IUF Dairy Division

The Global Dairy Industry

A Report prepared for the International Union of Food Workers (IUF/UITA/IUL)

Jennifer Gao
Nigel Haworth

Preamble

In late 2010, Jennifer Gao and I (both of the University of Auckland) were commissioned by the IUF to produce a report on the global dairy industry. This is the final report.

The framework of the report was agreed between the IUF and the research team. The report represents a particular level of investment of resources. A far larger resource could, of course, produce an even more detailed and comprehensive analysis. However, we believe that the report captures faithfully the complex dynamics of the sector, whilst providing the IUF with a concise global overview.

Jennifer has been responsible for the greater part of the report's production. She has worked tirelessly in its preparation, and I want to put on record my sincere thanks for her commitment and quality of work. I also want to thank our colleagues in the IUF and in the NZDWU for their support in the completion of this report and for their financial support for Jennifer.

We both appreciate this opportunity to contribute to the work of the IUF.

Nigel Haworth
Professor of Human Resource Development
The University of Auckland

October 2011

Contents

The Global Dairy Industry: an introduction

The global dairy industry, in its own right a dynamic, sometimes volatile sector, sits as a major element in a Food and Beverage sector that now spans the globe with integrated global companies and their associated value chains. We live in a world in which "food security" has become a major concern for national governments and for international agencies. On the one, hand, developing countries face food deficits, often compounded by climate change, political upheaval, population movements and the restructuring of agricultural production in the interests of local elites or the demand of wealthier markets. On the other, in developed countries, growing social inequality is changing food consumption patterns, as is a burgeoning health crisis caused by obesity and its consequences. We know well that, for the moment, in aggregate terms, there is no reason for food security to become a global crisis. We also know that skewed incomes and consumption patterns make such a crisis more likely. Hence, the dairy industry sits in a broader sector, which increasingly confronts political as well as commercial challenges.

Because of this broader context, the dairy sector is important. It produces an array of products from its basic raw material. For example, Fonterra is said to produce 1000 products from the initial efforts of New Zealand's dairy herd, products that span the simple, raw product (still a vital part of the sector – one third of global milk production is consumed as the basic product) to highly-sophisticated nutriceuticals. We sometimes take the raw material – milk – for granted, but it is that essential global presence of milk as a part of the human diet in so many areas for so long that underpins the current development of the global dairy industry. And, even in areas where milk and milk products have been less important, the global reach of the dairy industry is slowly but surely weaning populations on to milk-based products.

Volatility in the sector

In recent decades, the global dairy industry has been volatile. For example, in 1984, the "global herd" numbered perhaps 175 million cows. By the late 1990s, this had fallen to about 140 million. Milk production fell accordingly, from about 440 million tonnes in 1990 to 370 million tonnes in 1997. Much of this decline reflected restructuring in the sector as a consequence of changing regulations, declining profitability, improved opportunities in other types of farming, shifts in demand, shifts in export markets, climate change to name but some factors. We have seen more recent volatility, in terms of milk prices, as an effect of the 2008 global financial crisis. Initially, returns to milk fell, then rebounded dramatically. This is, therefore, a sector which has experienced both long-term secular change and short term volatility, a difficult trajectory to negotiate when the raw material derives from investments (farms, stock, R&D and so on) that are long-term by nature. In these circumstances, it is perhaps unsurprising that governments (especially in the European Union EU) have resorted to interventions that seek to reduce the disruption caused by short-term volatility, even in a broader context in which trade protections and sectoral interventions by government are out of favour as economic policy tools.

More recently, the global dairy industry has displayed a more positive trend. Between 2000 and 2010, global milk production has been expanding at about 1.7% annually, reaching 587 million tonnes in 2009.[1] The global herd size is still diminishing slowly, but the herd's productivity is rising. Here we see another important factor that permeates the sector – R&D and innovation across the sector, from milk production to the development of its many subsequent products.

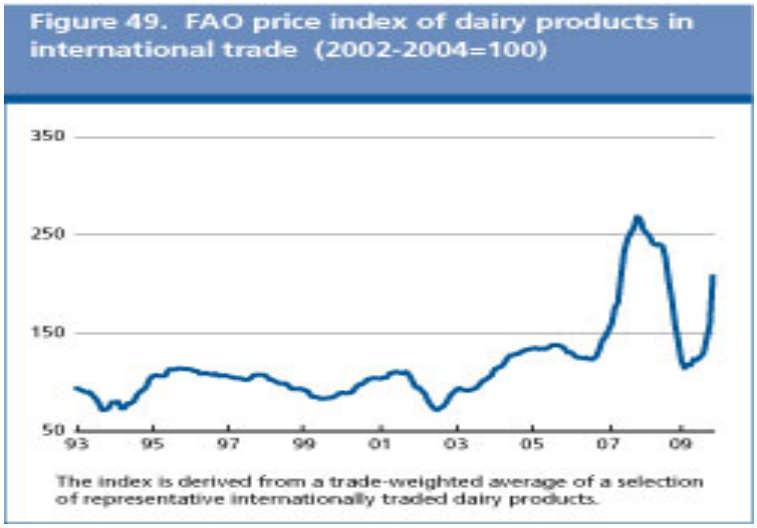
Basic Global Data

Globally, about one third of milk is consumed as fluid milk. Two-thirds of the total are processed. Cheese accounts for about 50% of dairy products, butter 30%, the rest consumed as powders, (skim or whole milk) and other minor (by volume) products. Table 1 presents the basic dairy industry data while Figure 1 below (from the FAO) captures the price volatility of dairy products in recent years:

Basic Dairy Industry Data				
World Milk production (millions of tonnes)				
2000	**2005**	**2007**	**2008**	**2009**
492	547	572	584	587
Cow Milk Delivery				
315	351	364	371	372
Dairy Product Development (for 50 selected countries)				
Butter and Butteroil				
6.6	7.6	8.1	8.6	8.8
Cheese				
14.1	15.9	16.8	16.9	17.0
WMP				
3.1	3.7	3.9	4.1	3.8
SMP				
3.3	3.3	3,3	3.5	3.6

Table 1: World Milk Production and associated data (from IDF 2010)

Figure 1: Price Index of Dairy Products in International Data [2]



The Demand for Milk and Milk Products

Demand for milk products is reported as growing between 1980 and 2010:

- Fluid milk consumption growth has averaged 0.6% per annum (pa).
- Processed milk consumption has expanded at an average rate of 0.9% pa
- Cheese consumption growth has averaged 2% pa.
- Butter consumption growth has averaged 0.9% pa
- Whole Milk Powder consumption growth has averaged 5.9% pa.
- Skim Milk Powder consumption has contracted by an average of 0.2% pa.

Global per capita milk consumption grew from approximately 95kg in 2000 to 103 kg in 2009.

There are a number of sources of increased demand for milk products. Three are particularly important. First, in developed, mature markets, fragmentation of markets using brands and sophisticated, new products may generate increased demand. We return to this in discussing company strategy in the sector. Second, there is the potential impact of population increases on the demand for milk:" Milk demand is highly influenced by the number of people and the amount of milk that each person is willing to drink and can afford. The world population is increasing by 78 million people per year in the past 15 years; meanwhile, the average per capita milk consumption for the year 2009 was 105 kg ME (Milk equivalents). If we assume that this per capita consumption stays constant, then we need about 8million tonnes more of milk per year to satisfy the additional demand due to population growth".[3] [4]

However, there is an important third source of increased demand. Developing countries are increasing their share of global milk production (see Figure 3 below). Also, changing consumption patterns are leading to increased milk and milk products consumption : "Total milk consumption in developed countries stayed more or less constant over the last twenty years, while significant increases in global milk consumption are due to population growth and per capita income growth in developing countries……. (t)he latter has led to the emergence of an affluent middle-class in many low and middle income countries in Southeast Asia, Latin America and Central and Eastern Europe. Additional "westernization" trends leading to increasing preferences for new value-added products in many of these economies generate additional dairy market growth". [5]

Nowhere is this more obvious than in China. China's dairy imports doubled in the period 2005-2010. By 2015, China is expected to become the third largest global dairy importer. Companies like Fonterra have benefited dramatically form this import growth – New Zealand's dairy exports have been growing at an annual average of 6% 2005-2010, much of which has been China-bound. And, with a burgeoning and affluent middle class, and with current per capita dairy consumption markedly less than other East Asian economies, China is likely to have long-term major impact on global dairy production and consumption, and, therefore, on company strategies [i].

[i] For example, China's 2010 annual per capita fluid milk consumption is 9.7 kg, compared with Taiwan's 15.3 kg and South Korea's 33kg.

Geographical Structure

The EU is the largest milk producing region (134 million tonnes in 2010), followed by the US (86 million), India (48 million) and Russia (33 million). India consumes the largest amount of raw milk (47 million tonnes in 2010). The EU follows (34 million) and then the US (28 million).

In USA, many large-scale dairy farms have been established or rapidly increased in scale in the recent years. While this type of farm can have the advantage of economies of scale, it is also vulnerable due to dependency on purchased feed, quite small margins and low solvability.

New Zealand has a pasture based system, based on low input and own feed production. Seasonal calving is used to produce as much milk as possible with fresh grass. In Australia the same type of system is used in Victoria, but due to a different climate it is more difficult to implement this system. The pasture based system has the lowest cost price of milk worldwide and thus it sets a minimum level for the price of milk.

In Eastern Europe, while there are some large-scale farms which have been made possible by investors, overall there are still a large number of small-scale farms. Eastern Europe dairy market is characterised by fragmented buyers, limited added value, low productivity and quality issues, yet its operation costs are low. However, less government influence and enforcement have resulted in unclear organisation.

The differences between Western European countries are small compared to Eastern Europe. Farming systems are mostly pasture based and/or summer feeding. Western Europe dairy market is characterised by added-value, good quality, good infrastructure, much influence from society in regards to issues such as animal welfare and environment. Labour and feeding costs are high, legislation is severe and the industry is capital intensive. Nevertheless, as milk prices are quite high, the industry is not very competitive in general. [6]

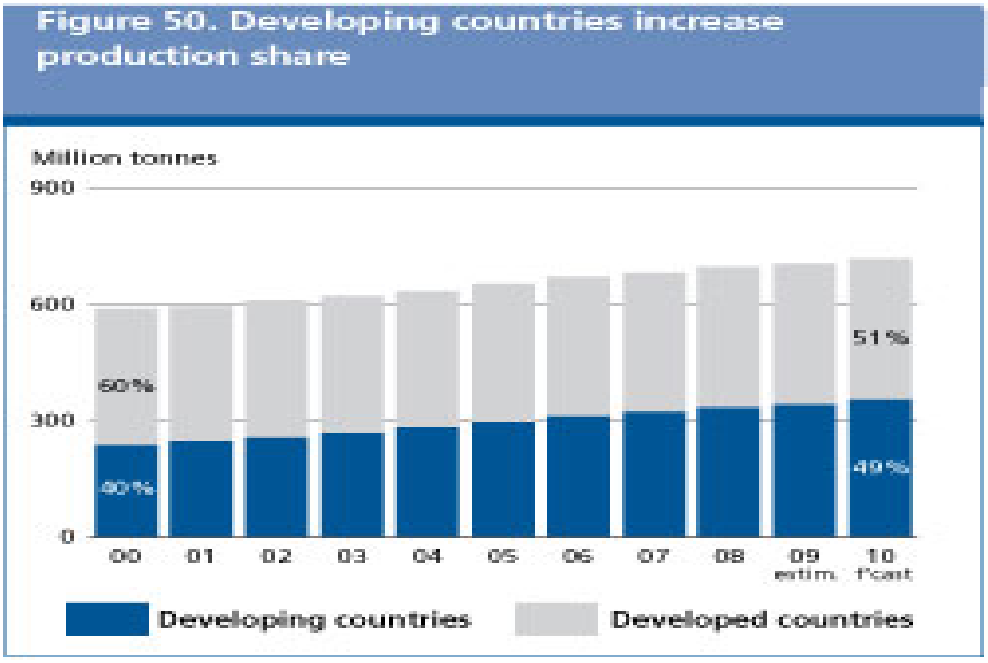
The FAO suggested that, for 2010 (Milk)"production should grow by over 3 per cent in developing countries, notably in Asia, but virtually stagnate in the developed countries. Milk production by five key exporters, Argentina, Australia, the EU and New Zealand, is anticipated to grow virtually unchanged".[7]

Table 2 illustrates the factors in development of dairy regions, while Figure 2 shows the growing presence of the developing world in milk production.

	Oceania	USA	Eastern Europe	Western Europe
Production and sales	Limited increase in production	Stable	Increase	Slight increase
Societal preconditions	Reduction of greenhouse gasses	Increasing influence	Very limited	Very important
Local aspects	Water, labour	Water	Availability of animals, management level	Good infrastructure, good climate
Economy	Increasing cost price	Increasing feed costs (feed food fuel)	Milk price and cost price increase	Stable
Strategy	Increase in scale and off-farm investment	Increase in scale, collaboration	Increase in scale	Increase in scale, add value

Table 2. Factors in development of dairy regions [8]

Figure 2. Milk Production Levels of the Developing World[9]



Trade

Because much milk is consumed domestically, trade as a percentage of milk production remains small. Excluding trading internal to the EU, in 2006, only 6% of global milk production was traded. In 2010, and some estimates reduce that figure to 5%. The trade profile is shifting as an effect of growing demand in developing countries. For example, in 1980, the EU imported 30% of New Zealand dairy product exports; by 2004, that share had declined to 8 per cent.

International trade is dominated by Australasia (Australia, New Zealand) and the European Union. New Zealand is the largest single exporting country, followed by the European Union. New Zealand is the world's leading exporter of milk powder (for both food manufacturing and reconstitution as liquid milk) and butter. The EU is the biggest exporter of cheese. In 2010, WMP was 30% of global dairy product trade; cheese and SMP were both on 24%, and Butter on 14%. New Zealand overtook the EU as the world's biggest exporter in the mid-2000s. Major importers are Russia, Mexico, Algeria, Indonesia, Japan and China.

The global crisis in 2008 caused a reduction on total trade of 5%, with butter losing out particularly, but trade has subsequently picked up strongly.

Commercial Structure

The commercial structure of dairy industry processing is complex. However, to simplify matters, production takes place at four levels:

- Peasant or micro-enterprise: for immediate local consumption, unlikely to be traded outside the immediate locality; unsophisticated processing.
- Small enterprises: often again for local or sub-regional markets; limited sophistication (unless in high-value add niche markets e.g. artisanal cheese in developed economies)
- Medium sized companies: domestic market-orientated; depending on the level of development of the economy, may have some level of sophistication in terms of innovation, brand and product; may be a potential partner or target for large-scale operations.
- Large oligopolistic, usually multinational, companies: high levels of internal integration; breadth of operation globally, high investment in innovation and brands, large global employers, sophisticated market strategies; predatory in relation to medium-sized firms; involved in partnerships within and beyond the large-scale sector; dominant in the sector.

