The EUROPEAN UNION Dairy Quota

Implications of the Removal of the European Union Dairy Quota System in 2015
Policies and schemes to protect the internal dairy sector have long been a European hallmark. While the stated goal of such efforts may be to support farmer incomes and ensure an ample food supply for public consumption, they also bolster rural development, encourage efficient production structures and stabilize markets. These varied goals are accomplished by implementation of a wide array of policy instruments including ‘quota’ or production limits, intervention prices, storage aids, and targeted trade policy. As the world dairy markets have become more intertwined, the EU has focused on improving the market orientation of the sector while also maintaining producer incomes.

Over the past decade, EU dairy policy has been driven by profitability concerns, as well as systemic changes across the broad agricultural sector to bring all commodity policies into a single framework. This led to an effort to make the dairy industry more responsive to changing market conditions and increased global demand.

This report investigates the repeal of the milk production quota system, set for March 31, 2015. For more than 25 years, the industry operated with production limitations. Soon, producers and processors will face an environment where production decisions are made solely by individuals, based largely on the economic situation at the farm level. This new reality may shift how much and where milk is produced within the continent. Furthermore, it also has the potential to alter the product mix as manufactures consider new investments to accommodate changing milk supplies with an eye on global demand.

**EU Milk Production Overview**

Just as culture varies widely across the EU member states, so too does the dairy industry. Whether it is the large industrialized farms in Denmark, dairy herds grazing in the lush Irish countryside or the Romanian households that own just one or two cows to provide milk for the family, it is difficult to make sweeping generalizations about EU dairy farms and how they will respond to an unfettered market.

The EU is home to approximately one million dairy producers, with annual output estimated at about 150 million metric tons (MT). They EU ranks first in global production, accounting for almost

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**2011 World Cow Milk Production**

- **EU-27 Milk Collection**

- **Million Metric Tons; FAOSTAT**

- **Million Metric Tons; Eurostat**
25% of total world output. The amount of milk received by dairy manufactures is a little lower at just 140 million MT, as significant volumes produced primarily in eastern Europe are consumed on the farm or at the village level without commercial processing. The relaxation of the dairy quota system to achieve a “soft-landing” in 2015 has allowed milk collection to grow 5% since 2007.

Milk production is most concentrated in northwest and central Europe. Germany leads the continent with 30 million MT collected annually, followed by France, the United Kingdom, the Netherlands and Italy. Together, these five countries account for 65% of total EU milk supply. Poland is next in terms of milk collected, but because only 75% milk produced is brought to market, they actually rank fourth in total output.

While Western Europe represents the leaders in milk production, the majority of dairy farms are located further east. Romania alone accounts for 367,000 farms, nearly 40% of the EU total, despite having only 5% of the cows and contributing less than 1% of EU milk supply. Other eastern European countries are similar—small herds, with most of the milk being consumed at the household or local level.

Collection growth between 2007 and 2011 followed a similar pattern. As shown in the map above, many of the highest producing countries experienced sizeable growth, whereas the southeast member states transitioned away from milk production in general.

Average milk yield per cow also varies greatly across the EU, which is related to herd size. Denmark, the Netherlands, and the UK have the highest milk yield per cow and are also known for more modern farms. Not surprisingly, the milk yield on the small farms in Eastern Europe is only a fraction of that seen elsewhere. A complete set of EU dairy statistics can be found in the table on the following page.
Even within Member States, dairy farm distribution varies greatly by region. The areas with the highest number of dairy cows include northwestern France (Bretagne, Pays de Loire, Basse-Normandie), northern Italy (Lombardia), and central Poland (Mazowieckie, Poldlaskie, Wielkopolskie).

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<tr>
<th></th>
<th>Milk Collected (MMT)</th>
<th>Cows (1,000 head)</th>
<th>Producers</th>
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Data: 2011, Eurostat, USDA

There are some notable exceptions to the east-west divide, as Slovakia and the Czech Republic boast the largest average herd size in the EU at more than 150 cows. Estonia is also an anomaly with an average herd size of nearly 100 head, compared to neighboring member states with less than 15 cows per farm. While output per cow
in these countries lags that achieved in modernized western facilities, cows in the Czech Republic and Estonia average more than 6 MT per year, slightly less than France. Slovakian cows are not far behind at 5 MT per year, on par with Ireland.

Milk price also varies greatly across member states, with Italy typically seeing the highest prices in response to their abundant specialty cheese production. Prices in France and Germany are near the EU average, with UK prices typically a little lower. Prices tend to be lowest in eastern Europe, partially due to quality concerns and freight costs to move that milk to western locations for processing.

Many member states have different profitability advantages based on cost of inputs and suitability of natural resources for dairying. In 2011, EU farms averaged a gross margin of €150 per MT of production, with an average revenue of €356 per MT and costs of €206 per MT. Feed costs accounted for approximately 50% of the total. Italy boasts the largest margins, fueled by the high milk prices, whereas margins in the rest of western Europe tend to be tighter.

Due to extremely higher costs for feed, energy and other inputs, Slovakia has the narrowest margins in the EU at just €17 per MT in 2011. In contrast, operating costs in neighboring Poland are nearly €200 less (due in part to a dependence on grazing), leading to more profitable farms.

All of the attributes discussed play a role in determining the future structure of the EU dairy industry. In addition, each member state faces its own unique set of challenges and opportunities going forward without dairy quotas.
Milk Quota History

Following World War II, Europe implemented a series of policies aimed at increasing agricultural productivity and securing an affordable food supply for consumers. Within the dairy sector, heavy subsidies were introduced to entice higher levels of milk production. This induced a swift response from farmers and output soon surpassed domestic demand. Import tariffs helped support prices by keeping less expensive imports at bay, along with government purchases of butter and powder when prices fell too low. However, persistent surpluses soon became the norm, and very expensive to maintain, leading to new policy alternatives.

To combat excessive production, a quota system was implemented in 1984. Quotas were established for each member state based on historical production levels, then re-evaluated annually for the 12-month period spanning April 1 to March 31. The member states then allocated quota to individual producers. At the end of the ‘quota year,’ the producer’s volume and fat content was evaluated against the assigned quota. If actual deliveries exceeded the quota, levies against the producer (paid at the state level) were assessed.

