farms   | Cows/farm | Farms   | Cows/farm | Farms                   | Cows | Cows/farm |
| Belgium     | 48,740  | 20        | 16,570  | 35        | 34                      | 60   | 175       |
| Denmark     | 35,480  | 28        | 7,950   | 75        | 22                      | 59   | 265       |
| Germany     | 396,920 | 14        | 121,820 | 36        | 31                      | 79   | 258       |
| France      | 420,430 | 17        | 113,930 | 36        | 27                      | 56   | 207       |
| Ireland     | 91,440  | 18        | 27,000  | 43        | 30                      | 69   | 235       |
| Italy       | 331,530 | 8         | 67,500  | 28        | 20                      | 72   | 354       |
| Luxembourg  | 2,510   | 27        | 1,040   | 39        | 41                      | 59   | 143       |
| Netherlands | 63,540  | 40        | 25,000  | 59        | 39                      | 58   | 147       |
| UK          | 57,600  | 58        | 28,210  | 78        | 49                      | 66   | 134       |

Source: Eurostat, adapted by LEI

Figure 1

## Development of number of Dutch dairy farms, size classes, 1990-2015

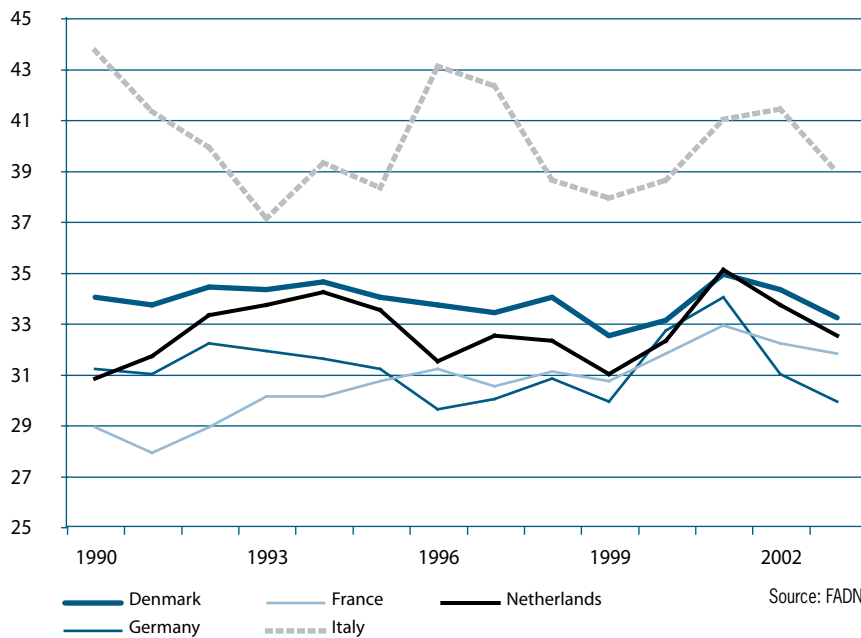


Note: Definition of small, medium and large: Small is farm producing < 350,000 kg milk/year; Medium: production between 350,000 and 650,000 kg milk/year; Large: over 650,000 kg milk/year.

from 22,000 to about 15,000. The share of small farms would decrease from over 60% in 1990 to 10%, while the share of the 'large farms' would increase from 5% to 40% in 2015.

Figure 2 presents (farm-gate) prices for milk in several EU member states. In Italy farmers receive the highest price. Prices in France have been upward in the 1990s, while in other countries milk prices have been rather stable over these years. Since 2001 prices have declined in all member states. This development is confirmed by the international milk price comparison assigned by LTO Melkveehouderij. This comparison of milk prices paid covers the operations of 14 large dairies in 8 different member states. The calculated average milk price paid was 32.19 euro/100 kg in 2001 and declined in the four following years to 28.65 euro/100 kg in 2005 (-11%). In the period January-April 2006 prices were on average 2.8% lower than in the same period in 2005 (LTO, 2006).

**Figure 2** Milk prices received by dairy farmers in selected EU member states (euro/100 kg)



A full implementation of the Luxembourg Agreements will result in a decline of the (nominal) income at farm level in the period 2003-2009 as price declines outweigh direct (compensatory) payments to dairy farmers. Calculations for the Dutch dairy sector estimate income declines between 8 and 10% in this period. If inflation, quota costs for expanding farms and other input costs are taken into account, income levels of those farms that stay in business would further deter. This brief evaluation of past developments indicates that when trends are simply extrapolated the number of farms will rapidly shrink while average farm sizes increase, yet income developments will be generally unfavourable.