Commercial Strategies in the Sector

The large companies dominate the industry. They have emerged aggressively over the last three decades as a process of industrial restructuring on the basis of mergers and acquisitions, brings large Food and Beverage companies into the diary sector, and existing dairy companies expand out into the Food and Beverage sector. The commercial characteristics of these companies are, generally:

- Very large, with high capitalization, often facing constant need to recapitalize as an effect of new mergers and acquisitions

- Often multi-sectoral (that is, they operate in many sectors of the Food and Beverage sector, and sometimes beyond)
- Global reach though involvement in sophisticated value chains (in which, in the case of dairy, controlling the raw product to the final marketed brand is an important goal)
- Operating often in high volume, low margin, highly competitive circumstances, often with price-sensitive products
- Challenges created by changing consumer location and preferences
- Confronting strong retailers able to put downward pressure on prices
- Complex distributional channels from where the milk is produced, to where it is processed and finally consumed
- Increasing dependence on innovation, R&D and investment in brands
- Faced with major food safety concerns and regulations

In such circumstances, medium-sized operations, unless they have very strong consumer support and brand identification, will face difficulties in operating in the sector.

Commercially, this is a highly-volatile environment. In terms of employees of the large companies, the implications are clear:

- Production will be simultaneously marked by high volume outputs at high quality standards (to meet consumer and regulatory requirements)
- Technological sophistication is likely to grow, rather than diminish
- Productivity-improving measures will receive a high premium in management strategy
- Restructuring will cut across the high performance requirement as it creates unsettled workforces
- Management will be operating across fragmented workforces and, in general, may not be supportive of trans-national bargaining or consultation arrangements (except where, for example EU –style regulatory requirements exist)
- Demands for high level staff will not necessarily be met in local labour markets
- Training and development will be a feature of the large firms in the sector.

Fonterra Co-operative Group Limited- New Zealand

Abstract

The Fonterra Co-Operative Group Ltd. is a multinational dairy co-operative and is one of the world's leading dairy product exporters, accounting for more than one-third of dairy trade internationally. With roots in New Zealand, Fonterra has over 60 offices and over 60 manufacturing sites internationally and Fonterra's products are present in over 140 markets. While its offices span across the globe, currently most of its manufacturing operations are in the Australasia and American regions. The cooperative operates across a diversified portfolio and produces across a number of main dairy product categories that range from dairy ingredients, value added ingredients to food services. As a co-operatively owned company, Fonterra is governed by four external groups, including New Zealand Dairy Farmers, Fonterra Board of Directors, Shareholders' Council as well as the Milk Commissioner. Fonterra has been expanding its global presence and networks through engaging in various partnerships with other multinationals such as Nestle (Dairy Partners Americas), Dairy Farmers of America (DairiConcepts), Royal Friesland Campina (DMV Fonterra Excipients), Clover and Dairy America. Fonterra places strong emphasis on research and development in the aim to pursue processes that are more efficient and to develop more innovative produces. Innovation Centres are operating in New Zealand, Australia, China and Singapore and are dedicated to a wide range of sciences, including forage and bovine genetics, nutrition, flavours, texturants and packaging materials.

Currently, Fonterra is aiming to achieve three particular strategic goals. First, the cooperative aims to deliver sustainable co-operative performance through increasing the company's flexibility, scale and operational efficiencies; second, to build trusted brands in chosen markets through exiting from mature positions, continuing to invest in growing categories and consolidating operations; and finally, to grow lasting customer partnerships through leveraging proprietary processing and product intellectual property. Nevertheless, while Fonterra is now one of the world's top ten dairy companies and its practices in the past decade have proven the cooperative's capacity, Fonterra is facing various challenges to its performance and sustainability. In order for the cooperative to become genuinely global and sustainable, Fonterra needs to go through major transformations in areas such as its global supply chain, capital structure, allocation of financial investment, production location, technological innovation, business partnership and overseas management strategy. Also, Fonterra will need to benchmark its performance in response to recent trends, issues and campaigns such as environmental sustainability and energy efficiency. While Fonterra has already achieved some notable results since its establishment in 2001, revolutions are now needed for the cooperative to become a globally successful multinational enterprise.

General information

The Fonterra Co-Operative Group Ltd. is a multinational dairy co-operative with headquarters in Auckland, New Zealand. Established in October 2001 through a merger of the New Zealand Dairy Group (NZDG), Kiwi Cooperative Dairies and the New Zealand Dairy Board (NZDB), The Fonterra Co-Operative Group Ltd. is now responsible for one-fifth of New Zealand's total exports and 7 percent of its GDP[10]. It is the world's largest dairy processor by milk intake in 2010.[11] The chronology below marks the significant events that eventually led to the establishment of Fonterra Co-operative Group Limited: [12]

1814: Samuel Marsden brings a bull and two heifers to New Zealand.
1846: The country's first export--a consignment of cheese--is shipped to Australia.
1886: The Anchor brand is launched.
1923: New Zealand establishes its first Dairy Board.
1935: The government takes control over export marketing.
1961: The Dairy Production and Marketing Board is created.
1987: The Dairy Board Act is passed.
2001: The Fonterra Co-Operative Group Ltd. is created from the merger of the New Zealand Dairy Group, Kiwi Cooperative Dairies, and the New Zealand Dairy Board.

Fonterra is one of the world's leading dairy product exporters and it is also accountable for more than one-third of dairy trade internationally[13]. In a report published in 2010 by Rabobank Group, the Dutch financial services provider, Fonterra is ranked fifth by turnover among dairy companies worldwide[14]. Below are the key data of Fonterra (2010 Data): [15]

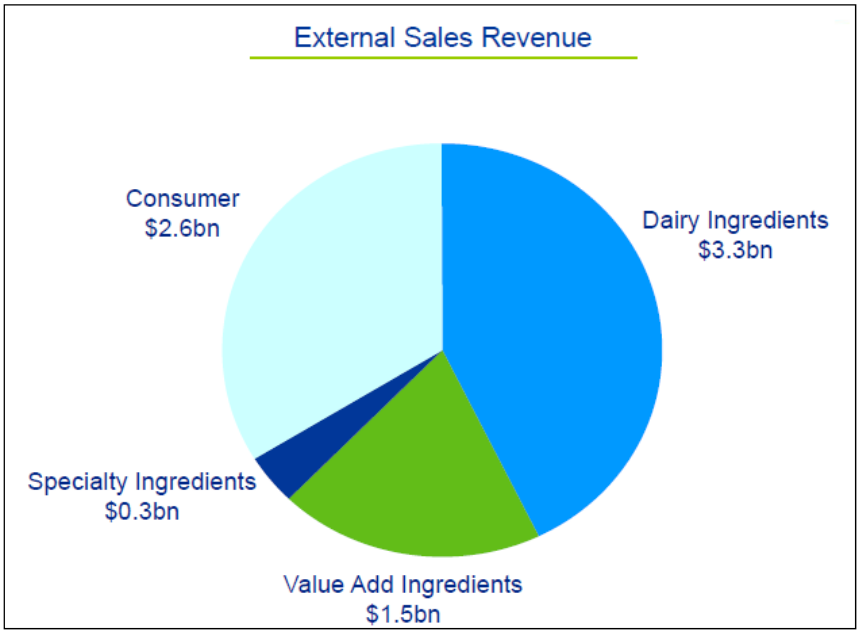
Total Assets	NZD$14.1 billion (≈EUR 8.65 billion as of Aug 2011)
Annual Turnover	NZD$16 billion (≈EUR 9.82 billion as of Aug 2011)
Milk Production (New Zealand)	14.76 billion litres
Sales Volumes	2.31 million metric tonnes
No. of Employees	15,600 (worldwide)
No. of Shareholders	10,537

Product mix

Fonterra operates across a diversified portfolio and produces across a number of main dairy product categories (see Figure 1), including:

1. **Dairy Ingredients:** These products are targeted at markets with low barriers to entry and multiple suppliers. Dairy ingredients include whole milk powder, skim milk powder, butter and cheese. [16] [17]
2. **Value Add Ingredients:** In comparison to dairy ingredients, these products are higher up in the value chain. However Value Add Ingredients are not yet unique enough to be classified as Specialty Ingredients. These products include nutritional bases for infant formula, growing up milk powders, CheddarPlus and PowerProtein for snack bars. [18] [19] [20]
3. **Specialty Ingredients:** These products have unique propositions with limited demand volatility and include dairy ingredients that could be applied to paediatric, functional or pharmaceutical uses. Examples of these products are Clear Proteins and Pharmaceutical Lactose Excipients. [21] [22]
4. **Consumer Products:** Consumer products are sold to consumers directly through consumer brands owned by Fonterra. Examples of these brands include Anchor, Bega, Fresh'n'Fruity, Mainland, Tip Top, Anlene, Brownes, Anmum, Sorpole and Fernleaf. [23] [24]
5. **Food Services:** Fonterra has a global sales channel directed especially to meet the catering demands of restaurants, hotels, bakeries, cafes and fast food outlets. Core dairy ingredients and branded dairy products are both provided, including ready-to-serve cream and beverages, butter, milk, cheese, ice cream, desserts, frozen pastry and yoghurt. [25]

Figure 1. External Sales Revenue by Product (March 2010) [26]



Regional and country focus

With roots in New Zealand, Fonterra has over 60 offices and over 60 manufacturing sites around the world and Fonterra's products are present in over 140 markets. [27] The company is owned by around 11,000 New Zealand dairy farmers who supply the company with over 14 billion litres of milk per annum. [28] See table 1 for an overview of the spread of offices and manufacturing sites in different geographical regions: [29]

Region	No. of Office	No. of Manufacturing Sites*
New Zealand	11	25
Australia	7	12
Asia	21	2
Europe and Middle East	10	1
Africa	4	0
North America	9	9
South America	3	21

* Includes secondary packaging

Table 1. Number of Fonterra office/ manufacturing sites in respect to geographic region

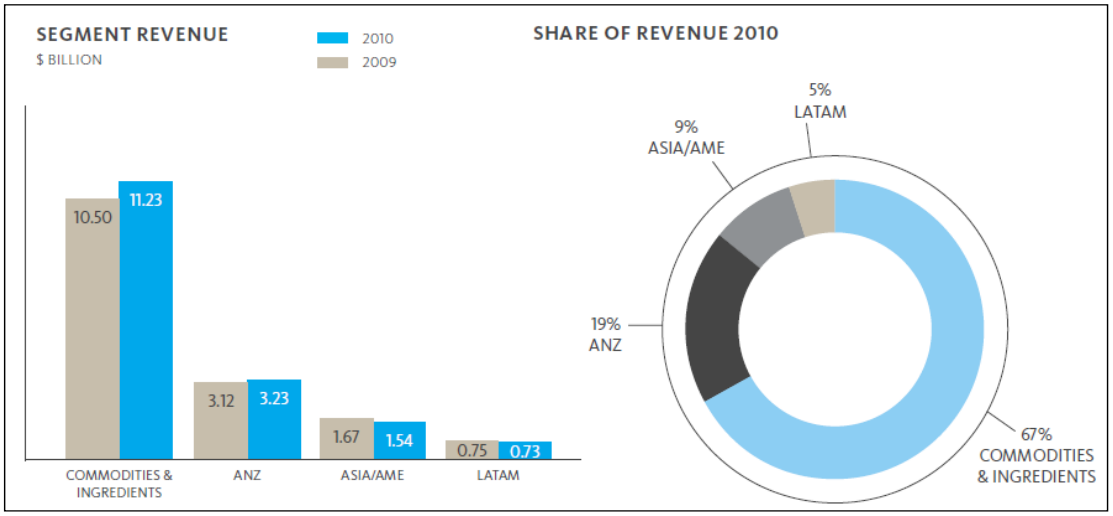
The main five business segments of Fonterra reflect its organisational structure. Three of these segments are defined by geographic region and are mainly consumer-focused, whereas the other two are centred on international ingredients business[30]. See Figure 2 for each segment's respective revenue in year 2010. The geographic segments include:

- **Australia/New Zealand (ANZ)** – This segment manages the operations and consumer brands in New Zealand and Australia, including businesses marketing brands such as Anchor, Tip Top and Mainland. [31] [32] ANZ is the largest consumer foods business in Australasia, which provides Fonterra with an assured supply of fresh milk, a network of 16 manufacturing sites, and marketing and brand synergies, offering competitive advantage in the Trans-Tasman market. [33]
- **Asia/Africa, Middle East (Asia & AME)** – Asia & AME manages operations in Asia, Africa and the Middle East. In December 2009, full control of Saudi New Zealand Milk Products (a joint-venture dairy manufacturing factory in Saudi Arabia) was gained, which will further secure Fonterra's manufacturing capacity in the Middle East. [34]
- **Latin America (Latam)** – This segment only represents Fonterra's business in Chile, Sorpole. [35] Fonterra's ownership Soprole is one of the company's largest consumer dairy investments. [36]

On the other hand, the international ingredients business activities are overlooked by:

- **Fonterra Trade & Operations (FTO)** – This segment reports Fonterra's New Zealand milk supply, manufacturing, global trade and supply chain activities. FTO mainly deals with the production and selling of dairy ingredients. These include Milk Supply, Shareholder Relations, Milk Collection, NZ Operations, Offshore Milk Sourcing and Processing, Supply Chain, Sustainability, Government Relations and Global Trade. [37] [38]
- **Fonterra Global Ingredients and Foodservice (GIF)** – GIF mainly concentrates on producing high-value dairy solutions, particularly in North Asia, North America and Europe. The main focus of GIF is on selling Specialty Ingredients and Value Add Ingredients. [39] [40]

Figure 2. Segment revenue for year 2010 [41]



* Figures for FTO and GIF are combined and reported as Commodities & Ingredients

Fonterra in Australia [42]

Overview: Fonterra and its predecessors have existed in Australia for over half a century. With revenues of A$3 billion, Fonterra employs 2,000 people, collects 21 per cent of Australia's milk and operates 11 manufacturing sites. In 2007 merged its Australian business (milk supply, manufacturing, ingredients, brands and foodservices), its New Zealand Brands business and Tip Top, its New Zealand ice cream business, into one strategic Trans-Tasman business unit.

Ingredients: Fonterra is the leading domestic dairy ingredients supplier and marketer in Australia, handling close to 50 per cent of Australia's domestic dairy ingredients business. Fonterra supplys ingredients to the bakery, confectionary/chocolate, health and nutrition, and processed food sectors. Fonterra works to meet its customers' needs for specialised solutions, including ingredients and products that enhance or protect consumers' health, for example: probiotics and the sports nutrition market.

Foodservices: Fonterra's Foodservices operations are based in Melbourne and provide Australian foodservice operators, including McDonalds, Dominos, Yum! (KFC and Pizza Hut), Oporto, Subway, Red Rooster, Muffin Break, Bakers Delight and Bidvest with branded dairy products, as well as core ingredients and ready-to-use products.

Fonterra in Asia [43]

Overview: Asia is one of the largest consumers of Fonterra's dairy ingredients, second only to America. The Asian market makes up about 40 per cent of Fonterra's total global sales. Countries including Japan, China and Indonesia are among Fonterra's top five international markets. Across Asia, Fonterra has more than 2,500 employees in 15 operating countries. These employees cover jobs that range from marketing, distribution, manufacturing services to production capacities. Following are the details of some of Fonterra's operations in Asian countries:

- **Indonesia** [44]- Fonterra Brands Indonesia employs over 150 permanent staff and over 1,300 outsourced employees. Fonterra Brands Indonesia partners with third party contract manufacturers and distribution parties to meet blending, packing and marketing needs in the Indonesian market.
- **Malaysia**[45]- In Malaysia Fonterra commands 76 per cent share of the adult milk category through its Anlene brand and 80 per cent share for prenatal dairy products with Anmum. Solivite, a 70 per cent owned Fonterra operation which produces cultured and acidified milk products, is also based in Malaysia. [46]
- **Philippines**[47]- In Philippines, Fonterra's operations are 157-employee strong with a head office in Quezon City (which employs around 60 employees) and a central warehouse in Pasig City. More than 80 products are available locally, of which 25 are locally manufactured by four contract manufacturers and co-packers. Directly servicing 27 key customers and partnering with 28 distributors in the retail channel, Fonterra work with over 500,000 outlets throughout Philippines.
- **Sri Lanka** [48] [49]- Fonterra is the largest dairy company in Sri Lanka, with a market share of almost 50 per cent. Fonterra's dairy products are manufactured from both milk produced in New Zealand and Sri Lanka. The manufacturing operations based at Bigyama produce both powdered as well as liquid dairy products.