While the system was originally implemented for just five years, it was not restrictive enough to remedy the surplus. Thus, it was extended and further tightened in late 1980’s and again in the early 1990’s. In 2003, the Luxembourg Agreement led to Common Agricultural Policy (CAP) reform, shifting policy away from support prices and direct payments to a new single farm payment structure. This movement towards market orientation also set the stage for the later abolition of the dairy quota system.

Higher global commodity price in 2007 and 2008 led to increased support for removal of production caps. The 2008 CAP Health Check resulted in an immediate quota expansion of 2% on April 1, 2008 and then a 1% increase for five consecutive years to facilitate a policy known as the “soft landing”. (The exception was Italy, which received a cumulative 5% increase in 2009 in response to their chronic overproduction.) As of April 1, 2013, the current quota levels have reached their maximum and will be held constant until the end of the system in 2015.

Quota Phase-Out

When the milk quota system was put into place in 1984, the production allocation was based on historical output and has remained relatively fixed since that time. Over time, there was some occasional tightening or relaxation of the quota, but this has usually been applied equally across member states. It is very rare that a specific member state receives an individual change in quota. This essentially froze the milk production shares across member states and, to some extent, within member states if the quota was allocated by region (like Ireland).

Today, milk quotas are becoming less relevant across member states, as production falls below...
the quota levels in the majority of nations. As a whole, EU production was estimated to be 4.7% under quota for the 2011/12 season, though production in some member states still exceeds the quota levels. In 2011/12, Austria (+4.2%), Cyprus (+2.3%), Ireland (+1.1%), Luxembourg (+0.5%), the Netherlands (+0.5%), and Germany (+0.1%) exceeded quota limits. The penalty is €27.83 per 100 kilograms, resulting in an aggregate fine of €78 million for these countries.

Since the “soft-landing” process began, higher global commodity prices have also meant higher milk prices. Intervention buying has not been necessary and publically held stocks of butter and skim milk powder have fallen to zero.

Another program to prepare the dairy industry for the post-quota market is the “Milk Package”, introduced in late 2012. It is a set of policies drafted in response to the low farm-gate milk prices of 2009, designed to provide the dairy sector with a more market-oriented approach for managing price. The program allows farmers, for the first time, to enter into written contracts with processors and collectively negotiate via producer organizations. There are also rules aimed at increasing dialogue within the dairy industry around promotion, research, innovation, and quality improvement. Additionally, the package requires more timely publishing of milk volume information so that the market can be closely tracked after the quotas expire.

As these policies transition, growth in EU milk production is expected, but is unlikely to exceed total quota levels. According to the EU Commission’s Second “Soft Landing” report (2012), production is projected at 6% below quota during the final year (2014/15).
Post-quota, most expect a gradual structural shift in the EU in response to the removal of production caps. As quotas have become non-binding across many member states, some of this change is already underway.

**Post-Quota Production**

Simply removing quotas does not necessarily guarantee a rapid expansion in milk supply. For example, several member states have room under present limits, and milk production growth is flat or actually decreasing. Rather, with some exceptions of course, as countries and producers have new found production freedom, milk production growth will still most likely be a gradual process over time.

A slow and steady approach was the anticipated outcome of policy makers in crafting the “soft-landing” process. Thus, the immediate sunset of the quota system in 2015 is expected to have limited impact on aggregate milk deliveries outside of already occurring growth. However, for those few countries that produce at or near existing quota limits, the expiration may allow farmers who were previously restricted by the system to expand. In the long-run, increased dairy output in these few countries, and the processing capacity that comes with it, has the potential to shift the geographical distribution of milk production across the EU.

In these countries, increased milk production will likely come as a result of a number of factors. Producers will achieve higher output through increasing yield per cow by nutrition or genetic improvement, increasing the stocking density of dairy cows (cows per farm), converting more land to be used in dairy production and expanding existing facilities to take advantage of economies of scale.

A report from the EU Commission to the European Parliament and Council (2012) on the status of the “soft-landing” stated that EU milk production is expected to expand by 8% between 2009 to 2022. The authors anticipate that milk deliveries to dairy manufactures will increase by 10% over the period, as production moves away from subsistence farms — primarily in the east — reducing on-farm consumption and increasing the volume of milk further processed. The EU Commission’s *Prospects for Agricultural Markets and Income in the EU 2011-2020* (2011) report published similar results, suggesting milk supply will grow 7% from 2009 to 2020.

Looking at a shorter time horizon, a 2012 Rabobank report estimates total EU milk production growth at 7% to 8% by 2020 after the expiration of the quota in 2015. The exact amount will be determined by market conditions, but they expect an additional 10 million MT of milk per year, with the bulk of the increase coming from Germany, France, Ireland, and Poland.

To better understand the impact of the dairy quota expiration outside of the ever-changing global dairy industry, some studies construct a baseline scenario for the year 2020 where the quota is kept intact and compare the results to the scenario where the quota expires in 2015. The EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study determined that output will grow by 4.4% compared to the baseline, whereas research by Witzke and Tonini (2009) predicts production will grow only 3.0%.

The Rabobank report cites a number of key limiting factors that will determine the amount of growth achieved in a particular member state. They include the ability to grow forage and increase stocking density, the availability of land and capital, as well as local market conditions including available processing capacity. These attributes all factor into the profitability of dairy production, which is key in determining what regions expand or contract.
As the EU becomes a larger global player, world dairy commodity prices will play an important role in shaping the EU milk price. The former protectionist dairy policies allowed EU farmers to receive higher prices than elsewhere in the world. As policies have become more market oriented, this price insulation will fade. Furthermore, many producers in the EU face a higher cost of production than other areas of the world. For these producers, a lower milk price will compress margins, and overtime, likely force out the inefficient producers.

Comparing again to the 2020 baseline, the EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study suggests the increased production will cause raw milk prices to fall by 10% and the Witzke and Tonini (2009) report predicts prices will decline by an average of 7.2% across the EU. A report by Jongeneel et al. commissioned by the Netherlands Department of Agriculture predicts the long-run EU milk price will be €29/100 kg, or possibly €27/100 kg if there is a more liberalized trade agreement put into place. The authors also note that the critical milk price for Dutch farmers to remain profitable is €30/100 kg and many other member states face an even higher cost of production.