## Possible price developments under further trade liberalisation

However, trend extrapolations are not taking into account the issue of further trade liberalisation – a major issue that will alter market conditions for agricultural commodities in the coming decade<sup>11</sup>. Multilateral trade liberalisation enhances the process of reducing the use of agricultural trade distorting measures. Consequently this process will further push down EU price levels of most agricultural commodities, such as milk. To what extent prices will fall depend on EU and external market developments and on the implications of the trade liberalisation agreement.

Recent medium-term projections of international dairy market developments by OECD/FAO (2005), FAPRI (2006) and the EC (2005) show, under the assumption of a reasonable favourable economic growth in the EU and elsewhere in the world, an increasing demand and trade in dairy products, largely in cheese and other dairy products than butter and milk powder. Consequently EU dairy production, limited by the milk quota system, will shift to these latter products with more value added. EU exports of cheese are projected to increase slightly.

According to the references mentioned, the increase in consumption of dairy products, most prominently in non-OECD countries, will result in higher international prices in the years up to 2012. These projections assume a continuation of the present government support to the sector and existing WTO trade agreement as laid down in the Uruguay Round Agreement on Agriculture.

However, in the coming decade further decline in trade distortion measures is most plausible and this process will affect prices at international and subsequently EU markets. One possible scenario of further trade liberalisation could be a WTO agreement that follows the EU proposition presented on 28 October 2005. For dairy products this EU proposal implies a considerable reduction of import protection. Butter, skimmed and whole milk powder are in the 60-90% tariff tier, proposed to be reduced by 50%. The import tariff on cheese (cheddar) should be reduced by 45%. What might this imply for EU milk and dairy prices?

When these tariff reductions will be implemented, minimal import prices will come closer to internal EU prices. Whether imports will enter the EU at competitive prices, depends on world market price levels. Following world market prices projected by OECD/FAO, import prices for butter and cheese could be lower than internal EU prices (see Table 2, comparing column 'f' with 'c'), but not if FAPRI projections are used (comparing column 'g' with 'c'). Both projections assume unchanged international trade

<sup>11</sup> Despite the suspension of the WTO negotiations in the Doha Round in July 2006, talks on this subject may be expected to resume following the general consensus that trade liberalisation will lead to increase overall economic welfare.

**Table 2** Consequences of lower market protection for EU dairy products

| Tariff line | Product | Present import tariff (in %) | Import tariff after implementation WTO (acc. to EU-proposal) (in %) | EU price 2012 (euro/ton) <sup>1)</sup> | World market price 2012 (euro/ton) <sup>2)</sup> |       | World market price + new import tariff (= EU import price 2012, euro/ton) |       |
|-------------|---------|------------------------------|---|--|--|-------|---|-------|
|             |         |                              |   |  | OECD/FAO   | FAPRI | OECD/FAO  | FAPRI |
|             |         | (a)                          | (b)   | (c)                                    | (d)  | (e)   | (f)   | (g)   |
| 04021019    | SMP     | 80.3                         | 40.1  | 1747                                   | 1735   | 2035  | 2431  | 2851  |
| 04022119    | WMP     | 63.9                         | 31.9  | 2110                                   | 1769   | 2088  | 2333  | 2554  |
| 04051019    | Butter  | 89.9                         | 44.9  | 2464                                   | 1603   | 1771  | 2323  | 2566  |
| 04069021    | Cheese  | 52.7                         | 29.0  | 2580                                   | 1968   | 2366  | 2539  | 3052  |

1) for butter and SMP: EC 2005; intervention prices, price for WMP and cheese based on Dutch Dairy Board;  
2) exchange rate 1 euro = US\$ 1.15.

policies. International price levels may rise, most probably, if in WTO context further reduction of import tariffs and export support is agreed. Even slightly higher price levels than estimated by OECD/FAO would result in a still effective protection of the EU market for internal produced butter and cheese despite the strong decline in import tariffs following the EU proposal. Extra imports, then, may not be expected under this scenario.