Functional foods: Developed markets including Hong Kong, Japan, Korea and Singapore are at the leading edge of Fonterra's functional ingredients development. Japanese and Chinese consumers are particularly interested in new ingredients and functional foods.

Fonterra in the Middle East [50]

Overview: Fonterra has begun operations in the Middle East since 30 years ago. In the past few decades, business in the region has grown significantly due to the rising demand for dairy products among consumers as well as Fonterra's expertise in addressing specific health concerns.

Fonterra's presence in the Middle Eastern market includes a local holding company, Fonterra Brands, which is based in Dubai and operates across the United Arab Emirates (UAE), Saudi Arabia and Yemen. Around 185 employees are employed by Fonterra Brands. UAE and Saudi Arabia are the fastest growing markets in the region, and these two markets account for 60% of Fonterra's business in the Gulf region.

In June 2007, Fonterra launched its 'global brand' Anlene into the Middle Eastern market, and in April 2009, Fonterra entered Egypt by partnering with Arab Dairy Products Co. for the company to manage the franchising, processing and distribution of Anchor throughout Egypt. [51] [52] Fonterra's best selling brands in the Middle East are Chesdale, Anchor and Mainland.

Partnerships [53]

Fonterra has various partnerships around the world, including:

- **Dairy Partners Americas**

In March 2002 Fonterra established an alliance with Nestle to set up joint ventures the Americas. The joint venture, Dairy Partners Americas, operates in Bermuda, Brazil, Argentina and Ecuador. The alliance is established on a 50/50 basis, with Fonterra managing the large-scale milk procurement, processing, technologies and brands and Nestle providing its brands, product development expertise and distribution infrastructure. The partnership sources fresh milk from dairy farmers in the Americas and its ingredients from New Zealand.

- **DairiConcepts**

Through Fonterra's DairiConcepts joint venture, the company partners with Dairy Farmers of America. The partnership shares technologies, capital, knowledge and innovation to manufacture dairy products at 10 sites across the USA. DairiConcepts is the first commercial manufacturer of milk protein concentrate in the United States.

- **Dairy America**

Fonterra started its partnership with Dairy America in 2001, exporting skim milk produced by Dairy America through Fonterra's global network. Dairy America is an association of seven major US co-operatives.

- **Clover**

In May 2005, Fonterra concluded an agreement with South Africa's largest dairy company, Clover Industries Ltd, to investigate in dairy ingredients-related opportunities in sub-Saharan Africa. This was followed by the creation of a joint venture company, Clover Fonterra Ingredients (CFI), to carry out contract ingredient manufacturing, handle the marketing of dairy ingredients, and supply food service products to various quick-service restaurants throughout the sub-Saharan region.

- **DMV Fonterra Excipients**

DMV Fonterra Excipients is a joint venture between Fonterra and RoyalFriesland Campina, an European dairy company. DMV Fonterra Excipients is one of the largest providers of dairy-based excipients to the pharmaceutical market. The joint venture provides pharmaceutical-grade lactose, which is used as the carrier for active drug formulations in tablet and inhaler forms. DMV Fonterra Excipients has production plants in New Zealand, Germany and Holland.

Ownership and management structure

As a co-operatively owned company, Fonterra is governed by four external groups (see Figure 3): [54]

1. **New Zealand Dairy Farmers:** Fonterra is owned by over 11,000 dairy farmers who are spread throughout New Zealand. These shareholders of Fonterra represent 95 per cent of New Zealand's dairy farmers.
2. **Fonterra Board of Directors:** There are up to 13 directors on the Board of Directors. Nine are elected by shareholders and the rest are appointed by the Board.
3. **Shareholders' Council:** The Shareholders' Council looks after Fonterra's shareholders. It is made up of 35 shareholders representing 35 wards all over New Zealand. The Council operates independently of Fonterra and its main responsibility is to make sure the needs of supplier shareholders are recognised by the Board.
4. **Milk Commissioner:** The Milk Commissioner is appointed by the Shareholders' Council to mediate any disputes between shareholders and Fonterra.

Figure 3. Governance Structure of Fonterra

New Changes to Capital Structure (Currently implementing)

In September 2009, the Board of Directors announced a three-step process to remove the redemption risk of its shares and to prevent large amounts of capital from being washed in and out of the company's balance sheet due to the fluctuation of milk production. [55] [56] At present, the dairy farmers are buying Fonterra shares based on the level of their milk production. Once the process is implemented, farmers would buy and sell shares among themselves through a Fonterra Shareholders' Market instead of buying and selling through Fonterra.

In addition, A Fonterra Shareholders Fund would also be set up to allow farmers to sell the share benefits of distributions and value changes but preserve voting and milk payment rights. Farmers could also be able to buy dry shares that do not have voting rights. [57] The process, which has already been accepted by the dairy farmers in June 2010, will be able to meet Fonterra's short term (five years) capital needs while also retaining dairy farmers' control and ownership of Fonterra. [58] [59]

The three-step process that will evolve Fonterra's capital structure includes firstly **strengthening the share structure**. Under the new system, dairy farmers would be able to hold shares up to 120% of their milk production (the existing limit is closer to 100. Secondly, **share value would be restricted**. The new system would adjust Fonterra's share value to reflect that the ownership of share is limited to farmers only. A transition process would be designed to address the likely impact of this restriction on the share price. Thirdly, Fonterra would move to a system where **farmers buy and sell shares among themselves**, rather than exchanging through the Co-operative. [60]

Company strategy [61]

There are currently a number of main strategic targets which Fonterra is aiming to achieve through actualising innovative plans as well as carrying out concrete actions. These strategic goals include:

1. **Deliver sustainable co-operative performance** through increasing the company's flexibility, scale and operational efficiencies. Examples of actions and exercises taken in 2009 and 2010 include:
    - Launching the online trading platform "globalDairyTrade"
    - Adoption of the new Milk Price
    - Transformation of supply chain
    - Cost saving to offset inflation
    - Opening ED4, the world's largest Milk Dryer
    - Expansion of China farms

2. **Build trusted brands in chosen markets** through exiting from mature positions, continuing to invest in growing categories and consolidating operations. Examples of actions and exercises taken in 2009 and 2010 include:
    - Increasing holding of Soprole to 99%
    - Divestment of business in Western Australia
    - Acquisition of SKI brand (Australia) from Nestle
    - Launching Anlene and Anmum Materna in Chinese regional cities
    - Expansion of Food Services in Asia
    - Divestment of JV with Arla in the United Kingdom
    - Acquisition of full stake in JV with Saudi New Zealand Milk Products
    - Investment in Ultra-High Temperature (UHT) plant expansion

3. **Grow lasting customer partnerships** through leveraging proprietary processing and product intellectual property. Examples of actions and exercises taken in 2009 and 2010 include:
    - Establishing new innovation centre in Chicago
    - Commercialisation of CheddarPlus and C21
    - Expansion of DairiConcepts (USA) and DMV Fonterra Excipients (Europe)

Supply Chain- manufacturing locations and products [62]

New Zealand-

- **Canpac International:** Based in Hamilton, Canpac is Fonterra's largest secondary packager of milk powders. Canpac supplies branded nutritional powders, bulk blended nutritional milk powders, and cans and can components. Canpac's product blending facilities brands Fonterra's produces for export.
- **Clandeboye:** Clandeboye is one of Fonterra's seven South Island manufacturing sites, and the third largest of the 26 sites in New Zealand. Clandeboye is supplied by 865 farms through the Central South Island. The site produces milk powder, butter and cheese (cheddar varieties, Mozzarella, and Whey).
- **Edendale:** Edendale's facilities convert milk into whole, skim and butter milk powders and produces mineral casein for the Japanese and North American markets. The Anhydrous Milk Fat (AMF) plant exports product for use in consumer foods around the world.
- **Edgecumbe:** Processes protein products for use in sports drinks, protein bars, soups and baby foods, whey products for use in sports nutritional supplements, and ethanol for alcoholic beverages. The site also produces specialty cream products, butter, casein, lactose concentrate, Anhydrous Milk Fat and AMF products blended with vegetable oil.
- **Eltham:** Cheese from Fonterra's New Zealand primary processing sites is cut, grated, shredded and packaged for consumers around the world, including fast food chains Pizza Hut, Dominos, and McDonald's. Eltham is also home to one of Fonterra's speciality cheese operations, which produces cheeses such as blue vein, camembert and brie for the local and international markets.
- **Hautapu:** Manufactures a variety of specialty cheeses, including Edam, Gouda, Egmont and Cheddar products. The site also specialises in lactose, casein, milk protein and whey protein products, which are all exported to markets in Europe and the United States.
- **Kaikoura:** Kaikoura manufactures cheese that is used by fast food restaurants around New Zealand. The cheddar products manufactured by this site are also exported to Japan, the USA, Australia and Europe for both direct consumer use and as an ingredient in the manufacture of other consumer products.
- **Kapuni:** Kapuni produces refined-grade lactose for Fonterra's Ingredients businessas well as pharmaceutical grade lactose for DMV-Fonterra Excipients. A small quantity of the site's dry lactose is further processed into inhalation grade lactose for use in asthma inhalers.
- **Kauri:** The plant produces butter, skimmilk, wholemilk and nutritional powders for use in chocolates, milk reconstitutions and a variety of other foods. The site's Concentrated Milk Fat is exported to America, Europe, Australia and the Middle East.
- **Lichfield:** Cheese produced at Lichfield are destined for markets in Japan, America, Latin America Europe and Australia. Fonterra Lichfield also produces whey protein concentrate and isolates for use in infant formulas and energy drinks.

- **Longburn:** Collects milk for transportation to Whareroa and produces Mineral Acid Casein over the peak milk season for general trade use.
- **Maungaturoto:** Produces Whole Milk Powder for the South American market. Most of the Casein produced on site is used in processed cheese production and the site's whey powder is used in the production of Fonterra Brands products as a source of protein, nutritional powders, beverages and cultured products (yoghurt).
- **Morrinsville:** The site produces butter, whole and skim milk powder and Stolle milk.
- **Pahiatua:** Processes whole milk for use as an ingredient in a range of consumer products, including confectionery.
- **Plains:** Located in Christchurch, this plant specialises in producing buttermilk and skim milk powders.
- **Reporoa:** Produces food-grade ethanol for use in the manufacture of consumer food products and alcoholic beverages. The site also uses skim milk to produce a range of protein products, such as caseinate for nutritional supplements and lactalbumin.
- **Stirling:** Produces normal & reduced salt cheeses, such as Cheddar and Colby, to supply the Australian, EU, Middle Eastern, Central American, Asian and domestic markets. The site also produces whey protein concentrate for use in nutritional supplements, baby foods and sports drinks and lactose concentrate which is sent to other sites to be processed into sugar.
- **Takaka/Brightwater:** Located right at the top of New Zealand's South Island, Fonterra's Takaka and Brightwater sites produce skim milk powder, whole milk powder and whole milk concentrates for use in sweetened condensed milk, reconstituted milk, ice cream and other consumer dairy products.
- **Te Awamutu:** Produce a range of instant, regular, vitamin fortified and nutritional powders. Salted and unsalted butter products are also produced for markets around the world. The Anhydrous Milk Fat plant also produces sweet cream, whey cream and colostrum AMF for use in the reconstitution of milk and the manufacture of spreads, chocolate, ice cream and baking.
- **Te Rapa:** Produces nearly 20 per cent of the company's whole and skim milk powders. The site also turns its daily quota of 304 tanker loads of milk into a range of cream products, such as butter, cream cheese and Anhydrous Milk Fat.
- **Te Roto:** Supplies speciality cheese, such as creamy blue, brie and parmesan.
- **Tirau:** Produces technical casein which is then used to manufacture adhesives, textile fibers, paper coatings, leather finishing and paints. The site's acid casein is also used in the manufacture of a range of food products, including infant formulas, coffee whiteners, confectionary and cereals. Tirau lactalbumin is used in pharmaceutical applications, health foods and infant formula, and the site's ethanol is used in a range of household items, including perfumes and deodorants.
- **Tuamarina:** The Tuamarina plant in Marlborough removes water from milk before transporting it to the company's Clandeboye site, also in the South Island.

- **Waitoa:** Produces nutritional products, such as infant formula and dietary supplements, along with standard skim and whole milk powders.
- **Whareroa:** The site converts milk into instant whole, skim and butter milk powders. Butter, Cheddar, Colby, Egmont and Mozzarella are also manufactured.

Australia-

- **Balcatta**: Produces fresh, flavoured and functional milk, which is sold under the brands Anlene and Brownes across Australia.
- **Bayswater:** Manufactures convenience packs including Mainland Cracker Cuts, Munchables and On The Go, which are sold in Australia and New Ready-to-use sliced cheese is also produced at Bayswater.
- **Brunswick:** Produces Brownes yoghurt, Brownes cream and a range cheeses for the domestic market.
- **Cobden:** This site produces butter and spreads, which are sold under the Western Star and Mainland brands in Australia. Whole milk, skim milk, buttermilk powders and frozen cream are also produced here for the domestic and export markets.
- **Cororooke:** This site produces Italian cheeses, including Perfect Italiano mozzarella and ricotta, for the Australian and New Zealand markets. Cream and whey powders are also manufactured for both domestic and export markets.
- **Darnum:** Produces cream and whole and skim milk powders for both domestic and export markets.
- **Dennington:** Manufactures whole and nutritional milk powders which are sold locally and around the world.
- **Echuca:** Manufactures a range of yoghurts and dairy desserts that are sold under the Nestle and Connoisseur brands.
- **Spreyton:** The site produces milk powders (skim, whey and buttermilk), Anhydrous Milk Fat, lactose and frozen cream for the domestic and export markets. Butter and spreads sold under the Duck River and Western Star brands are also manufactured here.
- **Stanhope:** Produces a range of specialty cheeses including cheddar, parmesan, pecorino, romano and gouda for domestic and export markets. Stanhope also processes ingredient cheddar, ghee, AMF and milk powders (skim, whey and buttermilk) for export.
- **Wagga Wagga:** Produces Riverina Fresh white milk, yoghurt, desserts and cream cheese.
- **Wynyard:** Manufactures cheddar cheese and whey powder for both domestic and export markets.

Asia-

- **Colombo (Sri Lanka):** In Sri Lanka, Fonterra produces fresh milk, Ultra Heat Treated (UHT) milk, milk powder in sachets and cultured products for domestic consumption.
- **Selangor:** Fresh milk, canned milk powder, Ultra Heat Treated (UHT) milk and cultured products are produced in Malaysia at its Dairymas operation.