Lower farm-gate milk prices will require farms to become more efficient in order to survive. The Netherlands study suggests this will result in a structural shift towards larger farms, as economies of scale allow them to take advantage of a lower cost of production per unit of milk. A similar case could be made for growth of low-intensity farms, such as those found in Ireland or Poland, as lower input costs will allow them to survive – and possibly thrive – on reduced revenues.

Beyond the milk price, there are a number of other factors that influence the producers’ decision to expand, retain the status quo, or exit the industry. These factors include the costs associated with feed, labor, land and other capital. Producers with cost advantages – for example, inexpensive access to quality grazing land or low labor costs – have a greater return from the set quantity they are able to produce. Moving forward, these producers are the most likely to expand after the market price is no longer supported at artificially higher levels.

In order to estimate future milk production and demand of EU dairy products, the studies highlighted in this report make a set of baseline assumptions. They assume normal weather conditions, steady yield trends, and no industry disruptions related to disease or food quality. To forecast demand, they use the most recently available global growth estimates, which do a poor job in forecasting macro trends that may shift on-going demand. Unless otherwise noted, the studies assume no major changes to governmental policies, including new trade agreements. Changes to these assumptions could potentially alter the results as higher prices could induce more production, while lower prices may lead to more exits from the industry.

**Quota Regional Analysis**

Production quota plays two important roles in determining the structure of the EU dairy industry – in less efficient member states it supports producers, reducing the amount of farms that exit the industry. In more efficient member states, it limits producers from expanding their operations. Member state quota levels were determined more than 25 years ago and have perpetuated with limited rebalancing, resulting in the difference between efficient and inefficient member states becoming more exaggerated over time. When quotas are removed, the dairy industry will adjust back towards a more market-orientated equilibrium, and it is expected that output in efficient member states will expand, while declines will occur in the less efficient regions.
The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts regions with high quota rents will significantly increase production after quotas are removed – including Austria, the Netherlands, Belgium and Luxembourg, with smaller increases experienced in Germany and Italy. Other regions will be pressured to reduce production, such as the UK, Sweden, and Finland.

In the regions where milk supply is expected to fall, it will likely be a gradual process because despite the removal of quotas, there are still other aids available to dairy farmers. Eventually though, production in less economically viable regions will fall to the level needed to sustain fresh and artisanal demand, leaving commodity products to be supplied primarily by the more efficient milk production regions.

**Germany**

German milk output is gradually expanding with quota, resulting in production 0.1% above quota in 2011/12. Expansion is anticipated to continue, though at a slower pace due to increased feed and energy costs. This dynamic is expected to amplify the trend of growth among efficient farms while struggling farms exit the industry.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study forecasts that German milk production will grow approximately 7.0% compared to the baseline scenario. However, the report notes that the distribution of milk production will change. Dairy herds will expand in the northwest while there will be contraction in other regions, leading to an overall unchanged result.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional 2.1% of milk production growth by 2020, accompanied by a milk price reduction of 6.8%.

**France**

French milk production is expected to increase after the removal of the quota system, predomi-­‐nately in the northwestern part of the country. Expansion may be somewhat slowed by increased costs related to feed, energy, and fertiliz-­‐er, leading to slower growth, at least in the near-­‐term. While milk collection has grown 6.4% since 2007, output still came in 3.6% below quota for 2011/12.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study anticipates milk flow in France will be mostly unchanged from the quota abolition compared to the baseline scenario. However, the report notes that the distribution of milk production will change. Dairy herds will expand in the northwest while there will be contraction in other regions, leading to an overall unchanged result.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional 2.1% of milk production growth by 2020, accompanied by a milk price reduction of 6.8%.

**Netherlands**

Despite its small size, the Netherlands ranks fourth in European milk collection, aided by their high level of output per cow. Milk production has increased by 8.7% since 2007 and continues to expand. During nine of the past eleven years, output exceeded quota levels (0.5% in 2011/12) and it is expected that pressure will remain on the milk quota market until the system expires.

A 2010 study commissioned by the Dutch Ministry of Agriculture predicts production could expand 10% post-quota, but may be limited by stringent environmental regulations related to manure disposal.
A similar environmental warning was included in the EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study, which anticipates milk production in the Netherlands will grow approximately 20.5% compared to keeping the quota.

The Witzke and Tonini (2009) study has a more conservative estimate, predicting the removal of the quota will lead to an additional 10.6% of milk production growth by 2020, accompanied by a milk price reduction of 9.2%.

**United Kingdom**

In the UK, quota is transferred via a market-based system, so the most efficient producers have been able to obtain more quota over time, leading to relatively larger and more productive farms. This system also led to the exit of less efficient producers. Growth stagnation over the past five years resulted in output well below quota, off 9.8% in 2011/12.

Milk production is expected to decline in the UK, as tighter margins make dairy farming less economically viable. British producers already receive the lowest average farm-gate milk price in western Europe, so a reduction in price as a result of quota removal will likely encourage more farmers to leave the industry.

The EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study predicts UK milk production will decline approximately 5.7% compared to the baseline projection with the greatest losses coming from the southern part of the country.

Similarly, the Witzke and Tonini (2009) study predicts that the removal of the quota will lead to an additional 1.0% of milk production decline by 2020, resulting from a milk price reduction of 2.5%.

**Ireland**

The grass-based Irish dairy sector has been gearing up for the removal of quotas, looking to take advantage of their low-cost production system. During 2011/12, output came in 1.1% above quota and, although challenging weather reduced yields in 2012, they still expect output to be near quota levels this year.

Historically, Ireland has had a relatively restrictive quota system which divided production into regions. This limited the amount of quota that efficient farmers could obtain, leading to pent up demand for expansion once the system expires.