According to its own WTO proposal the EU will abolish export subsidies in the future. Already today export to some markets is not supported. However, comparison of world market prices (column 'd' or 'e') and internal EU prices (column 'c') in 2012 shows clearly that international prices, especially for butter and cheese, are significantly lower than EU prices, implying that without subsidies (a major part of existing) exports will fall substantially. To balance the internal market, the average price for dairy products will have to decline, and consequently the price for milk in the EU.

How much EU milk price should fall to maintain market positions and subsequently production levels depends on several aspects, such as the relative importance of the non-EU markets to EU producers, international supply and demand developments, and on dairy company strategies. First, milk and dairy products produced in the EU are largely consumed locally or inside the trade block, leaving an estimated 10% of production to non-EU markets. In terms of total sales, external markets are thus relatively small, yet relevant to the EU dairy sector. Second, the most recent OECD/FAO and FAPRI projections sketch rather favourable demand developments, inducing market opportunities especially

outside Europe, and expecting higher international prices. The EU dairy sector may also benefit from these developments by increased sales at more attractive prices. Third, dairy companies affect prices farmers receive for their milk by the set of products (commodities or differentiated, value added products) the companies produce and the markets they are operating on (EU or world markets, where to export support is necessary). There is a tendency towards an increasing focus on brand development and product innovation in a large part of the EU dairy processing industry (e.g. Everwand, 2006). Combining these three aspects may lead to the estimation that the eventual effect of a new WTO agreement on the European milk price could be rather limited. This estimate also follows the findings of the EDIM research consortium (reporting on dairy policy simulations in a project funded by the European Community, see the project website [www.edim.vitamib.com](http://www.edim.vitamib.com)), whose estimates show that the EU proposal in WTO will result into only slightly lower EU milk prices than what would be with a continuation of the Luxembourg Agreements. For our own model simulations we estimate 5% lower milk price in a WTO scenario compared to a reference scenario (that assumes no price changes after the full implementation of the Luxembourg Agreements).

## Quota abolition and price effects at the EU dairy market

The study also evaluates possible consequences of an early abolition of the milk quota system for the dairy sector. The estimated price effect in the EU of such a scenario is based on a number of recent studies assessing the impact of such a scenario.

In a 2002 working document, the European Commission (2002)<sup>2)</sup> estimates rather far-reaching price effects in the EU due to quota abolition. The basic assumption in the Commission's projections is the continuation of the Agenda 2000 policy until 2008, and the removal of the quota and price support per 2008. The Commission estimates 12% production growth and almost 40% price decline over the period 2000-2015 (CEG, 2002:34). These results played a role in the course of policy reform discussions that were concluded by the Luxembourg Agreements and resulted in substantial decreases of intervention prices for butter and skimmed milk powder. A study by Berkhout et al. (2002) simulates the effects of several scenarios with price reductions and quota increases, with as base-run the implementation of the Agenda 2000 reforms, which means the reduction of dairy intervention prices in three years from 2005. The study claims that an extra 15% price decline (hence a total 30% price decline since 2000) would make the quota system ineffective and that in that case EU milk production would increase only a few percent. In this study's scenarios a duplication of the Uruguay Round Agreements is assumed (export subsidies and import tariffs -36%) as new WTO agreement from 2006.

A third study relevant here is the OECD (2005) analysis of effects of various liberalisation scenarios on, among others, the EU dairy sector. Taking the Luxembourg Agreements as a base, one scenario in which the EU and all other OECD countries remove quota and price support would result in a (further) decline of the EU milk price with 10%. The OECD projects an EU production fall by 7% in this scenario. Key in these projections is the assumption of a generic 20% quota rent in all EU countries, disregarding the fact that quota rents are substantially higher in some EU countries (e.g. EC, 2002; Lips and Rieder, 2005). The OECD projection therefore seems to overstate the production effects of a price fall in the EU. Lips and Rieder (2005) analyse the abolition of the milk quota and the elimination of export subsidies for the EU at member country level. In the simulation, tariffs remain unaltered and direct payments for raw milk production are introduced. The EU(15)-wide effects for milk production are an output increase of 3% and a price decline of 22%. While the recently published study was based on 1997 data, the authors claim the relative figures were likely to remain valid (Irish Farmers Journal Interactive, 3 June 2006).