Middle East-

- **Saudi NZ Milk Products:** Operates a site in Damman (Saudi Arabia) which produces processed cheese, feta, sachet and canned milk powders that are sold throughout the Gulf States.

North America-

DairiConcepts has nine manufacturing sites across the USA, including a large Milk Protein Concentrate (MPC) plant. DairiConcepts mainly produces cheese and dairy powders, cheese concentrates, functional dairy replacement systems and hard Italian cheeses. DairiConcepts also supplies dairy ingredients to a number of America's leading brands. The nine manufacturing sites are located in:

- Allerton, IA
- Bruce, WI
- Chili, WI
- Eldorado Springs, MO
- Greenwood, WI
- Hummelstown, PA
- Pollock, SD
- Portales, NM
- Springfield, MO

South America-

Dairy Partners America (DPA), the 50/50 joint venture between Fonterra and Nestle, operates 13 manufacturing sites across Brazil, Argentina, Venezuela, Colombia and Ecuador. These sites collect and process of fresh milk, manufacture dairy products, and distribute ingredients commodities and consumer goods. These sites are located in-

- DPA Araras, Brazil
- DPA Barra Mansa, Brazil
- DPA Cayambe, Ecuador
- DPA Chivacoa, Venezuela
- DPA Firmat, Argentina
- DPA Goiania, Brazil
- DPA Itabuna, Brazil
- DPA Ituiutaba, Brazil
- DPA Rialma, Brazil
- DPA San Andres, Argentina
- DPA Valencia, Venezuela
- DPA Valledupar, Colombia
- DPA Villa Nueva, Argentina

Soprole: Soprole, the Chilean-based joint venture between Fonterra and Soprole, has operations in Los Angeles, Los Lagos and Osorno that produce cheese, milk powder, butter and whey permeate powders. Soprole also manufactures a range of dairy products, including milk, Ultra Heat Treated (UHT) milk, yoghurt, table spreads and desserts, for domestic and international markets.

- Soprole Los Angeles
- Soprole Los Lagos
- Soprole Osorno
- Soprole - San Bernardo
- Soprole Santiago

Research and Development (R&D)

Fonterra invests in R&D in the aim to be at the forefront of innovation, to pursue processes that are more efficient and to develop more innovative produces. Below are some R&D projects that Fonterra is currently working on:

Processes [63]

- **Manufacturing Innovation:** Increases manufacturing efficiency while driving down operating costs
- **High Pressure Processing:** Aims to turn the water pressures that are normally used as a "blunt" food preservation tool into a high precision instrument for working with dairy products.
- **Heat Recovery Loop:** This project sees products requiring cooling and heating receiving stored energy recovered from other product streams. In other words, product streams are indirectly heated and cooled by each other, which will in turn bring more efficiency
- **Highly Automated Manufacturing:** This project endeavours to see manufacturing processes automated by leading edge dairy manufacturing technology and process innovation. A number of HAM technologies have already been implemented in Fonterra's manufacturing facilities.
- **Milk Concentration Technology:** Saves cost and energy through decreasing the number of tanker movements. This has already been implemented at Fonterra's Tua Marina site in New Zealand's South Island.

Innovation in the dairy sector [64]

Fonterra has Innovation Centres in New Zealand, Australia, China and Singapore that are dedicated to R&D in a wide range of sciences, including forage and bovine genetics, nutrition, flavours, texturants and packaging materials. Fonterra also has a Strategic Innovation Group that is chaired by CEO Andrew Ferrier. The Group manages Fonterra's innovation activities and checks that the company has the appropriate and required capability and resources to engage in these projects.

Fonterra also belongs to a network called InnovationXchange, which helps companies with safely exchanging intellectual property to develop networks with potential innovation partners. On the other hand, Fonterra also has a fully owned subsidiary, ViaLactia Biosciences, which is a biotechnology company that concentrates on identifying, discovering and commercialising methods of selection and genes that are affecting pasture grasses, milk production and milk composition.

Innovative Products [65]

Chesdale Chocolate Cheese Slices: Developed for the Asian market in response to the research finding which pointed out that cheese is now increasingly valued in Asia.

Anlene: The brand Anlene incorporates products that are specially formulated for bone health maintenance, especially for adults. Anlene is the product of over US$40 million dollars of investment in bone research and a team of 19. This brand has continued to advance bone science through leading bone health innovation.

Probiotics: Fonterra's two single probiotic strains, DR10 and DR20 are formulated to maintain a healthy digestive balance, bolster the gut's defences, increase the overall immune system, improving infection resistance, and providing protection from daily stresses. The probiotic is now licensed to the world's biggest culture supplier.

Savoury Powder: Fonterra's savoury powder allows the level of sodium to be reduced by at least a third while boosting savoury flavours in a range of processed foods. This has enabled great taste to be preserved while salt is reduced. The product boosts meat, cheese and vegetable flavours in a variety of foods. Primarily made from wholemilk using a fermentation process that is patented, all of the ingredients used to produce this are natural.

Fonterra- Commentary Summary

With a long history as a dairy product exporter and the world's ninth largest milk producer, around 95% of New Zealand's total production is exported around the world. Being New Zealand's largest company, Fonterra itself is among the globe's largest raw milk processors and about 95% of its revenue is gained outside New Zealand through direct sales to over 100 countries. [66]Although it is now one of the world's top 10 dairy companies and its practices in the past decade have proven the cooperative's capacity, Fonterra is nevertheless facing various challenges to its performance and sustainability. The current summary will provide an overview of the commentaries on Fonterra's cooperative structure, 2008 Chinese Milk Scandal, and present challenges.

1. Cooperative Structure

- Supply Chain

Fonterra's superior knowledge of milk production, processing technology, and consumer markets has allowed it to become a company that is globally competitive. Being a cooperative that is largely export-oriented, Fonterra has implemented an effective supply chain system that is fully vertically integrated. The company is in control of activities that range from managing dairy herds, producing milk products, to distributing end products in retail markets. Its packaging, quality control, transportation and freight forwarding have all been integrated, hence making the practices of the cooperative more effectual.

Although facing strong competition internationally from other multinationals, such as Danone and Nestlé, Fonterra upholds its global status and performance through maintaining a strong research base, employing a flexible integrated supply chain, as well as forming business partnerships with other companies in foreign markets. Fonterra's supply strategy runs along two tracks in foreign markets. While operating in countries that have strict requirement for food products, Fonterra keeps tight control over the raw ingredients and products. In other markets where the relevant regulations are less strict, Fonterra would choose to outsource some activities within the supply chain in order to increase efficiency and flexibility. [67] [68]

However, despite above highlights of Fonterra's supply chain structure, the cooperative has faced significant supply chain constraints right from the beginning of its inception. These constraints include the cost in energy and time to reach distant overseas market, a lack of sufficient raw milk supply from New Zealand to meet global corporate demand and the seasonality of milk production indicating a need to retain inventory of product. On the other hand, various new supply chain challenges have emerged over recent years and effective supply chain management no longer concerns the products only. Consumers and campaigns are now also focusing on issues such as environmental sustainability, carbon footprint, animal welfare and movement towards buying local and decreasing food miles.

To date, Fonterra has already conducted several projects that seek to reinforce sustainable farming in New Zealand. These projects include Clean Streams Accord, Nutrient Budgeting, Pastoral

Greenhouse Consortium, and the activities that Fonterra has engaged in aimed to understand more about its carbon footprint through scientific research, increase energy efficiency, eliminate waste and recycle wastewater. In order to perform sustainably and successfully, Fonterra needs to further develop these projects and thus prove itself to be a sustainable dairy cooperative at every level in its global supply chain. [69]

- Capital Structure

While Fonterra has grown to become internationally competitive as an exporter in the past decade, the cooperative would still need to go through more transformation before it could reach its ambition. That is, to become a truly multinational enterprise that has operations that manage the developing, manufacturing, supplying, processing and selling of milk products around the world. In order to do embark on such transformation, Fonterra would require a capital structure that has the capacity to support the company's investment in local farms, the supply chain and in-market. Although the dairy farmers and the milk they provide are vital to the cooperative, they alone could not come up with sufficient capital that Fonterra requires to become genuinely global. [70]

Economic analyst Brian Gaynor points out that the main reason behind the determination of Fonterra's directors transform the cooperative's capital structure is the company's lack of permanent capital. [71] As the shares are tied to milk supply, once the milk supply decreases, shares will be redeemed and Fonterra would lose its funds. In addition, as most of Fonterra's earnings are distributed to its shareholders, the cooperation has almost no retained capital. Under such circumstance, any uncontrollable event (such as drought) could seriously affect the company's ability to carry out its activities or implement timely operations.

In June 2010, a new change to Fonterra's capital structure was accepted by the dairy farmers. Once the new system is implemented, the dairy farmers would trade shares among themselves rather than through the cooperative. Through this change, Fonterra hopes to shift the redemption risk from the company to the farmers who are exiting the cooperative. Business analyst Rod Oram points out that while this system is by far the most far-reaching than any previous proposal, it would be "tricky" to carry out the process fairly. Farmers deserve a true and fair price for the shares for sure, yet a very well-regulated and liquid market is needed to justly establish the share price.

Rod Oram suggests that liquidity is the biggest challenge, as in a thinly traded market, any seasonal or occasional by-shocks (such as drought or exchange rate fluctuation) could make the number of sellers greatly exceed the number of buyers, and thus distorting share price. Fonterra is hoping to overcome this issue through three improvements. First, the Fonterra Shareholders Fund will allow farmers to sell the share benefits of distribution and value changes while preserving their voting and milk payment rights. This will mitigate the financial burdens of the dairy farmers. Second, Registered Volume Providers such as banks or brokerages would be in the market assisting the trading of shares and holding them on a short-term basis while they match farmers who are buying

and selling. Third, Fonterra is proposing three years for farmers to buy or sell shares. This will allow sufficient time to smooth the procedure and the system. [72]

2. The 2008 China Milk Scandal [73]

In September 2008, the outbreak of Sanlu's contaminated milk powder scandal has challenged Fonterra's ambition of becoming genuinely global. Sanlu, the Chinese dairy company, is 43% owned by Fonterra. Rod Oram argues that Fonterra's disaster in China was not simply the result of Chinese corruption, but is in fact due to the company's flawed Chinese strategy. While Fonterra has enjoyed the rapid growth of export to China, the fast-rising Chinese consumption has urged Fonterra to start investing in local production. Similar to many other foreign investors, Fonterra's difficulties stemmed from its naivety in taking a minority stake in a local company.

Knowing that Fonterra is desperate to secure local production, Sanlu played on Fonterra's innocence by maximising the price Fonterra has to pay while decreasing the control Fonterra has. By 2005, Fonterra paid $US107m for a 43% stake in Sanlu. Furthermore, in 2007, Fonterra passed its technology and skills to run a plant for making high-value nutritional products to Sanlu. Sanlu took this skill and started a plant which manufactured infant formula that eventually led sickness in 6244 babies, of whom 158 have acute kidney failure, and four deaths.

This disaster reflects high vulnerability in Fonterra's strategy and its ineffective management system. The cooperation had inadequate control over the raw milk supply, as Sanlu relied on third-party collection depots that diluted the milk and then added highly poisonous melamine to maintain high protein value. As Fonterra has only allocated three directors and a number of technicians (out of which only one spoke Mandarin) to its investment in Sanlu, it is rather effortless for Sanlu to hide its activities and operations from Fonterra. [74] This incident reveals that Fonterra still needs to overcome more challenges before it could establish a trusted global brand.

3. Current Challenges

- Production and sustainability [75]

In New Zealand, Fonterra has two main strategic goals. The first is to encourage dairy farmers to continue growing milk supply at a rate of 2.5% per year (which has also been a trend in recent years). The second is to develop more value-added products so that the cooperative could remain profitable in spite of the growing numbers of lower-cost competitors overseas, especially from the emerging markets.

Both goals are challenging and will require much more capital investment throughout the supply chain. Without further investment and development, current technology and farming activities will limit the growth of milk production and it is highly unlikely for the supply to increase continuously. Radical improvements in both management practices and technology are required for the output of Fonterra to keep growing at a rate that is economically and environmentally sustainable.

While a 2020 strategy presented by Dairy New Zealand, the research body funded by levies, is in place, the strategy could only bring incremental improvements. Although the cost of production could be reduced, the value of the milk produced will not benefit from the current strategy. Yet at this moment the dairy sector is only distributing very little money into the area of science that has the potential to significantly enhance value and decrease costs: greenhouse gases. Fonterra has estimated that the 940g of greenhouse gases are produced for every litre of milk. These gases are generated in farming, processing and distribution. According to this estimation, around 15 million tonnes of greenhouse gases are produced every year, of which 85% is generated on-farm.

Research to date has proven greenhouses gases to be nutrients that are released into the air from farming activities. If more investment is made in science and encourage innovation in farming practices, the dairy sector could effectively tie up the loose ends of the nutrient cycle, enhance soil quality and animal productivity, which will in turn decrease on-farm costs, and increase the value of milk.

Despite having awareness of these potential benefits, Fonterra is only investing 0.02% of its revenues per annum to the work of the Pastoral Greenhouse Gas Research Consortium, the industry-government body that is working on this issue. Besides being rather sparing with research in sustainability, Rod Oram points out that Fonterra is also quite reserved when it comes to investing in science for its processing and products. It will be very unlikely for these incremental improvements to shift the products and the cooperation up the value chain. In this sense, if Fonterra wants to maintain its current growth rate, it will have to start looking into more technological advancements, which could not be achieved without more capital and resource investment.

- Global Presence

As previously mentioned, if Fonterra wants to have a thriving future and become truly sustainable, it will have to establish a strong global presence. While the traditional strategy of simply exporting has benefited Fonterra in the past decade, this strategy has limited upside, as world demand for milk products is increasing each year at a rate that New Zealand's domestic production could not keep up with.

With only a little more land that could be used for dairy farming, it is unlikely for New Zealand to see radical increase in milk production. Even if world milk prices increase, maintaining profitability would still be a challenge as costs of land and other inputs are also high. In terms of production cost, Fonterra and New Zealand will not be able to compete against the emerging low-cost countries that have abundant resources and workforce, such as Brazil, Argentina and Chile.

At the moment, New Zealand farmers, companies and investors are quite involved in the current transformation of the global dairy sector. Capital, skills and technologies are injected by these key players into these emerging markets. Currently around 20% of Fonterra's products are manufactured from non-New Zealand milk and it is already one of the largest dairy exporters from the United States. According to Fonterra's chairman, Henry van der Heyden, some day in the future,

Fonterra will be sourcing half of its milk supply from New Zealand and the other half from other countries around the world (The predicted year cited in Gray & Le Heron (2010) was 2015). On the other hand, Nestle is buying products equivalent to around $1 billion per year from Fonterra, which accounts for 8% of Fonterra's total business. These diversified trade and exchange around the world is deepening Fonterra's partnership and relationships with its major customers. [76]

Fonterra's launch of *global*DairyTrade, an Internet trading site that allows customers around the world to bid on its contracts, has brought basic risk management tools that are already used for many other commodities to the dairy industry. The fact that Fonterra has the global stretch necessary to conduct such a trading platform is again proving that Fonterra is globalising and moving beyond a large New Zealand-based exporter. [77]

4. **Brief Conclusion**

From these commentaries, it is clear that Fonterra needs to go through major transformations before the practices of the cooperative could become genuinely global and sustainable. The areas that require transformation or improvement include its global supply chain, capital structure, allocation of financial investment, production location, technological innovation, business partnership and overseas management strategy. Also, Fonterra would need to benchmark its performance in response to recent trends, issues and campaigns such as environmental sustainability and energy efficiency. While Fonterra has already achieved some notable results since its establishment in 2001, revolutions are now needed for the cooperative to become a globally successful multinational enterprise.