The removal of quotas prompted the Irish Department of Agriculture to promote dairy production in their Food Harvest 2020 initiative, encouraging the industry to increase production by 50% by 2020. This would result in output increasing to nearly 8 million MT and the addition of 300,000 new cows. Some market commentators are skeptical about whether the goal is attainable. If it is, they suggest that the change may be slightly slower than initially hoped.

A paper by Lapple and Hennessy (2012) notes that achieving the 50% growth in production will depend on farm numbers and growth in the amount of milk produced per cow. The report also performed a regional analysis, showing that the removal of the quota system will result in a redistribution of milk production around the country, with expansion expected to be greatest in the southern region.

The Rabobank (2012) report indicated that Irish milk production may grow by about 40% by 2020, with one of the main drivers being the ability to produce cheap forage that allows for a low cost of production.

The EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study suggests that the removal of the quota system
will allow Irish milk production will grow by an additional 11.6% compared to the baseline scenario.

Poland

Poland ranks as the EU’s fourth largest milk producer, but sixth in terms of milk collection, a result of many of their dairy resources being under utilized. Total milk collected is only one-third the amount of Germany, despite having nearly twice the number of cows.

However, many of the cows are housed on small farms with milk used solely for household consumption. Since joining the EU, farm-gate milk prices have increased with more milk being directed to commercial channels. There is also an emphasis at the producer level to improve overall quality standards, so that Polish dairy products can be marketed into the EU and global markets.

Total collection grew 8.0% over the past five years, in part due to a 2.0% increase in the amount of milk making its way to processors. Still, Poland remained 2.1% below quota in 2011/12.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts that Polish milk production would be approximately 4.7% higher than in the baseline scenario.

The Witzke and Tonini (2009) study produced similar results, predicting an additional 2.0% of milk production growth by 2020, accompanied by a milk price reduction of 7.2%.

Italy

Italy is known for its Protected Designation of Origin cheeses, many of which are sold at premium prices around the world. This allows Italy to maintain the highest farm-gate milk price in the EU. However, there is some concern that as quota is removed, the market will be inundated with cheaper milk from neighboring member states to make the non-specialty products.

When the “soft-landing” program was developed, Italy received a one-time quota increase of 5% rather than five annual increases of 1% due to the chronic over-production. Output has grown since then, and while production was 0.4% below quota in 2011/12, it is thought that they may exceed the limit for the remainder of the quota enforcement period.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study concluded that Italian milk production will grow approximately 2.2% by 2020 compared to keeping the quota.

Spain

With below average milk prices, high input costs, and sluggish demand resulting from the economic crisis, Spanish farmers are in a precarious position. The Spanish Minister of Agriculture fears abolition of the quota will diminish the competitiveness of the dairy sector and has petitioned the EU to maintain the quota until 2020.

While collection has grown 4.9% over the past five years, production was 3.1% below quota in 2011/12. Still, many sources expect milk production to expand in the northwest part of the county where conditions are suitable for high quality forage production.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts Spanish milk production will grow approximately 12.2% compared to keeping the quota, with the greatest expansion coming from the northwest.
The Witzke and Tonini (2009) study has similar results, predicting that the removal of the quota will lead to an additional 10.8% of milk production growth by 2020. They also note that the strong growth will cause the milk price to fall by 19.4%, in part due to the increasing net trade.

**Eastern Europe**

The impact of the dairy quota removal will likely have mixed results in the eastern EU member states. These countries all produced well below quota levels in 2011/12, so there are currently few limitations to expansion. Since many of the farms are very small, it is likely that many of the current producers will exit as the dairy industry consolidates and becomes more market-oriented. There are some anecdotal reports of producers and processors from Western Europe moving to the area to take advantage of lower environmental regulation, easier access to capital, and the lower cost of production. The following discussion provides a more detailed look by region.

Production in the Baltic states of Estonia, Latvia, and Lithuania accounts for just 2.0% of total output collection, though the countries have experienced an average growth rate of 13.0% over the past three years. Estonia is already home to a number of large farms with an average herd size of 100 head and the Estonian agricultural ministry has a stated goal to expand production by one third by 2020. Neighboring Latvia and Lithuania produce more milk, though the average farm size is just 10 cows. The EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study suggests the removal of the quota will lead to increased production in Hungary (+6.2%) and the Czech Republic (+2.6%) due to an increase in the number of cows. However, production is expected to fall in Slovakia (-1.8%) and Slovenia (-0.3%), as quota abolition is expected to lead to an overall decrease in the number of farms.

Dairy production in the EU’s two newest members, Bulgaria and Romania, lag far behind the rest. The average farm size is three cows with output per cow amounting to just over one metric ton per year. A number of producers in this area have and will struggle to meet the strict EU quality standards. As such, milk production is down in Romania 27% over the last five years. The decrease in Bulgaria is less severe, where about one-third of farms are out of compliance and will be required to make a sizeable investment or exit the industry. The EU Commission’s *Economic Impact of the Abolition of the Milk Quota Regime* (2009) study predicts the removal of the quota will lead to increased milk per cow, resulting in increased output in both Bulgaria (+2.0%), and Romania (3.0%) compared to the baseline scenario. This growth will come as the few larger and more efficient farms expand, off-setting the losses from the small farm that exit the business.

**Impact to Dairy Product Production**

According to the European Commission's second report to Parliament (2012), EU milk production is expected to grow by 8% from 2009 to 2022, but it is expected that milk deliveries to dairy manufactures will increase by 10%, as production moves away from subsistence farms.

The additional milk supply will lead to growing exports, as domestic markets will be insufficient
to consume the extra supply. Rabobank (2012) says this will lead to the consolidation of dairy processors as cooperatives and manufactures seek to expand their market share both at home and abroad. The report also notes that processors around the world should expect greater competition from EU manufactures as they search for a home for these additional supplies.

Increased European milk supplies will be available for the world market as the global dairy industry enjoys still rising demand in many corners of the world. With rising populations in Africa and Asia, increased world incomes and still evolving preferences for dairy, boosting per capita consumption, the EU will be well positioned to serve the world market. Furthermore, high prices had at times kept the EU uncompetitive with Oceania or US supplies. As Europe transitions to a more market based approach, milk and dairy product prices will fall, making the EU a formidable foe in the export arena.