<sup>2)</sup> With respect to the outcome of the projections the Commission refers to analyses made by the consortium of research institutes INRA (France), Wageningen University (Netherlands), FAL (Germany) and UNICAT (Italy). This group applies an European Dairy Industry Model (EDIM) for simulating EU dairy policy scenarios.

<sup>3)</sup> Except the OECD 2005 study.

Model simulations of quota abolition on EU production levels differ, which is to be expected considering the economic model assumptions on quota rent, demand and supply elasticities, base year and trade liberalisation scenarios differ. Most studies,<sup>3)</sup> however, point to production increase, in a range of several percent (Berkhout et al., 2003; Lips and Rieder, 2005) to around 12% (EC, 2002).

Based on these studies, taking into account their differences in basic assumptions, time frame and approaches, and their results in terms of price and production effects, we assume that quota abolition may induce a further 15% reduction of the milk price in the EU against the level that will be reached in 2015 after the full implementation of the Luxembourg Agreements and a new WTO agreement following the EU proposal of October 2005 in the trade liberalisation negotiations. Also, efficiency gains in milk collection and processing due to scaling-up and concentration of milk production at farm level would help EU prices not to decline further.

## Policy scenarios and model simulations for the Dutch dairy farms sector

Long-term effects of the three scenarios on production, prices and income in the dairy sector are simulated, based on the economic model DRAM (Dutch Regionalised Agricultural Model).<sup>4)</sup> The sector is divided into eight groups of farms, based on size (small/large) and production costs per kg milk (low/high). The income is defined in this study as returns minus variable costs and costs of milk quota purchase. Given the period that investments in quota can be depreciated (until 2015), the estimated average purchased quantity per farm per year until 2015 and the assumed price development for milk quotas, annual expansion costs of quotas can be calculated. In the reference scenario and the WTO scenario with quota continuation the extra quota costs for the average farm amount to around € 24,000 per year in 2009 (real prices at 2% inflation per year), further increasing to around € 37,000 per year in 2015. Under the scenario with early quota abolishment, quota costs would decline from € 20,000 in 2009 to € 16,000 in 2015.

The key aspects of the policy scenarios applied in the Dutch study are summarised in Table 3.

| Table 3                                       |                                  | Policy scenarios                   |                                  |
|---|----------------------------------|------------------------------------|----------------------------------|
| Variable/Aspect                               | Reference scenario               | WTO-scenario                       |                                  |
|   |                                  | Quota system maintained until 2015 | Quota system abolished early     |
| Price decline <sup>1)</sup> (in %)            | 0                                | 5                                  | 15                               |
| Quota system                                  | Maintained, level unchanged      | Maintained, level unchanged        | Abolishment in 2009              |
| Compensation and reduction of direct payments | Gradual reduction (-25% in 2015) | Gradual reduction (-25% in 2015)   | Gradual reduction (-25% in 2015) |
| Manure policy <sup>2)</sup> (animal N per ha) | 170/250                          | 170/250                            | 170/250                          |

1) The price decline in the scenarios is assumed against the situation after full implementation of the Luxembourg Agreements in 2009; 2) This assumes an extension of the derogation after 2009, and no consequences of the implementation of the EU Water Directive for manure policy.

<sup>4)</sup> DRAM is a regionalised, mathematical programming model for the Dutch agricultural sector. Producers' decisions are based on profit maximizing. See for further details Helming, 2005.

| Category                | Reference scenario<br>1000 ton | WTO scenario                            |                         |
|-------------------------|--------------------------------|---|-------------------------|
|                         |                                | Quota maintained until 2015             | Quota abolished in 2009 |
|                         |                                | % change relative to reference scenario |                         |
| Large & with low costs  | 4983                           | 0                                       | 28                      |
| Large & with high costs | 3421                           | 0                                       | 27                      |
| Small & with low costs  | 1751                           | 0                                       | 8                       |
| Small & with high costs | 869                            | 0                                       | -13                     |
| <b>Total</b>            | <b>11024</b>                   | <b>0</b>                                | <b>21</b>               |

The projections show that quota abolition in 2009 would result into almost 30% increase of production in the category of low cost, larger dairy farms (Table 4). At the same time, production in the group of small, high cost dairy farms declines by 13%. Total milk supply in the Netherlands is projected to increase 21%. This increase goes together with a decline in production in the arable and other livestock sector, except veal production. The simulations also take into account the environmental conditions and regulations relating to manure, water and ammonia, and show that stricter environmental conditions would reduce other livestock production first before these impose limits on milk production expansion.