Nestlé- Switzerland

Abstract

Headquartered in Vevey, Switzerland, Nestlé is one of the world's largest food and nutrition company. Nestlé now operates 115 countries and has around 280,000 employees worldwide. Nestlé produces a diversified portfolio of product categories ranging from baby foods, bottled water, chocolate, coffee, dairy to healthcare and sports nutrition. Well-known product brands owned by Nestlé include NesCafé, Nespresso, Kit Kat, Häagen-Dazs and Mövenpick. Milk products and ice cream represent around one-fifth of the company's total turnover in 2009. According to the company's 2009 report, the operations, offices and manufacturing sites of Nestlé are present in 115 countries around the world and Nestlé has 449 factories in 83 countries. Through engaging in various partnerships with organisations that range from business enterprises to development boards, Nestlé is developing its business globally as well as establishing a favourable image. Its dairy business joint-venture with Fonterra, Dairy Partners Americas, operates in Bermuda, Brazil, Argentina and Ecuador. In terms of its management structure, Nestlé is governed by a Board of Directors, while the daily management of the Nestlé business is overwatched by the Executive Board members. The Nestlé Group is managed according to geographies (Zones Europe, Americas and Asia/Oceania/Africa) for most of the food and beverage business, with the exceptions of Nestlé Waters, Nestlé Nutrition, Nestlé Purina Petcare, Nespresso, Nestlé Professional and Nestlé Health Science which are managed on a global basis.

The company values research and development and perceives it as a key competitive advantage for the company. With 29 research, development and technology facilities worldwide, Nestlé has the one of the largest R&D networks of any food company that employs over 5,000 people. Currently, Nestlé's goal is to be recognised as the world leader in nutrition, health and wellness that is trusted by all its stakeholders. Nestlé's outstanding performance which developed significantly over the past century clearly illustrates its effective business strategies and unique strengths. However, despite Nestlé's prominent global status, the enterprise is still facing a number of challenges and has undergone a few controversies in the past few years. Similar to all large corporations, Nestlé needs to further enhance its internal coordination and translation of messages across different divisions and geographical regions. On the other hand, while the company has made efforts to promote itself as an enterprise that values CSR in its practices, there had been numerous controversies surrounding its operations. These include criticisms towards Nestlé's bottled water advertisements, deforestation associated with Nestlé's sourcing of palm oil, as well as the IUF-led Nespressure Campaign that targeted Nestlé's violation of union rights. Overall, Nestlé will need to carefully manage its activities and operations to ensure that it can maintain the green and socially responsible image that it has been trying to establish.

General information

Founded in 1866 by Henri Nestlé in Vevey, Switzerland, Nestlé is one of the world's largest food and nutrition company. Nestlé now operates 115 countries and has around 280,000 employees worldwide. Nestlé is ranked third by milk intake and first by turnover among world dairy companies in 2010.[78] [79] The timeline below reviews the significant events that mark the history of Nestlé: [80]

1866-1905 In 1866, two separae Swiss enterprises that would later form the core of Nestle, the Anglo-Swiss Condensed Milk Company and the Farine Lactee Henri Nestle Company, were established.

1905-1918 The Company formed by the merger was called the Nestlé and Anglo-Swiss Milk Company. By the early 1900s, the Company was operating factories in the United States, Britain, Germany and Spain. In 1907, the Company began full-scale manufacturing in Australia, its second-largest export market. Warehouses were built in Singapore, Hong Kong, and Bombay to supply the rapidly growing Asian markets.

1918-1938 The manufacture of chocolate became the Company's second most important activity. New products appeared steadily: malted milk, a powdered beverage called Milo, a powdered buttermilk for infants, and, in 1938, Nescafé.

1938-1944 Due to World War II, neutral Switzerland became increasingly isolated, and many of Nestlé's executives were transferred to offices in Stamford, Connecticut. To overcome distribution problems, factories were established in developing countries, particularly in Latin America.

1944-1975 Throughout this period, Nestlé's growth was based on its policy of diversifying within the food sector to meet the needs of consumers. Mergers and acquisitions made by Nestlé within this period include Alimentana S.A., the manufacturer of Maggi seasonings and soups (1947), Crosse & Blackwell, the British manufacturer of preserves and canned foods (1960), Findus frozen foods (1963), Libby's fruit juices (1971), Stouffer's frozen foods (1973), and finally becoming a shareholder in L'Oréal (1974), which is outside the food industry .

1975-1981 Nestlé's rapid growth in the developing world partially offset a slowdown in the Company's traditional markets, but it also carried with it the risks associated with unstable political and economic conditions. To maintain a balance, Nestlé made its second venture outside the food industry by acquiring Alcon Laboratories, Inc., a U.S. manufacturer of pharmaceutical and ophthalmic products.

1981-1995 The Company's strategy for this period was twofold: improve its financial situation through internal adjustments and divestments, and continue its policy of strategic acquisitions. In 1984, Nestlé's improved bottom line allowed the Company to launch a new round of acquisitions, including a public offer of $3 billion for the American food giant Carnation. At the time, the takeover, sealed in 1985, was one of the largest in the history of the food industry.

1996-2002 In July 2000, Nestlé launched a Group-wide initiative called GLOBE (Global Business Excellence), aimed at harmonizing and simplifying business process architecture. Two major acquisitions took place in North America in 2002 Dreyer's and Chef

America, Inc. Also in 2002, the joint venture Dairy Partners Americas was set up with Fonterra; and Laboratoires innéov was set up, another joint venture, this time with L'Oréal.

2003-2009 Acquisitions made during this period include Mövenpick Ice Cream, Jenny Craig, Uncle Toby's, Novartis Medical Nutrition, Gerber and Henniez. Also, Nestlé entered into a strategic alliance with the Belgian chocolatier Pierre Marcolini. In 2008, Nestlé began a process of selling Alcon by divesting 24.8% to Novartis. In 2009, Nestlé opened the Chocolate Centre of Excellence in Broc, Switzerland, with Pierre Marcolini one of the master chocolatiers.

Below are the key data of Nestle (2010 Data): [81]

Annual Sales (Total)	CHF 110 billion (≈EUR 98.65 billion as of Aug 2011)
Net profit (Total)	CHF 34 billion (≈EUR 30.5 billion as of Aug 2011)
Annual Sales (Dairy) [82]	EUR 18.55 billion
Milk Equivalent Intake (Worldwide) [83]	12 Million Tonnes
No. of Employees (Worldwide)	Around 280,000

Brands and Product mix

Nestlé produces a diversified range of product categories (see Figure 1) and owns various product brands, including: [84]

Baby foods: Cerelac, Gerber, Gerber Graduates, NaturNes, Nestum

Bottled water: Nestlé Pure Life, Perrier, Poland Spring, S.Pellegrino

Cereals: Chocapic, Cini Minis, Cookie Crisp, Estrelitas, Fitness, Nesquik Cereal

Chocolate & confectionery: Aero, Butterfinger, Cailler, Crunch, Kit Kat, Orion, Smarties, Wonka

Coffee: Nescafé, Nescafé 3 in 1, Nescafé Cappuccino, Nescafé Classic, Nescafé Decaff, Nescafé, Dolce Gusto, Nescafé Gold, Nespresso

Culinary, chilled and frozen food: Buitoni, Herta, Hot Pockets, Lean Cuisine, Maggi, Stouffer's, Thomy

Dairy: Carnation, Coffee-Mate, La Laitière, Nido

Drinks: Juicy Juice, Milo, Nesquik, Nestea

Food service: Chef, Chef-Mate, Maggi, Milo, Minor's, Nescafé, Nestea, Sjora, Lean Cuisine, Stouffer's

Healthcare nutrition: Boost, Nutren Junior, Peptamen, Resource

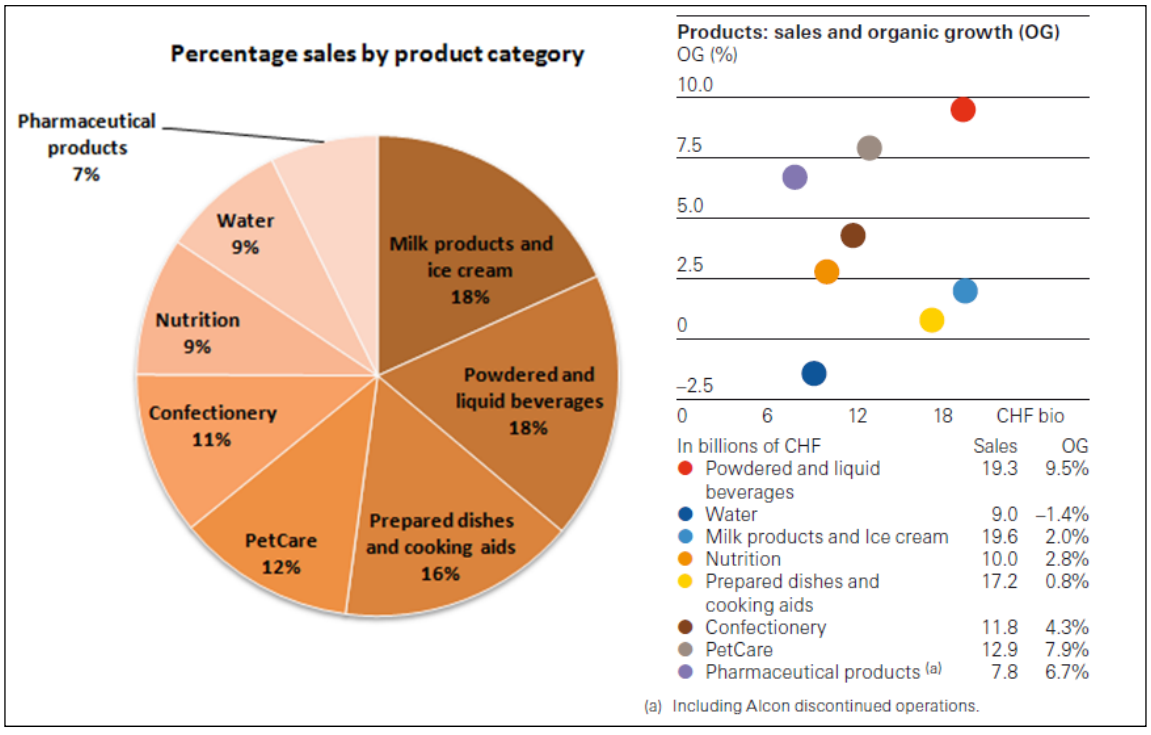
Ice cream: Dreyer's, Extrême, Häagen-Dazs, Mövenpick, Nestlé Ice Cream

Petcare: Alpo, Bakers Complete, Beneful, Cat Chow, Chef Michael's Canine Creations, Dog Chow, Fancy Feast, Felix, Friskies, Gourmet, Purina, Purina ONE, Pro Plan

Sports nutrition: PowerBar

Weight management: Jenny Craig

Figure 1. Sales percentage, sales volume and organic growth (%) by product category [85]



The Dairy Brands:

1. **Carnation:** This brand produces the following products-
   - *Sweetened Condensed Milk* (including Sweetened Condensed Milk and Light Sweetened Condensed Milk)
   - *Caramel*
   - *Evaporated Milk*
   - *Extra Thick Cream*

2. **Coffee-Mate:** A non-dairy creamer that is lactose and cholesterol free and used to make coffee richer and smoother. This brand produces the following products-
   - *Coffee-Mate Powder* (27 variations/ different flavours/ packaging)
   - *Coffee-Mate Liquid* (55 variations/ different flavours/ packaging)

3. **Dreyer's**: Ice cream and frozen treats. Encompasses the following brands-
   - Grand
   - Slow Churned
   - Dibs
   - Fruit Bars.
4. **Häagen-Dazs**: This brand produces the following products-
   - Ice cream
   - Sorbet
   - Frozen yogurt
5. **La Laitière:** This brand manufactures light desserts. Examples of its produces include-
   - *Sorbet range*
   - *Bulk ice cream* without any artificial colourings or flavourings

6. **Mövenpick:** This brand produces Swiss **i**ce cream

7. **Nestlé Ice Cream:** Produces a range of ice cream-
   - All natural
   - Low/ No sugar
   - Lactose-free
8. **Nido:** The brand offers a complete range of milk and milk-based products that offer nutrition solutions for each stage of childhood. Nido products feature instant dry whole milk with Vitamins A & D. The products range include-
   - *Nido Clasica* (whole powdered milk that contains calcium, vitamins A and D, and protein)
   - *Nido Kinder 1+* (non-fat powdered milk that is fortified with Prebio 1, a prebiotic fibre that benefits a child's digestive system)
9. **Sjora:** Produces a beverage made from a blend of milk and fruit juices.

Operations by region and country

With its headquarters in Vevey, Switzerland, the operations, offices and manufacturing sites of Nestlé are present in 115 countries around the world. As of 2009, Nestlé has 449 factories in 83 countries. See Tables 1 to 5and below for a summary the spread of Nestlé's sales, factories and employees worldwide. [86]

Continent	Employees (% of world total)	Factories (number)
Europe	33.9%	159
Americas	38.0%	167
Asia, Oceania and Africa	28.1%	123

Table 1. Employees and Factories by Continent

Employees by activity	
Factories	149, 000
Administration/ sales	129, 000

Table 2. Employees by Activity

Total sales by continent (in millions EUR)	
Europe	33,121
North America	29,043
Latin America/ Carribean	13,548
Asia	13,373
Africa	2,726
Oceania	2,485

Table 3. Sales by Continent

Total Food/Beverage sales by continent (in millions EUR)	
Europe	31,272
Americas	38,751
Asia, Oceania and Africa	17,421

Table 4. Total Food/Beverage Sales by Continent

Total sales by principal markets (in millions EUR)	
United States of America	26,898
France	7,058
Germany	5,086
Brazil	5,071
Italy	3,405
United Kingdom	3,268
Mexico	2,735
Spain	2,444
Greater China Region	2,203
Japan	2,160
Switzerland	1,793
Rest of the World	32,176

Table 5. Total Sales by Principal Markets

Summary of Nestlé's activities by geographical unit

- **Europe** [87]

In 2007, Nestlé outsourced its European yoghurt and desserts business to either its 60/40 joint venture with Lactalis (Lactalis holds the 60%) or licensed producers in Germany and Switzerland. In 2008, Nestlé acquired Delta, a Greek-based ice cream producer and fortified its presence in south-eastern Europe. Furthermore, in 2009, the company began to disinvest from its ice cream business and instead focused more on premium brands. [88]Nevertheless, Nestlé still has an important milk-based infant nutrition business in Europe. As of 2009, there are a total of 159 factories in Europe and these factories are spread throughout the following countries (the number in the bracket denotes number of factories): [89]

- Austria (1)
- Belgium (3)
- Bulgaria (2)
- Czech Republic (3)
- Finland (2)
- France (30)
- Germany (22)
- Greece (4)
- Hungary (3)
- Italy (15)
- Netherlands (2)
- Poland (8)
- Portugal (4)
- Republic of Ireland (1)
- Republic of Serbia (1)
- Romania (1)
- Russia (11)
- Slovak Republic (1)
- Spain (13)
- Sweden (2)
- Switzerland (12)
- Turkey (4)
- Ukraine (2)
- United Kingdom (12)

Out of the above countries, the following countries both import and produce dairy (including ice cream) and nutrition products locally:

- Bulgaria
- Finland
- France
- Germany
- Greece
- Hungary
- Italy
- Netherlands
- Poland
- Portugal
- Republic of Serbia
- Russia
- Spain
- Switzerland
- United Kingdom

Other European countries, including Austria, Belgium, Czech Republic, Republic of Ireland, Romania, Slovak Republic, Sweden, Turkey and Ukraine, only import dairy and nutrition products and do not produce locally.