### Dairy Processors

As of 2009, the EU was home to 5,000 dairy processors, with 55% processing less than 5,000 MT of raw milk per year. Mid-size processors (5,000 – 100,000 MT) account for 26%, and the remaining 18% are categorized as large processors (100,000+ MT). However, many of the large players process volumes well in excess of 100,000 MT, meaning that in some member states, the majority of the milk supply is concentrated in a small number of operations.

This is the case in the Netherlands, where just 21 processors control the bulk of the milk supply. The industry is structured in a similar fashion in both Germany and Denmark, where a small number of processors handle most of the milk.

The opposite is true in Italy, where smaller processors focus on specialty cheeses, with protection designated to a specific region of origin. About 75% of processors are categorized as small, with 1,439 different businesses processing 8.6 million MT of milk. This amounts to an average processor size of just 6,000 MT, the smallest in the EU. Still, there is evidence that some of these small processors are exiting the industry and consolidation is afoot.

A 2012 report from the Polish Ministry of Agriculture noted similar changes within the dairy processing sector. Since 2010, the number of processors dropped from 205 to 192 as a result of closures and mergers. However, the processors that remain are larger, more specialized and are becoming more modernized.

Across the EU, there is evidence of manufacturer consolidation. As facilities age, they are replaced with larger production units to take advantage of economies of scale. This expansion allows them to better compete with foreign companies at the international level.

There are a few locations that do not follow the trend. For example, in Spain the number of dairy processors actually increased as manufactures move towards specialization.

<table>
<thead>
<tr>
<th>EU Dairy Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Processors</strong></td>
</tr>
<tr>
<td>2009</td>
</tr>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>UK</td>
</tr>
<tr>
<td>Netherlands</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Italy</td>
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<tr>
<td>Poland</td>
</tr>
<tr>
<td>Spain</td>
</tr>
<tr>
<td>Ireland</td>
</tr>
<tr>
<td>Denmark</td>
</tr>
<tr>
<td>Belgium</td>
</tr>
</tbody>
</table>

Source: Eurostat
As the EU reacts to a changing milk supply, dairy manufacturing will need to respond in a way that continues to balance milk-fat and protein. It is expected that even in member states with similar milk production expansion, the growth across categories may look quite different.

Many of the reports note that their results are contingent on status quo trade policies. Any new agreements or restrictions could drastically change both the price and mix of exports, with the potential to shift production across the EU. The following sections dive deeper into the anticipated production trends by commodity, including a look at regional shifts.

**Fresh Products (Fluid Milk, Cream, Yogurt)**

The perishability of milk means the market for fresh products will be influenced differently than that of the other commodities. While refrigeration and ultra-pasteurization capabilities have made it possible to produce these products far from population centers, it is less feasible to export them around the globe. For this reason, growth in the fresh product category will be driven by EU population growth and consumption per capita, rather than global demand.

A report from the EU Commission to the European Parliament and Council (2012) suggests production of fresh products such as fluid milk, cream, and yogurt will increase by almost 8% between 2009 to 2020. Whereas the 2011 EU Commission Prospects for Agricultural Markets and Income in the EU 2011-2020 report estimates this amount closer to 6% during the same period.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional 0.9% of fresh milk products production growth by 2020 compared to keeping the quota, accompanied by a price reduction of 1.7%.

Going forward, the production assets for fresh products are not likely to see much change. There may be some shifting in the raw milk supply, as processors try to attract cheaper milk supplies from more efficient neighboring regions, though most do not expect new assets to be built to support this change. Sales of fluid milk, yogurt, and cream will still predominately be a regional or local market.

**Cheese**

It is estimated the EU produced more than 8.6 million MT of cheese in 2012, compared to production of approximately 5 million MT in the US. Over the past five years, output grew more than 5%, the same rate as milk collection growth.

The leaders in cheese production include:
- Germany
  - 26% of total EU production;
  - 11% growth over past 5 years
- France
  - 21% of total EU production;
  - 5% growth over past 5 years
- Italy
  - 12% of total EU production;
  - 5% decline over past 5 years

Other notable players include the Netherlands, with a growth rate of 5% over the past five years, and Poland, which expanded 18% during the period. Ireland also saw considerable growth, up 28% between 2007 and 2011 (2012 data not available). And, while accounting for less than 2% of EU production, both Spain (+10%) and Lithuania (+27%) have experienced a large production expansion in the past five years.

The EU exported 9% of their cheese in 2012, with commodity cheeses flowing into neighboring countries while specialty cheeses are marketed around the globe. When considering external exports (ignoring shipments between member
states), the EU is the world's leading cheese exporter, shipping 776,171 MT in 2012. This amount grew 30% in the last five years, with the primary destinations being Russia (31%), the US (14%) and Switzerland (7%).

A report from the EU Commission to the European Parliament and Council (2012) expects cheese production to increase by almost 10% between 2009 and 2020. It is also anticipated that substantial world demand will allow for an increase of exports, though the EU may lose market share as output expands in the US and Oceania.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional 2.3% of cheese production growth by 2020 compared to the baseline estimate where the quota is maintained, accompanied by a price reduction of 2.7%.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts EU cheese production will grow approximately 1.3% compared to the baseline, with a decline in price of 5.6%. Notable production increases are expected to come from the Netherlands (+26.5%) and Belgium-Luxembourg (+15.1%), while only modest growth will be seen in the EU’s leading cheese producer, Germany (+3.4%). Production is expected to decline in France (-8.0%), Sweden (-12.7%) and the UK (-4.3%).

While the studies may differ on the overall percentage of growth, due to the predominance of cheese in the industry today, it is expected that a large share of milk production growth after quota will be directed to cheese plants. With flat domestic demand, much of these additional supplies will be destined for the world market.

**Butter**

In 2012, EU butter production amounted to 1.9 million MT, unchanged from five years earlier, rebounding after experiencing a large production decline in 2009. The leading butter producers are:

- **Germany**
  - 25% of total EU production;
  - 10% growth over past 5 years
- **France**
  - 22% of total EU production;
  - 2% growth over past 5 years
- **Poland**
  - 8% of total EU production;
  - 1% growth over past 5 years

Other major producers include Ireland, the United Kingdom, and the Netherlands, each accounting for approximately 7% of EU production. Ireland and the Netherlands have experienced 2% growth in past five years, whereas UK production expanded by 16%.