The simulations show that the WTO scenario with quota continuation results in 8% lower income compared to the 2015 reference level (Table 5). Under the WTO scenario with early abolishment, where prices are moving further down, sector income decreases a bit more. Yet, some farm categories achieve a higher income level than in the WTO scenario with quota continuation, as in their case production expansion (increasing scale of production) and decrease of quota costs outweighs price reductions. Clearly, losers of early abolishment are the smaller farms, especially the category with high production costs per kg milk. In 2015 this category consists of around 17% of all dairy farms.

| <b>Table 5</b>  |                           | <b>Total income per farm category in 2015 under different scenarios</b> |                         |
|---|---------------------------|---|-------------------------|
|   | <b>Reference scenario</b> | <b>WTO scenario</b>   |                         |
|   |                           | Quota maintained until 2015   | Quota abolished in 2009 |
| Category  | Income in mln. Euro       | % change relative to reference scenario                                 |                         |
| Large & with low costs  | 1086                      | -7  | -8                      |
| Large & with high costs   | 688                       | -8  | -5                      |
| Small & with low costs  | 336                       | -8  | -10                     |
| Small & with high costs   | 182                       | -8  | -28                     |
| <b>Total</b>  | <b>2292</b>               | <b>-8</b>   | <b>-9</b>               |
| <i>Note: Average quota price is € 1,- per kg milk over the period 2002 - 2015</i> |                           |   |                         |

The number of dairy farms is projected to decline by one-third to around 15,000 in the period 2002 to 2015 if milk quotas will remain. The national milk production further concentrates on the larger dairy farms. Early quota abolition and the significantly (15%) lower milk prices result in accelerating the process of scaling-up and further concentration of production. Compared to the reference scenario the 2015 number of dairy farms is estimated 10% less in the WTO scenario with early quota abolition.

The calculations indicate that in case of early quota abolition there are opportunities for the dairy sector in the Netherlands to expand production – with dairy farms considerably less in number and on average significantly larger in size. Production will take place against substantially lower milk prices and dairy farmers continuing business will face generally lower income levels.



## Implications for the dairy industry

### Changes in regional milk supply

Milk supply responses as estimated in the Dutch study also depend on the assumption that the dairy processing industry manages to profitably market the extra supply. This challenge, however, may require further adjustment in the European dairy industry aimed at reducing production costs and adding value. Important implication of the quota abolition would be regional shifts in milk production, depending on (relative) cost of production. Studies taking the regional impact of quota abolition in the EU into account indicate that after quota removal milk production growth is expected especially in North-west Europe in countries like Ireland, Denmark, the Netherlands, next to low cost producers like Poland, while production in some parts of Germany (north and east) may increase too (e.g. Lips en Rieder, 2005; Hemme et al., 2005). High cost production regions like south-Germany, south-France, south-Italy, next to Sweden and Greece are likely to show a decline in milk production. The EU dairy industry will anticipate these changes. The possible impact on the processing industry depends on the present structural features of the industry, future demand perspectives and firm strategies. These issues are briefly pointed out below.

### Structural developments in the EU dairy industry

The process of concentration and consolidation that began before the introduction of milk quotas has continued after 1984. In order to remain profitable companies rationalised their production by closing factories and concentrating processing in larger scale plants. Also companies merged to increase efficiency in operations. Since the mid-1970s the number of dairy factories decreased from 7,500 to 3,500 in 1997 (EC, 2002). Since then the process of consolidation has continued: in 2003 40 dairy companies processed two-thirds of the raw milk produced in the EU-15 (Mahon, 2005). The top-10 biggest European dairy companies process almost 40 million tons out of the 130 million tons of milk produced in EU-25 (see Table 6).