Americas [90]

As of 2009, there are a total of 167 factories in Europe and these factories are spread throughout the following countries (the number in the bracket denotes number of factories): [91]

- Argentina (8)
- Brazil (23)
- Canada (10)
- Chile (6)
- Colombia (4)
- Costa Rica (1)
- Cuba (3)
- Dominican Republic (2)
- Ecuador (2)
- Guatemala (1)
- Jamaica (1)
- Mexico (13)
- Nicaragua (1)
- Panama (1)
- Peru (1)
- Trinidad and Tobago (1)
- United States (81)
- Uruguay (1)
- Venezuela (7)

Out of the above countries, the following countries both import and produce dairy (including ice cream) and nutrition products locally:

- Argentina
- Brazil
- Canada
- Chile
- Colombia
- Costa Rica
- Cuba
- Dominican Republic
- Ecuador
- Jamaica
- Mexico
- Nicaragua
- Panama
- Peru
- Trinidad and Tobago
- United States
- Venezuela

Other American countries, including Guatemala and Uruguay, only import dairy and nutrition products and do not produce locally.

Asia, Oceania, Africa and Middle East [92]

Africa and Middle East

As of 2009, there are a total of 54 factories in Africa and Middle East and these factories are spread throughout the following countries (the number in the bracket denotes number of factories): [93]

- Algeria (1)
- Bahrain (1)
- Cameroon (1)
- Côte d'Ivoire (2)
- Egypt (3)
- Ghana (1)
- Guinea (1)
- Iran (2)
- Israel (9)
- Jordan (1)
- Kenya (1)
- Lebanon (1)
- Morocco (1)
- Nigeria (1)
- Pakistan (4)
- Qatar (1)
- Saudi Arabia (7)
- Senegal (1)
- South Africa (9)
- Syria (1)
- Tunisia (1)
- United Arab Emirates (2)
- Uzbekistan (1)
- Zimbabwe (1)

Out of the above African, Middle Eastern and Central/Western Asian countries, the following both import and produce dairy (including ice cream) and nutrition products locally:

- Cameroon
- Côte d'Ivoire
- Egypt
- Ghana
- Iran
- Israel
- Kenya
- Morocco
- Nigeria
- Pakistan
- Saudi Arabia
- South Africa
- Syria
- Tunisia
- United Arab Emirates
- Uzbekistan
- Zimbabwe

Other African, Central/Western Asian and Middle Eastern countries, including Algeria, Bahrain, Guinea, Jordan, Lebanon, Qatar and Senegal, only import dairy and nutrition products and do not produce locally.

Asia and Oceania

As of 2009, there are a total of 69 factories in Asia and Oceania and these factories are spread throughout the following countries (the number in the bracket denotes number of factories):

- Australia (11)
- Bangladesh (1)
- Greater China Region (18)
- India (6)
- Indonesia (3)
- Japan (3)
- Malaysia (6)
- New Caledonia (1)
- New Zealand (2)
- Papua New Guinea (1)
- Philippines (4)
- Republic of Korea (2)
- Singapore (1)
- Sri Lanka (1)
- Thailand (6)
- Vietnam (3)

Out of the above countries, the following Asian and Oceania countries both import and produce dairy (including ice cream) and nutrition products locally:

- Australia
- Bangladesh
- Greater China Region
- Indonesia
- Japan
- Malaysia
- New Caledonia
- Papua New Guinea
- Philippines
- Sri Lanka
- Thailand
- Uzbekistan

On the other hand, India and Republic of Korea only produce dairy and nutrition products locally, whereas Singapore only imports these products.

Milk collection [94]

China - Nearly 24 000 farmers in Heilongjiang, North-east China, deliver their fresh milk to 78 milk collection centres. Nestlé invests nearly USD 200 million a year into the local economy through milk payments, taxes, services and salaries.

Colombia - Nestlé is the third largest buyer of milk in Colombia where two milk districts produce 226 000 tonnes a year. Nestlé pays around USD 5 million a month to 4 000 local dairy farmers, and a further 10 000 people in the region work in the milk supply chain as milkers, rural workers, transporters and traders.

India - The Nestlé milk-processing factory in Moga northern India opened in 1959. Since then the supplier base has grown from 4 600 farmers providing 2 000 tonnes of milk to 100 000 farmers in 2,600 villages producing more than 300,000 tonnes.

Indonesia – Located in Waru, East Java, the Nestlé factory started purchasing milk from local cooperatives in May 1975. Today, Nestlé Indonesia sources 480 tonnes of fresh milk every day (141 000 tonnes a year) from 27 local cooperatives.

Pakistan - Nestlé invests more than USD 180 million a year in milk sourcing in Pakistan. Through milk delivery points in 2 000 villages, more than 135 000 dairy farmers supply close to half a million tonnes of milk a year to two Nestlé factories.

Partnerships

Nestlé is engaged in various partnerships with organisations that range from business enterprises to development boards. While some of these collaborations aim to expand the company across overseas markets [95] or to develop new products[96], other partnerships are targeted at community development or current issues (such as climate change). [97] [98] Below are some examples of Nestlé's partnership with other entities.

Joint Ventures:

- **Dairy Partners Americas (DPA)** [99]

In March 2002 Nestlé established an alliance with Fonterra to set up joint ventures the Americas. The joint venture, Dairy Partners Americas, operates in Bermuda, Brazil, Argentina and Ecuador. The alliance is established on a 50/50 basis, with Fonterra managing the large-scale milk procurement, processing, technologies and brands and Nestle providing its brands, product development expertise and distribution infrastructure. The partnership sources fresh milk from dairy farmers in the Americas and its ingredients from New Zealand.

- **Cereal Partners Worldwide S.A.** [100]

Established in 1989, Cereal Partners Worldwide (CPW S.A.) is a 50/50 joint venture between Nestlé S.A. and General Mills Inc. It is one of the world's leading breakfast cereals producers, with 2.8 billion CHF sales in 2008. This joint venture now owns over 50 brands -including the Fitness® franchise, Cheerios®, Chocapic® and Nesquik®- with sales in over 130 countries worldwide. The company is headquartered in Lausanne, Switzerland and operates through seven regions covering Europe, Middle East & Africa, Latin America, Asia and Oceania with strong positions in emerging markets such as Russia and Brazil. Cereal Partners Worldwide has 14 factories and employs nearly 4000 people all over the world.

- **Beverage Partners Worldwide (BPW)** [101] [102]

Beverage Partners Worldwide (BPW) is an entrepreneurial joint venture between The Coca-Cola Company and Nestlé S.A. It focuses on producing ready-to-drink tea and combines the leading nutrition expertise of Nestlé S.A. with the marketing and distribution leadership of The Coca-Cola Company and its network of Bottlers.

Formed in 2001, the Joint Venture (JV) has steadily and BPW now operates in more than 60 countries worldwide, with headquarters in Zurich and offices in the Americas and Asia. The JV operates globally with the exception of the USA and Japan. Leading brands, NESTEA® has been growing consistently to become a leading brand worldwide. In 2008, YUAN YE™ was introduced and has become one of the fastest growing ready-to-drink tea brands in China.

- **Laboratoires Innéov** [103] [104]

Formed in 2002, Laboratoires Innéov is a 50/50venture formed by L'Oreal and Nestlé to develop cosmetic nutritional supplement. Innéov's European subsidiaries, all belonging to the Laboratoires Innéov, has been set up in Germany, Belgium, Spain, France and Portugal.

Projects and campaigns on development and current issues:

- **International Federation of Red Cross** [105]

In November 2010, Nestlé and the International Federation of Red Cross and Red Crescent Societies renewed their collaboration until 2013 and will focus especially on building more resilient rural communities in Côte d'Ivoire. Under this agreement, Nestlé will contribute CHF 2.25 million over three years to projects related to water and sanitation, food security and to assist with the IFRC's World Disasters Report.

- **Partnerships on Environmental Sustainability** [106]

Nestlé also promotes sustainable environmental performance through taking part in or initiating projects such as the Carbon Disclosure Project, Greening the Supply Chain programme. Global issues such as climate change, biodiversity and resource depletion are also covered through strategic partnership with the University of Cambridge Programme for Sustainability Leadership.

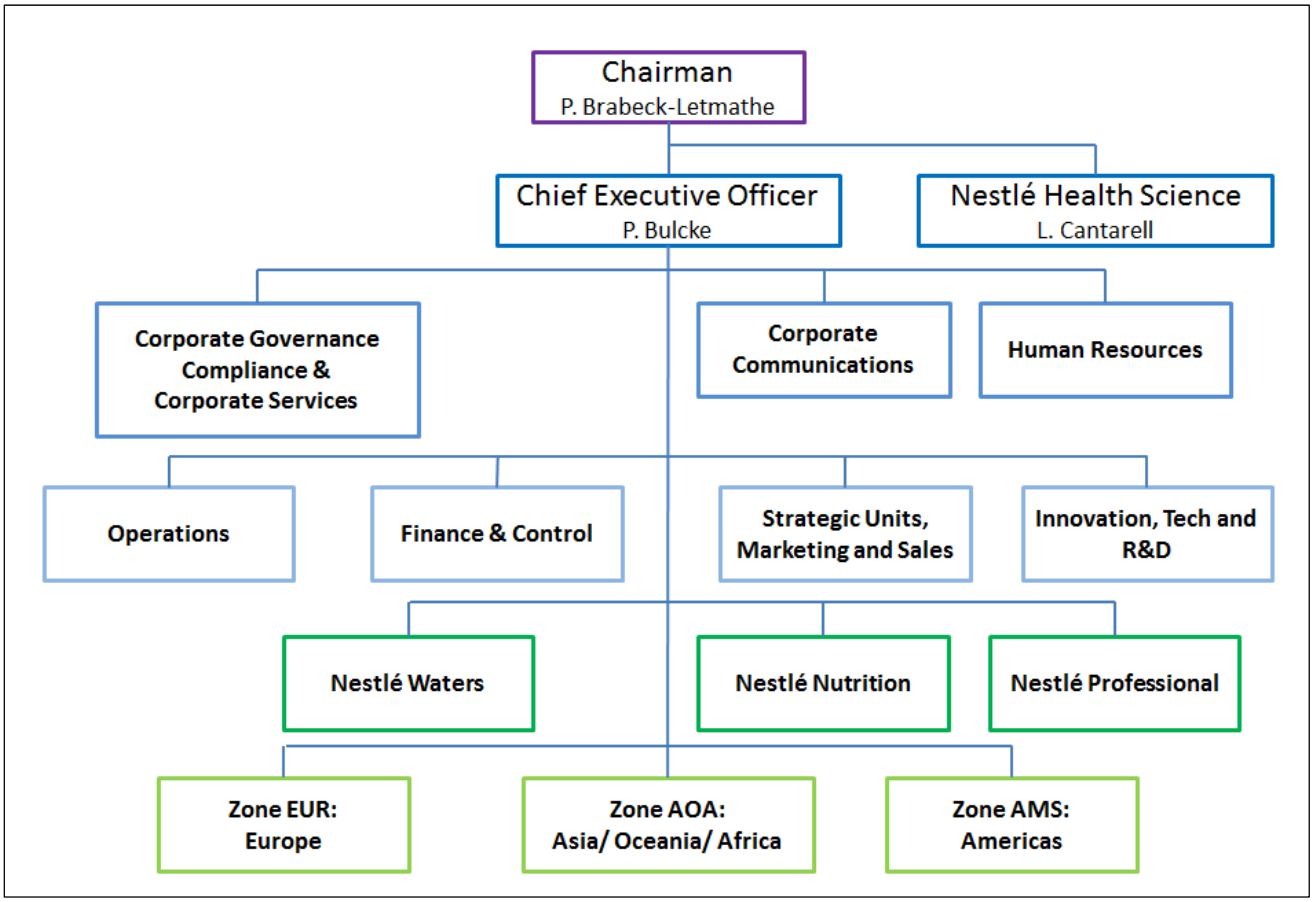
Ownership and management structure [107]

Nestlé has a Board of Directors, led by Chairman Peter Brabeck-Letmathe, who was the former Nestlé CEO. There are 14 members of the Board of Directors.

The day to day management of the Nestlé business is overwatched by the Executive Board members. The 13 designated Board Members manage diverse parts of the global business, which could shown in Figure 2 below.

The Nestlé Group is managed by geographies (Zones Europe, Americas and Asia/Oceania/Africa) for most of the food and beverage business, with the exceptions of Nestlé Waters, Nestlé Nutrition, Nestlé Purina Petcare, Nespresso, Nestlé Professional and Nestlé Health Science which are managed on a global basis – which are presented as the Globally Managed Businesses.

Figure 2. Organisational Departments for Nestlé [108]



Company strategy [109] [110]

Nestlé's current key objectives are "to be recognised as the world leader in Nutrition, Health and Wellness, trusted by all its stakeholders, and to be the reference for financial performance in its industry." In order to achieve these, the company has outlined a number of growth drivers as well as operational pillars.

Four competitive advantages

1. Unmatched product and brand portfolio: Focused and diverse product portfolio, with 75% of sales accounted for by around 30 brands and an understanding of local needs.
2. Unmatched research and development capability: An impetus from R&D that supports growth through consumer-centric innovation and renovation.
3. Unmatched geographic presence: Company presence in many markets, including emerging markets, which created close relationships between the company and the consumers.
4. People, culture, values and attitude: Decentralised structure with devolved responsibilities as well as cohesive strategic directions to encourage entrepreneurial spirit.

Four growth drivers

1. Nutrition, health and wellness: These are the main goals that the company is aiming to achieve through science-based nutritional expertise and all of its activities.
2. Emerging markets and popularly positioned products: Nestlé's operations in emerging markets are both well developed and rich with opportunity.
3. Out-of-home consumption: Nestlé Professional is the largest branded manufacturer in the out-of-home segment, and this segment has two divisions- Branded Beverages and Customised Food Solutions.
4. Premiumisation: Increasing incomes and leisure time are positive trends for this sector.

Four operational pillars

1. Innovation and renovation to ensure products are new or remain relevant to the customers
2. Operational efficiency to ensure the highest quality, the lowest cost and the best customer service
3. Whenever, wherever, however...to have the products always in an arm's reach of the consumers
4. Consumer communication to excite and to learn from the consumers

Research and Development (R&D)

Nestlé's Research and Development Vision [111]

Nestlé values research and development as it is a key competitive advantage for the company. With 29 research, development and technology facilities worldwide, Nestlé has the one of the largest R&D networks of any food company (see Table 6 below for the geographical spread of these research centres). Nestlé's research, development and technology network, together with local market application groups, employs over 5,000 people.