This growth was offset by declines elsewhere. Belgian output fell by 42% over the past five years while Italian production moved 19% lower. Production also fell in eastern Europe, with many countries experiencing losses between 10% and 50%.
The EU exported 98,312 MT of butter in 2012, ranking second in butter exports after New Zealand. Shipments from the EU declined by 39% over the past five years, while exports worldwide lost just 5% over the same time period. The majority of EU exports go to Russia (20%), Singapore (9%) and Morocco (5%).

A report from the EU Commission to the European Parliament and Council (2012) expects production to remain stable after the quota expires, with relatively high prices and firm domestic demand.

The Witzke and Tonini (2009) study predicts that the removal of the quota will lead to an additional 6.5% of butter production growth by 2020 compared to the baseline, accompanied by a price reduction of 0.5%.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts EU butter production will grow approximately 4.6% compared to keeping the quota, with a price decline of 7.3%. Notable increases are anticipated to come from the Netherlands (+18.7%), Belgium-Luxembourg (+11.6%) and Ireland (+10.7%), but production may fall in Sweden (-12.7%) and the UK (-4.3%).

**Skim Milk Powder**

Over the past five years, EU SMP production has grown 23% to amount to 1.2 million MT in 2012. Leading producers include:

- **France**
  - 29% of total EU production;
  - 40% growth over past 5 years

- **Germany**
  - 26% of total EU production;
  - 35% growth over past 5 years

- **Poland**
  - 9% of total EU production;
  - 12% decline over past 5 years

SMP output also experienced notable expansion elsewhere, with increases in Belgium (+34%) and the Netherlands (+54%). Danish SMP production doubled in the past five years, while Spanish output went from a very meager 1,000 MT in 2007 to 23,000 MT by 2012. Meanwhile, production in Ireland (-37%) and the UK (-5%) moved lower.

The EU ranks third in SMP exports at 523,366 MT in 2012, behind New Zealand and the US. EU exports grew 158% in the past five years, while total world exports have only expanded by 55%. Leading trading partners are Algeria (17%), Indonesia (8%) and Egypt (7%).

The EU Commission Prospects for Agricultural Markets and Income in the EU 2011-2020 report predicts SMP production will expand by 10% between 2009 and 2020. The report from the EU Commission to the European Parliament and Council (2012) was even more ambitious, suggesting production will increase by 28%.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional
8.0% of SMP production growth by 2020 compared to retaining the quota, accompanied by a price reduction of 4.9%.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts SMP production will grow approximately 6.2% compared to the baseline, with a decline in price of 5.8%. Notable increases are expected to come from the Spain (+29.5%), Belgium-Luxembourg (+18.5%), Ireland (+10.8%), France (+7.8%), and Germany (+7.8%), but declines will be seen in Sweden (-9.7%) and the UK (-9.4%).

The growth will be driven primarily by exports, as domestic use is expected to remain stable, with an increase in human consumption offset by the reduced use of SMP as animal feed. Strong global demand will drive exports and the EU expects to control 31% of the export market share by 2022.

**Whole Milk Powder**

The expanded output of SMP seems to be offsetting WMP production, which was down 8% in the past five years to 735,000 MT. The largest producers are:

- **Germany**
  - 23% of total EU production; 3% decline over past 5 years
- **Netherlands**
  - 16% of total EU production; 10% growth over past 5 years
- **France**
  - 15% of total EU production; 22% decline over past 5 years

Denmark (+15%) and Ireland (+9%) showed growth over the past five years, while output fell in Belgium (-32%), the UK (-6%), and Poland (-20%).

Despite the decline in WMP production, exports have increased by 4% over the past five years to 380,532 MT in 2012. More than half of the WMP produced in the EU is shipped elsewhere and future growth of the market will be driven by export demand. The Netherlands is the world’s second largest exporter of WMP (after New Zealand) while Belgium, Denmark, and France also have sizable market share. The majority of EU exports are currently sent to northern Africa (12% to Oman, 12% to Algeria and 9% to Nigeria), though China will likely be the key driver of future growth. Only 1% of EU WMP went to China...
in 2012, though the Chinese appetite is growing. Last year, 98% of Chinese WMP came from Oceania so increased demand will either open the market to other sellers, or allow the EU to capturer market share from New Zealand in markets closer to home. Still, the EU’s global export share is expected to decline to 14% in 2020, compared to 25% in 2009.

A report from the EU Commission to the European Parliament and Council (2012) reflects the importance of exports, suggesting production of WMP is expected to remain relatively stable over the short-term. An increase in world demand, however, particularly from China, may fuel future production.

The Witzke and Tonini (2009) study predicts the removal of the quota will lead to an additional 3.9% of WMP production growth by 2020 compared to the baseline, accompanied by a price reduction of 4.3%.

The EU Commission’s Economic Impact of the Abolition of the Milk Quota Regime (2009) study predicts EU WMP production will grow approximately 4.7% compared to the baseline, with a decline in price of 6.7%. Notable increases are expected to come from Spain (+21.6%), Ireland (+13.2%), Germany (+8.2%) and France (+7.1), but output will decrease in Sweden (-8.2%) and the UK (-7.1).

The research and most sources anticipate a surge in some form of milk powder production following the sunset of the quota system. However, it is not yet entirely clear whether this new expansion will be focused on WMP or SMP output. But, as powder plants are relatively inexpensive to build, with little specialization required for one product or the other, there likely will be numerous new milk powder investments on the horizon.

Investment Activities

With domestic demand already served by current EU production—and not growing materially—much of increase in milk supplies will need to be marketed externally. Since the “soft-landing” policy already allows some expansion in production, many dairy manufacturers have done the same. With the geographical concentration of milk production expected to change, processors are preparing for and investing based on anticipated milk flows. By 2012, there were over $1.2 billion USD investments announced or finalized in Western Europe alone.