In some EU member states the concentration in the dairy industry is rather extreme. In Sweden Arla processes 93% of the raw milk production and virtually has a monopoly. The same holds for the company in Denmark. In the Netherlands the two biggest dairies (Friesland Foods and Campina) account for around 80% of the country's milk production. Three big players dominate the dairy market in Ireland. In the major production countries Germany, France, the UK and Italy the industry is less concentrated, yet in all countries there are a number of large players. Further consolidation takes place or is forthcoming, for instance in Germany. Reasons are increasing international competition and increasing market power of the retail. Especially the latter plays an important role in Germany, forcing the industry to remain (price) competitive, which can be achieved by reducing costs through increasing scale of production. The dairy sector in the UK struggles with overcapacity and inefficiencies. In France several large internationally operating companies dominate but there are still many small(er) dairies too, leaving room for further consolidation. Mergers and consolidations have taken place manifold in the new member states in

**Table 6** The European top-10 dairy companies, 2005<sup>1)</sup>

| Company           | Country <sup>2)</sup> | Milk processed (in million kg) | Ownership    |
|-------------------|-----------------------|--------------------------------|--------------|
| Arla              | DK/ ZW/ VK            | 7,200                          | Co-operative |
| Lactalis          | FR/BE/VK              | 5,500                          | Private      |
| Friesland Foods   | NL/DU                 | 5,200                          | Co-operative |
| Campina           | NL/DU/BE/PL           | 5,200                          | Co-operative |
| Nordmilch         | DU/VK                 | 4,200                          | Co-operative |
| Bongrain/CLE      | FR/BE/DU              | 3,300                          | Private      |
| Nestlé            | ZW                    | 2,350                          | Private      |
| Sodiaal           | FR                    | 2,300                          | Private      |
| Dairy Crest       | VK                    | 2,100                          | Private      |
| Humana Milchunion | DU                    | 2,000                          | Coöperatie   |

1) Nestlé and Danone are in terms of returns the largest European dairy companies. Danone is, measured in tons of processed milk, 'only' nr. 12 of Europe; 2) Countries mentioned are the most important but not all countries in which the company operates.

Source: Dairy Industry News, 2005

Eastern Europe. Many West-European companies have leading market positions in these countries. By mergers and takeovers a number of large dairy companies have developed with operations and interests in several member states (see table 6). These companies – all with homeland in Northwest-Europe - may have operations in regions with different supply (growth or decrease) and/or demand perspectives after quota abolition. Because of this, the consequences of the quota removal to dairy companies need not be similar to the effects on member state level.

### Demand developments

A favourable aspect in a situation where milk production would expand is the expectation that international demand increases in the medium term (OECD/FAO, 2005; FAPRI, 2006). Demand will increase most in the less(er)-developed countries outside the EU, as income and population growth will stimulate demand for dairy products. Also, the adoption of more western like consumption patterns in these countries may strengthen international market perspectives for the EU dairy sector. Within the EU, outlook for consumption growth may be positive, especially in the new member states. The more affluent regions in Europe are however saturated markets. To achieve any growth and increase in market share requires rather heavy investments in innovative products and brand development.

**Business strategies**

The last remark above already refers to a major implication of the quota removal for dairies facing an increasing supply of milk in their region(s) of operation: to market the extra supply on profitable terms, (further) investments in innovative production and marketing are indispensable. Next, companies may need to re-orientate on the most perspective markets outside the EU, as well as inside the EU, taking into account the shifts in the milk production supply base as a result of the changes in the dairy policy regime. This implies huge challenges to the processing (and trading) companies, determining production volumes and prices for the dairy farmer. The companies' investment strategy is decisive in this process.

## Transitional policies: ways to quota abolition

Some consequences of early and abrupt quota removal have been illustrated by estimations for the Dutch dairy sector. Some farms – the larger one with relatively high production costs – gain from quota removal, yet the model estimations show that the elimination of milk quota enhances the decline of milk prices and dairy farm income levels which is largely caused by the (expected) ongoing trade liberalisation process. The major impact of the quota abolition is likely to be on the structure of the farm sector. For the Netherlands it has been estimated that the number of farms will be 10% less than when the quota system remains (though, even when the quota system remains until 2015 the number of dairy farms will fall significantly, see section 2). Moreover, quota abolition may lead to a decline in milk production in certain regions in the EU, inducing a restructuring much faster in these regions than in normal years. On the other hand, production is likely to expand in regions with lowest production costs. This process allows shifting production to regions best suitable for milk production in the EU and thereby enhances the sector's international competitive position.

Recognising the socio-economic impacts for the dairy chain and some regions in the EU, it might be useful to consider several alternative ways aiming at gradually removing the milk quota system, allowing the sector to adjust smoothly to a new situation without milk quotas. This section goes into a number of policy choices with respect to:

- Gradual price adjustments
- Quota adjustments
- Accompanying policies.