R&D is also critical in ensuring regulatory compliance of all Nestlé products. Nestlé is able to launch new products quickly and efficiently, in countries all over the world, by integrating regulatory affairs in all its R&D activities. Nestlé R&D translates nutrition and food science both from consumer needs into research priorities and from emerging science into consumer benefits, and services.

Nestlé's Areas of Research Interest [112]

Nestlé focuses on innovations in the following fields:

- Energy & Weight Management
- Growth & Development
- Physical and Mental Performance
- Digestive Comfort
- Protection
- Natural
- Skin Health & Beauty
- Healthy Aging
- Healthy Recovery
- Sensory properties of food (taste, texture, etc.)
- product safety and quality
- Sustainability

Innovation

Below are some examples of Nestlé's innovations: [113]

Past

- 1867 Infant Formula- Farine Lactée
- 1935 Aero- Bubbly innovation
- 1904 Milo- Fortified beverage
- 1935 Kit Kat- Wafer technology
- 1938 Nescafé- The first drinkable instant coffee
- 1986 Nespresso

Current

- Meaty soup granules
- Svelty Gastro Protect
- Affordable fortified milks
- Crunch Nougat Rolls: Indulgent breakfast cereals with whole grains, minerals and vitamins
- Protection through probiotics
- Easy opening and side pouring

Future

- Reduction in environmental impact of packaging
- Functional Genomics and gene expression
- Bioavailability of nutrients

Region	Country	No. of Centres	Centre(s)
Europe	France	5	PTC Beauvais, PTC Lisieux, PTC Vittel, R&D Amiens, R&D Tours
	Germany	1	PTC Singen
	Italy	1	R&D Sansepolcro (Casa Buitoni)
	Poland	1	R&D Rzeszow
	Switzerland	4	Nestlé Research Centre, Nestlé Professional Beverage Centre Orbe, PTC Konolfingen, PTC Orbe,
	United Kingdom	2	CPW Innovation Centre Welwyn Garden City, PTC York
Americas	Chile	1	R&D Santigo
	Mexico	1	R&D Queretaro
	United States of America	7	PTC Fremont, PTC Marysville, PTC St. Joseph, PTC St. Louis, R&D Minneapolis, R&D Solon, R&D Bakersfield
Asia & Oceania	Australia	1	CPW R&D Rutherglen
	China	2	R&D Shanghai, R&D Beijing
	Singapore	1	R&D Singapore
Africa & Middle East	Ivory Coast	1	R&D Abidjan
	Israel	1	R&D Sderot

Table 6. Nestlé's Global Research and Development Centres [114]

Nestlé- Commentary Summary

Established in 1905 through the merger of the Anglo-Swiss Condensed Milk Company and the Farine Lactee Henri Nestle Company, Nestlé is now one of the world's largest food and nutrition company. Its annual turnover was around EUD85 billion in 2010, just over a fifth of which was accounted for by dairy sales. [115] Its outstanding performance which developed significantly over the past century clearly illustrates its effective business strategies and unique strengths. However, despite Nestlé's prominent global status, the enterprise is still facing a number of challenges and has undergone a few controversies. The sections below will summarise Nestlé's business strategy, the company's strengths and weaknesses, the effort it has made towards promoting sustainability as well as three disputes that the global giant has experienced in the past three years.

1. Business Strategy

According to the company's published Code of Conduct, Nestlé's strategies run along the tracks of producing quality and diversified range of products, decentralising operations while ensuring uniformity and allowing for flexibility. [116]

First, Nestlé believes that by offering quality products, the company will be able to remain firmly in its leading position in the face of competition. Second, while Nestlé seeks to diversify its portfolio through acquisitions, it makes sure that it is expanding into fields where the company has expertise after careful consideration. Third, due to its international presence, Nestlé adopts a decentralised management structure. A minimum policy standard is reinforced to ensure requisite uniformity. By decentralising its operational responsibility, Nestlé could better adapt to the different needs in different regions, and thus making its practices more flexible.

However, despite Nestlé's claims, some are doubtful in regards to Nestlé's move into the pharmaceutical industry. [117] Mijuk (2010) argues that while food companies have tried to claim that their products are not only delicious but also good for health, regulators are now asking for more scientific support to these claims. Under such circumstance, Mijuk (2010) is doubtful as to whether Nestlé would be able to scientifically prove that its products can help treat diseases such as diabetes or Alzheimer's, with which pharmaceutical companies have struggled to do. In addition, many of the claims that derive from scientific tests may not be entirely trustworthy or mature enough. Also, it is very likely that other food companies will follow Nestlé's steps and begin to sell their products under the health label, which will in turn bring more competition. Therefore if Nestlé would like to maintain its position as a leader, the company will need to prove that it has the capacity to succeed in both the food and pharmaceutical industries.

On the other hand, while steep increases input costs were expected for 2011, Nestlé believes that it could benefit from its global spread and offset these increasing costs through its sales in emerging markets. [118] Consumption rate in emerging markets are expected to grow in spite of escalating food price. Nestlé has a strong presence in emerging markets and its underlying sales growth in these markets was 11.5 percent in 2010. In addition, prices for the popular products including Nescafe and Nespresso could be further raised to balance the rising costs.

2. Strengths and Weaknesses [119]

There are various commonly acknowledged strengths for Nestlé. It could be seen from international comparison reports and the company's profile that is recognized as one of the largest and most powerful food producers worldwide, with factories and operations in 115 countries. [120] It also has a diverse portfolio of products that range from ice creams, chocolate, pet care nutrition, beverages to infant formula. This allows Nestlé to have a powerful brand positioning within the market.

Besides expanding its activities internationally, Nestlé has also established various joint ventures with other prominent global companies like Coca Cola, General Mills in the food industry, L'Oreal in the cosmetics industry and Fonterra in the dairy industry. These ventures have enabled Nestlé to gain further knowledge and resources that could support its practices as well as further extend its international networks.

On the other hand, a number of weaknesses have also been identified for Nestlé. First, in order to transport ingredients and products internationally, the company has to cope with high logistic costs as well as storage issues. Second, due to its international spread and diverse portfolio, the effectiveness of decision making and coordination between country specific sites and the headquarters could decrease. Third, while Nestlé is actively promoting innovation and new products, some inventions or products may not be understandable or suited in different regions or countries.

One example of such mismatch between Nestlé's product and consumer's interest is the failure of *LC1 Go!* in Europe in 2001. *LC1 Go!* is a fermented dairy drink that offers digestive health benefits and Nestlé initially believed that its launch would further strengthen the company's position in Europe. Yet two years later the product was withdrawn from both France and the United Kingdom, which were two of Europe's three largest markets. Heasman & Mellentin (2001) suggest that being the world's largest food company, Nestlé and its Research and Development (R&D) centres definitely have the potential to also succeed as a functional food company. [121] Yet the company's market performance did not reflect such capacity. Heasman & Mellentin (2001) point out that price of the product is not be blame and attribute this failure to the Heasman & Mellentin (2001) brand itself, which is usually associated with ice-cream and desserts rather than health or functional food, as well as the gap between its R&D and its marketing strategy. The disconnection between Nestlé's R&D and marketing team has hindered the ideas from being effectively translated to the market. Therefore, as the commentary suggests, Nestlé's marketing team would need to learn and overcome the new challenges of nutritional marketing before the company could succeed in its functional food division.

3. Sustainability Efforts

In the past decade, Nestlé has actively established a green and charitable public image through engaging in partnerships and projects that promote environmental sustainability and community development. [122] Examples of these involvements include the formation of the World Cocoa

Foundation in 2000, which was a membership based company that promotes sustainable cocoa farming. [123] As a founding member in the International Cocoa Initiative, Nestlé is also dedicated to eliminating unethical labour in cocoa growing. [124] Furthermore, following a number of consecutive years in which cocoa supply has fallen, Nestlé announced in October 2009 that it will invest CHF 110million to its Cocoa Plan, which aims to achieve sustainable cocoa supply in the next decade through replacing the less productive cocoa trees with new and healthier plantlets. [125] Blas (2010) approves Nestlé's initiative and how its executives realise that there is nothing else other than "roll up their sleeves and start work" that could resolve current shortages of cocoa supply.

After a social media backlash it experienced in 2009, Nestlé has further stepped up its investment in sustainability by partnering with The Forest Trust, which is a non-profit group that assists business and enterprises with environmentally sustainable forest harvesting. This partnership aims to reduce the social and environmental impacts of its supply chain, including Nestlé's use of palm oil, which has contributed to deforestation. This issue will be further outlined in the fifth section. [126]

4. Criticism- Greenwashing [127] [128] [129]

Despite the clean green image that Nestlé has been trying to promote, it has faced a wave of criticism that is directed to its advertising campaign in October 2008. Following a full-page advertisement, which claimed Nestlé's bottled water to be a product that brings numerous ecological benefits and "the most environmentally responsible consumer product in the world", a coalition of environmental groups including Friends of the Earth Canada, the Polaris Institute, the Council of Canadians, Wellington Water Watchers and Ecojustice filed a complaint against Nestlé to the Canadian Code of Advertising Standards.

Later in the month, Nestlé launched a press release and video website in the attempt to convey to the public that bottled water is an efficient choice for the consumers and numerous other virtues of bottled water. It insists that plastic wastes only represent less than one percent of all solid waste, bottled water has low associated costs as well as a lighter environmental impact.

Yet many consumers did not buy into Nestlé's claims. In her opinion piece, Arena (2009) listed research outcome as counterarguments to controvert Nestlé's message. She reports that according to Food and Water Watch, 47 million gallons of oil are required to produce the plastic used for bottled water, which in turn generates 1.5 million tons of plastic waste per year once these bottled are disposed. Moreover, over 80 percent of plastic bottles are not recycled and instead end up in landfills. In addition, in terms of costs, as much as 40 percent profit is added on top of the actual input cost of the bottled water. On top of this, Bell (2010) also reports concerns in regards to Nestlé tapping springs in pristine rural areas and selling products to underdeveloped communities after a marked-up price. [130]

Arena (2009) believes that Nestlé has a public relations problem which is much more serious than signs and catchphrases against their products. She suggests that Nestle's public relations problem is its sterile, detached response and the assumption that consumers will accept its "one-sided"

communication. By doing so, Nestlé is defying cardinal rules of social media, engagement of stakeholder and transparency, and thus it is difficult for stakeholders to interact with the company, express their own opinions or leave a comment that is against the company's claims. Subsequently, this advertising campaign of Nestlé has been referred to as greenwashing.

5. Palm Oil Controversy and Subsequent Social Media Dispute

A campaign launched by Greenpeace in March 2010 brought public attention to rapid deforestation in Borneo and other regions due to hardwood harvesting and oil palm plantations. This has caused massive releases of carbon dioxide into the atmosphere and destroyed the habitat for animals such as the orang-utan. As Nestlé was sourcing palm oil from the companies that are causing these deforestation to manufacture products such as Kit Kat, the campaign also targeted Nestlé's role in the negative environmental impact.[131]

This campaign has led to a large number of negative comments being left on Facebook and consumers were critical towards Nestlé's business practices. A negative video commercial as well as an altered version of KitKat logo (which reads "Killer" rather than "KitKat") posted by Greenpeace were quickly shared across the web by thousands of protesters. In response, Nestlé has quickly set up a Q&A page on Facebook that covers the palm oil issue. [132] Also, it has attempted to engage with the issue by asking Google's YouTube video site to remove the video commercial and informing Facebook users that their comments that included the altered logo would be removed, in reference to copyright infringement. Yet these actions further incited social media users and were met by even more furious criticism while the video continued to spread online. [133]

Two months after Greenpeace's campaign, Nestlé invited The Forest Trust, a not-for-profit group, to audit its supply chain activities and promised to terminate contracts with any company that are producing palm oil through deforestation. [134] The Forest Trust will monitor Nestlé's activities by visiting its plantations and checking that Nestlé's suppliers meet a set of standards outlined by the two organisations. On top of this, Nestlé also promised that it will be sourcing 100% sustainable palm oil by 2015. [135]

In a commentary published by Bowen Craggs & Co. Ltd (2010) it is suggested that in response to this incident, Nestlé should have been more decisive in regards to the strategy that it is going to use rather than discussing with a social media agency. Also, the authors of this commentary believe that Nestlé should have abandoned its Facebook page as soon as it realises that the company is no longer in control of it, as this will leave its critics nothing to oppose. [136]

6. IUF Nespressure Campaign [137] [138] [139]

In June 2009, The IUF and the Swiss union UNIA organised a joint press conference in Bern to launch the "Stop Nespressure" campaign in Switzerland and call on Nestlé to Stop the Nespressure and respect fundamental trade union rights. IUF pointed out that Nestlé had seriously violated the rights of its employees through various corporate actions, including instant closure of factories, mass redundancies, illegal dismissals, restricting trade union rights, and wage discrimination. Since

2007, the union at Nestlé's Nescafé factory in Panjang, Indonesia had been struggling to include wages in collective bargaining as well as the wage scale in the Collective Bargaining Agreement. Nestlé management refuses, saying it is not company policy to negotiate wages and that wage scales are "confidential".

The campaign came to a conclusion in March 2011, with a settlement reached between Nestlé and IUF, bringing recognition and bargaining rights to the IUF-affiliated SBNIP at the Nescafé factory in Panjang, Indonesia. The agreement, which was initialed by the IUF and Nestlé corporate management on March 28, 2011 and signed by the union and local Nestlé management on March 31, 2011, sets the stage for the SBNIP to bargain the Panjang workers' collective agreement including the wage bargaining which Nestlé management had been steadfastly rejecting for years.

7. Brief Conclusion

It is clear that while Nestlé is at a leading position within the industry, it is still facing various challenges. Similar to all large corporations, ensuring effective internal coordination and translation of messages across different divisions and geographical regions require much effort, and this is illustrated by the failure of LC1 in Europe. On the other hand, a common issue that emerged from the commentaries is the validity and reliability of Nestlé's advertisements. Should it be the sustainability of the use of plastic bottles or the extent to which Nestlé's food products can benefit consumers' health, the company needs to make sure that the claims made for its products and practices are well-supported if it wishes to maintain its reputation and popularity. As consumers nowadays are increasingly concerned with global issues, including both environmental sustainability and human rights, Nestlé will need to carefully manage its activities to ensure that it could maintain the green and socially responsible image that it has been trying to establish.

The Lactalis Group - France

Abstract

Lactalis is a secretive, privately-owned (the Besnier family) French dairy company, which has expanded aggressively since the 1970s. Its secrec y means that it is particularly difficult to study on the basis of available public sources. In the 1970s and 1980s, it expanded by a series of mergers within France particularly in the cheese sector. By the late 1980s, Besnier had built the family business into a dairy empire of some 36 plants, processing more than two billion litres of milk per year into more than 400 products under the President, Lepetit, Claudel, Lactel, and other branded and private label names. From the 1990s, it moved to increase its scope, first in Western Europe (Spain, Belgium, Luxembourg, for example), then into the US. Expansion in France continued at the same time. In the early 1990s, expansion took place in the US and into Eastern Europe, including Poland, the Ukraine and Russia. The 2000s saw Lactalis takeover Edigio Galbani, a major Italian cheese producer, whilst also expanding further in Eastern Europe, the Balkans, the UK and the US. In 2011, Lactalis gained cotrol of Italy's Parmalat, after a fierce contest, thus gaining Parmalat's presence in markets in which Lactalis was weak – South America, Canada, South Africa, for example. It claims today (post Parmalat) to have 52,000 employees. It operates in over 150 countries with 126 operating plants (prior to the Parmalat takeover), and is the biggest dairy operation in France by a considerable margin. It is the largest cheese producer in the world.