A Rabobank (2012) report suggests that demand in the traditional EU export markets of the Middle East, North Africa and Russia will not expand enough to absorb the additional dairy products. Therefore, many European processors are developing new markets in Southeast Asia and China to find an outlet for this excess supply.

If Asian markets—and to a lessor extent, North African markets—become the key destination for these incremental supplies, it would follow that the new investments are geared to produce the products most commonly sought by Asian consumers. Of the 33 major EU investments identified in following pages, 40% include construction or expansion of milk powder production lines. Chinese powder demand, supported by growth in demand for infant formula, increased dramatically over the last five years, with SMP imports more than tripling to 167,553 MT. Likewise, WMP imports have increased sevenfold to 402,661 MT in 2012. Currently, the majority of these imports come from Oceania and the US, though EU shipments are growing, and increased production capacity will allow European firms to capture some of this expanding market.

In addition to commodity milk powders, 24% of the identified investments are specifically aimed at developing capacity to produce infant formula. Again, these investments are likely intended to
support demand growth in China and other Asian markets.

Less investment appears aimed at traditional consumer products. Out of the 33 projects identified, just four are set to produce fluid milk, only one identifies butter as the final output, and six are set to make cheese.

However, in the cheese realm, manufacturers are chasing increased global protein demand by expanding or re-tooling facilities to capture a larger share of the whey protein by-product. Indeed, 27% of the projects are slated for whey processing, with most aimed to harvest the whey proteins for high-protein ingredients.

As the industry quickly reshapes itself to support additional milk production in a few key regions, a number of new partnerships are developing to take advantage of the evolving market. These inter-continental relationships are being formed to grow sales, expand reach, and share technology. A few example of the new found relationships include:

- Fonterra (New Zealand) and A-ware Food (Netherlands) to develop cheese and dairy ingredients plant in Netherlands.
- Hochwald (Germany) and Solarec (Belgium) forming joint sales company for western Europe.
- Unilever and Grupo Leche (Spain) agree to licensing deal to use Flora margarine brand in Spain for dairy beverage.
- R&R Ice Cream (UK) and Kraft agree to licensing deal to use Philadelphia, Milka, Toblerone, Daim, and Oreo brands in Europe for ice cream.
- Müller (Germany) partnering with Pepsi for new yogurt plant in New York.
- Danone (France) and SalzburgerLand (Austria) producing Danvia yogurt for Danone in Austria.
- Wiseman (UK, recently purchased by Müller) and A2 (Australia) using A2 technology and brand to produce liquid milk for British market.

While information surrounding the investment strategies of dairy manufactures is somewhat limited, the following provide some color around select expansion projects.

**Glanbia and Dairygold Invest in Ireland**

Ireland has a tradition of exporting, with dairy products sales totaling almost €3 billion in 2012, according to the Irish Food Board. In terms of self-sufficiency, they produce almost six times more cheese and ten times more butter than can be consumed domestically, leading to an emphasis on exports. Furthermore, the Irish Department of Agriculture’s Food Harvest 2020 initiative seeks to increase milk production by 50%, but notes that processing capacity must grow along with it. The report states, “The processing industry must move towards a small number of scaled operators who have the scale and culture to drive efficiency and value added in line with key international competitors who have already achieved consolidation.”

Glanbia is one of these processors and their website notes “there is considerable work underway to assess the potential of milk output expansion which can occur when EU milk quotas are eliminated in 2015.” The Irish Minister of Agriculture has publically praised them for their €150 million investment in a new powder plant as it helps meet the goals of the program. The plant will be built in southeast Ireland, with the ability to produce 100,000 MT of dairy powders from 700 million liters of milk annually. The plant will be completely focused on the export market and hopes to supply a number of regions including the Middle East, Africa, Central America, and Asia.

Dairygold has also taken steps to handle increase milk supplies post-quota. An internal survey
shows producers intend to expand around 55% to 60% between 2011 and 2020. The cooperative has committed to accepting the increased supply, thus the need to invest in new processing capacity. The have already allocated €120 million to a variety of expansion and improvement projects involving specialty and cheddar cheese production, demineralized whey processing, and increased milk intake capacity.

**Arla Expansion**

In a January 2013 press release, Arla says the abolition of milk quotas is driving their global strategy, adding that “without EU quotas it is anticipated that Arla’s milk farmers will produce at least one billion kilos of milk more each year than today.” This would amount to an 8% increase in the amount of milk to be processed. They also note growth in EU demand is stagnating, leading them to look at external markets to find an outlet for excess products.

Arla joined New Zealand’s GlobalDairyTrade platform in 2012 as one method to grow international sales, currently the only European company to do so. Arla cites the online marketplace as a way for them to build an efficient trading business in the Middle East, Africa, and Asia.

They have also been investing to accommodate growing global demand. This includes an expansion in their Danish whey processing plant, which is anticipated to be the largest of its kind in Europe. Their 2013 investment plan notes that they aim to double the revenue of their ingredients subsidiary which sells whey proteins, lactose, and other milk based ingredients. To accomplish this, they also plan on investing in a new lactose facility.

**FrieslandCampina Sets Goals for 2020**

To take advantage of expanding world demand, FrieslandCampina developed a strategy called route 2020 in order to grow their business between 2010 and 2020. As part of the plan they aim to shift focus from commodities to added-value products such as dairy-based beverages, infant nutrition and branded cheese.

Their 2012 annual report shows that total sales volume grew by 2.4%, in part due to the new product focus as well as the acquisition of a Philippine milk company. They reported investing €423 million in a variety of projects to meet the goals of route 2020. Investments include:

- Two separate investments of €145 million and €105 million to expand infant and toddler nutrition capacity
- €60 million to expand milk processing capacity and production of whey, lactose, and infant formula
- €35 million to expand milk processing capacity and production of evaporated and condensed milk
- €40 million to build new research facilities and offices

**Conclusions**

While the road to reforming the EU dairy sector has been long, the industry seems well positioned for growth and to more broadly serve the global marketplace. In leading up to the final abolition of the quota system, the “soft-landing” process has generally allowed producers to start down the road to expansion, while also encouraging processors to make investments to prepare for the anticipated increase in milk supplies.