These issues are interlinked and therefore discussed below in a coherent way.

### Price adjustments

After the full implementation of the Luxembourg Agreements further (intervention) price reductions may be needed due to new WTO agreements to further lower import protection and reduce export support. Such price adjustments for intervention products – most notably for butter - could be best applied stepwise over a period of years, in a way similar to the implementation of the policy reforms in the Luxembourg Agreements. When applied step by step, the price decline need not go hand in hand with an early removal of milk quotas. The WTO scenario with quota maintenance in this report actually takes into account this temporary situation.

In the years that milk prices decline and quotas are still there, the price for milk quota will decrease. Farmers who have recently invested in expanding milk production and bought quota shall use the period up to the end of the quota system to write down the value of these investments. Farmers investing in quota in the years up to 2015 may benefit from lower quota prices but need to match the costs of this investment with their financing possibilities until 2015.

A gradual price decline can go along with small increases of the milk quota level by 'Brussels' and other quota policy adjustments, so that the EU milk supply can adjust to market demands (see next subsection). The dairy companies might be better able to market extra milk if milk supply grows gradually instead of a strong increase in the milk production within a short time.

### Quota policy

- Quota enlargement

The present system includes price levels at which milk production levels in each country practically equal the quotas allocated to each member state; in other words, the EU quota system binds production levels at country level. If milk prices go down, and direct payments are decoupled from milk production, milk production is expected to fall in regions with highest production costs. This would allow the EU to enlarge the quota allocated, so that production could increase in countries with lowest production costs without endangering the balance on the EU dairy market.

- Balancing production

Until now, balancing between countries has not been possible. Yet, balancing milk production between member states would contribute to a gradual, market-oriented growth of milk supply. In that case the more efficient, most competitive milk producing countries in the EU would expand production, while milk production would contract in the less efficient producing countries. Question would be whether countries where production is permanently below the level of quota allocation should be compensated when transferring quota to other countries.

- Lowering the super levy

At present the super levy (penalty) prevents milk production in excess of allocated quotas. In a transition period the levy on excess production may be lowered: due to lower milk prices the chance of oversupply is strongly reduced, at least in the short term (as high cost producers stop business). The advantage of a lower levy is that potentially most efficient farmers may expand their farm at relatively low costs, namely without investments in quota. A reduction of the levy will contribute to a gradual increase of milk production in the EU, better matching demand developments in the EU and may strengthen the sector's international position. A lower levy also induces lower quota prices: indeed, expansion of production is no longer strictly bound to quota purchase.

- Tradability of quotas

A more market oriented milk production in the EU can be reached by tradability of milk quotas among member states of the EU. By purchasing quotas in a country, the country that buys financially supports the reorganisation of the dairy industry in the country that sells, possibly without extra EU (budgetary) means. Such a trade scheme has been discussed in the latest reform of the EU sugar market organisation. At the end of 2005 the agricultural ministers decided to foster restructuring of the sector by encouraging the less competitive sugar factories to sell quotas to the EU while at the same time offering competitive factories the option to purchase quotas.

### Accompanying policies

Regions or countries where milk production contracts because of changes in the EU dairy policy may be confronted with more generally economic development problems such as an increase in unemployment rates as dairies close and dairy farmers stop their business. Rural development programmes aimed at developing alternative employment, early retirement schemes, farmers' exit programmes are some of the instruments that could be applied to assist the regions that are economically most affected by the reform of the EU dairy regime. Importantly to note is that the second pillar of the CAP has developed further now the Agricultural Council adopted the strategic guidelines of the rural development policy for 2007-2013 in early 2006. This policy, funded by the new European Agricultural Fund for Rural Development, will become increasingly important in encouraging economic developments in rural areas, where agricultural income and employment decline over time. Programmes in this area could also support the development of new income sources in regions where due to changes in the dairy policy milk production declines. The EU has thus in principle funds available to accompany structural adjustment of the milk and dairy sector.

## 8. Conclusions

The European common market regime for dairy products enters an important stage. After some 25 years in operation the milk quota system may lose its relevance to the sector and be removed. Milk quotas are less relevant for dairy farmers' income as EU dairy intervention prices fall (further) and EU market prices come closer to world market levels. This gives rise to the question whether quota removal earlier than 2014/2015 - the provisional end date according to the present market regulation - is beneficial to sector development.