Post-quota, the literature and research suggests total EU milk production growth of anywhere between 5% and 10% by 2020. However, on an individual country level, performance will vary widely. Countries like Ireland and Poland are poised to leverage their low-cost base and expand well in excess of overall European performance. In other regions, such as the Netherlands, as well as parts of Germany and France, large
farms will likely take advantage of natural economies of scale, as a small number of large farms expand, pulling the total country output higher in the process.

While the efficient and low-cost producers expand, and likely grow aggressively, the process will also yield farms that struggle to survive. With an increasingly market-oriented industry, and farm milk prices that become more aligned with global commodity markets, the foregone conclusion is that milk prices will fall relative to current levels. Therefore, in those member states where producers face high input costs, such as the UK, a life without quota will inevitably squeeze margins, with the likely outcome being a smaller, but more competitive producer base. Elsewhere, small scale farmers will also find it difficult to compete in a less protected marketplace, especially in eastern and southern Europe. Though some level of support and protection for dairy farmers will remain, it is expected that milk production will slowly migrate away from these less profitable regions.

Due to the shifting geographic distribution and expected increased milk supply in the northern tier, a number of new milk processing assets are in various phases of planning and construction. Not surprisingly, most activity is centered in Ireland, Germany, France, and the Netherlands, where more $1 billion USD of investments have already been announced. With a stagnant population and therefore consumer demand, the vast majority of any increase in milk supply will by necessity, be destined for the export market. Given the infrastructure that already exists, a significant portion of the additional milk will naturally flow to various cheese products. However, the vast majority of the new investments are aimed at satisfying emerging demand for dairy products in Asia, the Middle East and Africa. While cheese demand is certainly growing in these regions, the more significant opportunity is in the milk powder and infant formula space. As such, the majority of the new investments are in fact powder plants, either in the commodity arenas of skim or whole milk powder, or more specialized plants to produce bulk infant formula blends.

Dairy farming has long played a central role in rural European life and undergone many transitional periods. Once again, European producers and processors are embracing the change. While the expiration of the milk quota in 2015 will likely alter the dairy landscape, it has positioned the EU to remain competitive in the increasingly interwoven world market for years to come.
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>LOCATION</th>
<th>COMPANY</th>
<th>COST</th>
<th>PRODUCT</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td></td>
<td>Arla</td>
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<td>Whey processing</td>
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<td>MilkLink/Volac</td>
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<td>UK</td>
<td>Aylesbury</td>
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<td>N/A</td>
<td>Liquid milk</td>
<td>New factory with 1 billion liters per year; Start-up end of 2012</td>
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<tr>
<td>UK</td>
<td>Dale Farm/UDF</td>
<td>€47M</td>
<td>Cheese, Liquid Milk</td>
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<td>France</td>
<td>Carhaix</td>
<td>Sodiaal/ Euroserum/ Synutra</td>
<td>Synutra €90M+ Sodiaal €10M</td>
<td>Infant formula, Liquid Milk, Whey powder</td>
<td>60,000 MT milk powder/infant formula; 280 million liters milk; 30,000 MT demineralized whey powder</td>
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<tr>
<td>Germany</td>
<td>North Germany</td>
<td>DMK &amp; Arla</td>
<td>N/A</td>
<td>Milk powder</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Ammerland</td>
<td>N/A</td>
<td>Whey</td>
<td>Increase annual milk intake by 400 million liters to 1.5 billion liters in 2015</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Hünfeld</td>
<td>Hochwald</td>
<td>€60M</td>
<td>Mozz/Whey</td>
<td>40,000 MT of Cheese</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>LOCATION</td>
<td>COMPANY</td>
<td>COST</td>
<td>PRODUCT</td>
<td>VOLUME</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>--------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td>Arla</td>
<td>€57M</td>
<td>Whey</td>
<td>Process an additional 2 million MT of whey</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Leeuwarden, Beilen, and Bedum</td>
<td>Friesland Campina</td>
<td>€143M</td>
<td>Infant formula and milk powders</td>
<td>Late 2014 start-up; A-ware operates cheese plant (80,000 MT); FONterra oversees dairy ingredients plant</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Heerenveen</td>
<td>Fonterra and A-ware Food Group</td>
<td></td>
<td>Cheese, Whey</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Gorinchem</td>
<td>Vreugdenhil</td>
<td>€35 M</td>
<td>FCMP</td>
<td>Expansion of existing plant by approximately 20,000 MT</td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td>Valio</td>
<td>€12M</td>
<td>Cheese</td>
<td>Cheese plant expansion</td>
</tr>
<tr>
<td>Belgium</td>
<td>Kallo</td>
<td>Milcobel</td>
<td>N/A</td>
<td>Mozzarella cheese, Milk powder</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>Sutas</td>
<td>N/A</td>
<td></td>
<td>Multiple products</td>
<td>Largest Turkish dairy company (Sutas) bought former Tnuva plant - 500 MT/day capacity</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Konolfingen</td>
<td>Nestle</td>
<td>€166M</td>
<td>Infant formula</td>
<td>More than 60,000 MT</td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td>Tine</td>
<td>€79M</td>
<td>Fresh milk</td>
<td>Expansion of fresh milk plant</td>
</tr>
<tr>
<td>Ireland</td>
<td>Macroom</td>
<td>Danone</td>
<td>€50M</td>
<td>Infant formula</td>
<td>Expansion from 30,000 to 100,000 MT per year</td>
</tr>
<tr>
<td>Ireland</td>
<td>Mallow</td>
<td>DairyGold</td>
<td>€120M</td>
<td>Milk powders, Cheese</td>
<td>Expanded from 600 million liters to 940 million liters in 2011; Plan for 1,540 million liters by 2020; 370 million liters for milk powders, 180 million liters for cheese and demineralized whey, and 50 million liters for infant nutrition</td>
</tr>
<tr>
<td>Ireland</td>
<td>Ballyragget</td>
<td>Glanbia</td>
<td>€35M</td>
<td>Whey Protein Isolate</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>Belview, Kilkenny</td>
<td>Glanbia</td>
<td>€150 M</td>
<td>Powders</td>
<td></td>
</tr>
</tbody>
</table>