Using estimations of internationally recognized studies for reflection, the Dutch case study assumes the EU milk price would fall by 15% in case of further market liberalisation under WTO plus early, abrupt quota removal in 2009, compared to the baseline projection for 2015. Short to medium-term effects of the expected price fall on income levels are negative for all dairy farmers, compared to the baseline projection for 2015. However, comparing the 'with' and 'without quota' situation under the assumed WTO scenario, some farmers may gain from the abrupt quota removal in 2009. These farmers are keen to expand the farm in the coming years and, in the Dutch case, abolishment of the quota system avoids extra quota costs. Model simulations show that the interest of farmers intent on growing rapidly contrast with the interest of farmers who wish to maintain their production level or prefer a gradual production growth above rapid expansion. The latter farms are better off with continuation of the present quota system.

**Figure 3** Scheme to implement policy instruments in the period 2008-2015, anticipating milk quota removal, set at 2010 for illustrative purpose

| Instruments   | Time                        |
|---|-----------------------------|
|   | 2008 ————— 2010 —————> 2015 |
| Reduction of export restitutions, decline of import tariffs |                             |
| Price decline   |                             |
| Quota expansion   |                             |
| Quotum trade (inter-member states)                          |                             |
| Balancing (inter-member states)                             |                             |
| Lowering super levy   |                             |
| Buy-up of quotas by EU                                      |                             |
| Removal of quotas   |                             |
| Rural policy  |                             |

Given the positions of different groups of dairy farmers and the interest of the dairy processing companies – and assuming the outcome of EU decision-making and WTO negotiations as indicated – a gradual phasing out of the milk quota system should be preferred above swift abolition of the milk quota system. Figure 3 below summarises several policy options and puts forward timing indications for a gradual phasing out of the milk quota system. Policy instruments with respect to quota (buying etc.) can be applied only for a limited number of years, anticipating a final removal of quotas or as long as the quotas are binding. Changes in market instruments (export subsidies, import tariffs) and (intervention) price changes can be applied over a longer period. In the transition period accompanying measures and rural policies could mitigate financial-economic and social effects of changes in the dairy market policy.

## References

- Berkhout, P., J.F.M. Helming, F.W. van Tongeren, A.J. de Kleijn and C. van Bruchem. Zuivelbeleid zonder melkquotering? Mogelijke gevolgen voor Nederland en de EU. Rapport 6.02.03. LEI, Den Haag, 2002.
- CEG (Commissie van de Europese Gemeenschappen). Verslag over de melkquota. Werkdocument van de Commissie. Brussel. 10.7.2002, SEC(2002) 789 definitief, 2002
- EC (European Commission, Directorate-General for Agriculture). Prospects for agricultural markets and income 2005-2012. Brussel, December, 2005.
- Everwand, W. Understanding developments in the evolution of the European dairy industry. Msc Thesis, Wageningen UR/Bonn University, 2006
- FAPRI (Food and Agricultural Policy Research Institute), US and world agricultural outlook, Iowa University/University of Missouri-Columbia, Ames, 2006
- Helming, J.F.M. A model of Dutch agriculture based on Positive Mathematical Programming with regional and environmental applications. PhD Thesis, Wageningen University, 2005.
- Hemme, T. et al. IFCN 2005 Dairy report 2005. International Farm Comparison Network, Global Farm GbR, Braunschweig, 2005.
- Lips, M. en P. Rieder. Abolition of raw milk quota in the European Union: a CGE analysis at the member country level. Journal of Agricultural Economics 56 (1): 1-17, 2005.
- LTO Nederland. Internationale melkprijvergelijking 2004, 2005. [www.milkprices.nl](http://www.milkprices.nl)
- Mahon, G. The changing structure of the dairy industry in the European Union. EuroChoices, 2005, vol.4, issue 3: 48-49
- Ministerie van Landbouw, Natuur en Voedselkwaliteit. Kiezen voor landbouw. Den Haag, 2005.
- OESO. An analysis of dairy policy reform and trade liberalisation. OESO, Paris, 2005.
- Van Berkum, S., C.J.A.M. de Bont, J.H. Helmingen W. van Everdingen, European dairy policy in the years to come: ways to quota abolition (in Dutch). Report 6.06.12, LEI, The Hague, 2006.