Strategically, Lactalsi maintains a strong commitment to private ownership and expansion. It is an aggressive company, using sophisticated R&D and innovation to develop and position brands. It sees matures markets as an opportunity to fragment markets and insert new, high-value products. It also sees opportunities in less developed markets, in which Lactalis seeks to control raw material and develop the sophistication of markets. It uses partnerships, as with its fresh products arrangement with Nestle in Europe.

Lactalis sees pressures emerging from large competitors (which explains its multiple strategy or reach, depth and quality), form both deregulation (as in the European milk market), and new regulation (as in food standards), from major, price-conscious retailers, from consumers (in terms of quality and price), and from an over-dependence on cheese

What little information is available on its HR strategies suggests that it favours unitarist practices.

General information

Introduction.

The Lactalis Group is a particularly difficult company to understand. As we shall see, it remains a privately-owned company, with a strong taste for secrecy about its activities. Even professional company analysts have difficulty in making accurate assessments of company performance and strategy as a result of this secrecy. Much of what follows is taken form official company sources, such as they are, and must be read as such. However, we shall see that the veil of secrecy was removed somewhat by European regulations pertaining to the recent Parmalat take-over.

The Company Story (as told by the Company)

Lactalis, once known as Besnier S.A., is France's largest dairy products producer and the second largest producer of cheese in the world. Its products are sold under the company's President label, and as brands such as Bridel, Lactel, Sorrento, Rondele, and Locatelli. The company owns approximately two-thirds of the Société des Caves et des Producteurs Reunis de Roquefort, the world's leading producer of Roquefort cheese. Lactalis produces a wide variety of cheese, butter, and milk products. Its products reach 143 countries; the company operates 65 plants in France and 13 in foreign countries. A private company, Groupe Lactalis is owned 100 percent by the Besnier family. Emmanuel Besnier, grandson of the company's founder, continues to lead the family business. Besnier was founded as a single plant in Laval, in the Loire Valley region of France, by Andre Besnier, a former cooper by trade. In 1955, Andre's son, Michel, who had started with the family business as a delivery boy, took over the dairy company's operations. Besnier remained a small, single-plant operation until well into the 1960s. It then expanded its operations to multiple plants and diversifying the company's dairy products. As a first step, in 1968, Besnier created its own brand, the President label. The following year, the company opened a second plant, in Mayenne, adding to its cheese production capacity. In 1969, Besnier made the first of a long string of acquisitions, buying the cheese maker Bourdon, based in the Normandy region. Throughout the 1970s and 1980s, Besnier acquired a large array of plants in France, in cheese production primarily. By the 1980s, foreign demand was building for Camembert and other French soft cheeses. In response, Besnier established a small plant in the United States, in Belmont, Wisconsin in 1981, which focused on supplying soft cheeses to the U.S. market. The company also began industrial production in Villalba, Spain in 1983.

By 1987, the Besnier family business was worth some FRF 8.8 billion. Profits also were soaring, jumping from FRF 60 million in 1986 to FRF 194 million in 1987. Exports had grown to represent more than 25 percent of the company's sales, with approximately 60 percent of export sales going to neighboring European countries. Besnier also boosted its U.S. presence in 1987 with the opening of a larger plant in Turlock, California, which enabled the company to add fresh milk products, including cream and yogurt, to the U.S. market.

By the late 1980s, Besnier had built the family business into a dairy empire of some 36 plants, processing more than two billion liters of milk per year into more than 400 products under the President, Lepetit, Claudel, Lactel, and other branded and private label names. Sales in 1988 had risen to FRF 9.7 billion, and profits had nearly doubled to FRF 378 million.

In the later 1980s and 1990s, Besnier moved to consolidate its position in France and Europe in order to compete with the European dairy giants. New acquisitions were made in France and Luxembourg, new partnerships were formed in Spain and Belgium, and the West Coast US operation was expanded with the acquisition of the small fresh dairy operation, Atlantis. Besnier then purchased, in 1990, the Bridel dairy company, which placed Besnier to the top of the French dairy industry, giving the company total annual revenues of more than FRF 17 billion. The combined operations gave Besnier a large share of the French dairy market, with 16 percent of cheese products, 24 percent of milk, and 24 percent of the country's butter production. Further purchases in France in the early 1990s consolidated that position.

By October 1992, Besnier paid Nestlé FRF 863 million for 57 percent of Caves de Roquefort, managing to raise the necessary capital by sales of assets and thus avoiding the need to become a public enterprise. Further take-overs followed in France, and Besnier also consolidated a large holding in Fromageries Bel, the maker of the worldwide top-selling processed cheese product La Vache Qui Rit (Laughing Cow) with FRF 6.8 billion in 1991 sales. Bel became wholly owned in 2002.

With FRF 24 billion in annual sales in 1993, Besnier was not only France's largest dairy products group, it also had become one of the largest in Europe, behind industry leader Nestlé. As the French dairy industry moved closer to consolidation, Besnier began focusing on new product development, introducing, among others, its own emmental cheese. In 1995, the company expanded its U.S. operation, building a 60,000-square-foot facility in Belmont, Wisconsin. The following year, the company made its first move to expand into the reviving Eastern European market. In April 1996, Besnier created a joint venture in the Ukraine with Nikolaiev. Four months later, Besnier entered Poland with the 83 percent purchase of that country's Polser dairy. In 1997, the company set up a Russian subsidiary, Besnier Vostok.

Besnier continued its growth through acquisition strategy into the late 1990s. During 1998, the company added Italy-based Locatelli to its arsenal. Besnier bolstered its U.S. holdings in 1999 with the purchases of Concord Marketing and Simplot Dairy Group Inc. By this time, the United States was the company's second largest market behind France. The addition of Concord and Simplot nearly doubled Besnier's U.S. sales.

In 1999, the name Lactalis was adopted.

Overseas expansion continued. In 2003, it acquired Kraft Foods Inc.'s Invernizzi cheese operations in Italy to its holdings. In 2004, Groupe Lactalis purchased a total of six companies in the Ukraine, Moldavia, Kazakhstan, Spain, Italy, the United Kingdom, the United States, and Poland. Included in these deals was the McLelland Group, the third largest cheese company based in the United Kingdom, and U.S.-based Rondele gourmet cheese. Italy's Edigio Galbani S.p.A. was purchased in early 2006.Also in 2004, Lactalis began importing and distributing its President and Bridel brands

throughout India, including Delhi, Mumbai, Chennai, Bangalore, Kolkata, Goa, and Pondicherry. It also entered the Japanese consumer market in 2005 by selling its President brand in department stores and upscale supermarkets. In 2006 the company announced a partnership with Nestlé to manufacture and market a line of yogurts and chilled desserts in Europe.

The period between 2006 and today has been marked by further expansion, including further expansion in Eastern Europe (Russia, Croatia, Czech Republic, Poland), in Western Europe(the UK, Spain, France) in the US and in Australia. The 2011 take-over of Italy's Parmalat makes it a dominant global player in the dairy industry. In 2011, it claims global employment of 52,000 staff and 198 production sites (presumably after the merger with Parmalat in 2011). [140]

Brands and Product Mix

Lactalis operated, until the merger with Parmalat, with two established global brands (President and Galbani) which have a presence in over 150 countries, Lactalis also operates some multi country, regional brands (for example, Lactel, Bridel, Dukat, Celia, La Laitiere, Sveltesse), and many national brands (such as Societe, Seriously Strong, Forlasa, Lou Perac, Invernizzi). Lactalis has adopted a sophisticated mixed branding approach in an equally sophisticated global marketing strategy.

Figure 1 shows the distribution of outputs across Lactalis in 2010, highlighting the high levels of dependence upon cheese in its product mix.

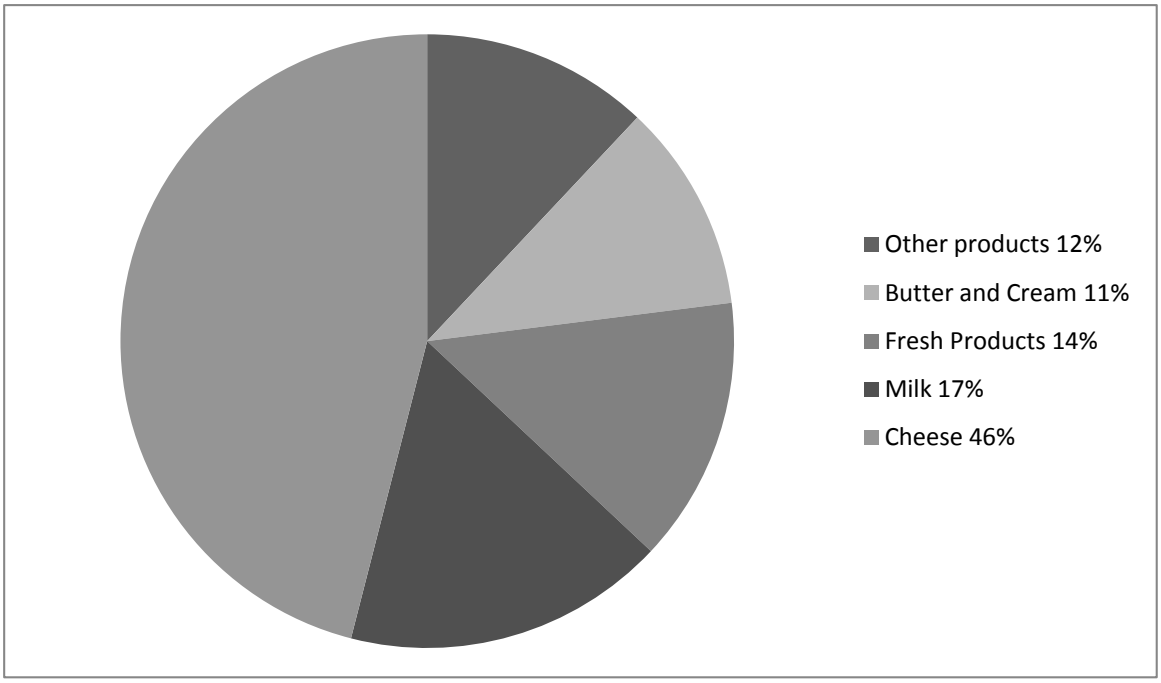


Figure 1. Overview of Lactalis Product Categories

Country focus and Partnerships

Regional Operations

In regional terms, Lactalis has the following coverage: [141]

Europe

- Lactalis France
- Lactalis McCelland (UK) – a subsidiary, two production units, HQ in London
- Lactalis Iberia – one subsidiary based in Spain, plus trading offices in Spain and Portugal, five production sites in Spain
- Lactalis Northern Europe – a subsidiary and a trading office, plus two production sites, all in Belgium
- Lactalis Deutschland – a subsidiary and two trading offices in Germany, one trading office in Austria but no identified production sites
- Lactalis Italia – one subsidiary, one trading office and six production sites.
- Lactalis Central and Eastern Europe – subsidiaries in Poland, Croatia and the Czech Republic; trading offices in Bosnia, Croatia, Hungary, and Slovenia, production sites in the Czech republic, Poland and Croatia.

Note that, whilst absent from the Lactalis webpage, operations are also reported in Romania, Macedonia, and Serbia in the Lactalis bid for Parmalat. [142]

Lactalis CEI

- Lactalis Russia –one subsidiary, one production site
  Lactalis Ukraine – one subsidiary, two production sites
- Lactalis Moldova – one subsidiary and two production sites
- Lactalis Kazakhstan – one subsidiary, three production sites

Lactalis Middle East

- Northern Africa – one production unit in Algeria
- Egypt – a subsidiary and three production sites
- Saudi Arabia – one subsidiary, one production site

Note that distribution is also evident in the Gulf States and in the wider Eastern Mediterranean area, but the data are obscure. There is a Lactalis office in Dubai, for example, reported in sources outside Lactalis.

Lactalis USA

- Northern America - one subsidiary, one trading office, and five production sites
- Southern America – three subsidiaries

Lactalis Export

- Japan – one trading office
- Guadeloupe – one trading office

Note that there is a Lactalis office reported in Shanghai under the rubric of Lactalis China, though no details of its operations are readily available.

Activities and Operations

Lactalis presents its activities in terms of ten streams or blocks of activity:

- Cheese Europe
- Milk Europe
- Nutrition
- Butter & Cream Europe
- Chilled Dairy Europe
- Food Service
- Ingredients
- CIS
- USA
- Rest of World

Cheese Europe has twelve operations (Table 1.)
[ii]:

France	L. Fromages	L. AOC	Pochat
Spain	Grupo L. Iberia	L. Forlasa	
Portugal	L.Portugal		
UK	L. McLelland	Lubborn Cheese	
Sweden	L. Sverige		
Denmark	Delimo		
Italy	Gruppo L. Italia	BIG	Egidio Galbani
Poland	L. Polska		
Germany	L. Deutschland		
Switzerland	L. Suisse	Baer AG	
Belgium	L Europe Dunord		
Czech Republic	L. CZ		

Table 1. Cheese Europe operations

Milk Europe is structured as follows (Table 2):

France	Lactel		
Spain	Puleva Foods	Lactimilk	Central Lechera Vallisoletana
Belgium	L Europe Dunord		
Czech Republic	L. CZ		

Table 2. Milk Europe operations

[ii] We use "L." in the charts to avoid the need to write "Lactalis" on each occasion that it is needed.

See Tables 3, 4 and 5 for structures of Lactalis Nutrition, Chilled Dairy Europe and Ingredients operations:

L. Nutrition Sante
Milumel
L.N.S. Italia
Eurl Celia Nutrition Sante
L, Nutrition Infantil

Table 3. Nutrition operations

L. Nestle Produits Frais (LNPF)
L.N.P.L.R. Iberia
L.N.P.F Italia
L.N.P.F Belgium
L.N.P.F. Suisse
Longa Vida Portugal
L.N.C.D. UK
Rachel's Dairy Ltd (UK)

Table 4. Chilled Dairy Europe

L. Ingredients
Lacto Serum France
SAS Vergers de Chateaubourg
Les Pommiaux
Tendriade Collet
Molkereilaiterie Walhorn
L. Ingredients Iberia
L. Ingredients Italia
Lacto Siera Italia
L. Parma

Table 5. Lactalis Ingredients operations

Table 6 shows Lactalis' activities in the CIS:

Russia	L. Vostok
Ukraine	L. Ukraine
Kazakhstan	Foodmaster-Trade Company
Moldavia	L. Alba SRL

Table 6. Lactalis activities in the CIS

Finally, Table 7 shows Lactalis' "Rest of the World" category. Note that this is run out of a separate operation – Lactalis International: [143]

L. International			
Croatia	Dukat Dairy Industry		
Serbia	Somboled AD		
Macedonia	Ideal SPKA		
Slovenia	Dukat S LTD		
Kosovo	L. s.h.p.k. Prishtina		
Bosnia-Herzegovina	Dukat Mljekara Sarajevo		
Egypt	Al Nour Co	Best Cheese Co	Best of France
Algeria	Soummam L. Algerie	Laiterie Benitam OU	Celia Algerie
Saudi Arabia	UFIC		
Australia	Lemnos Foods		
Romania	Dorna Lactate SRI	Dorna SA	

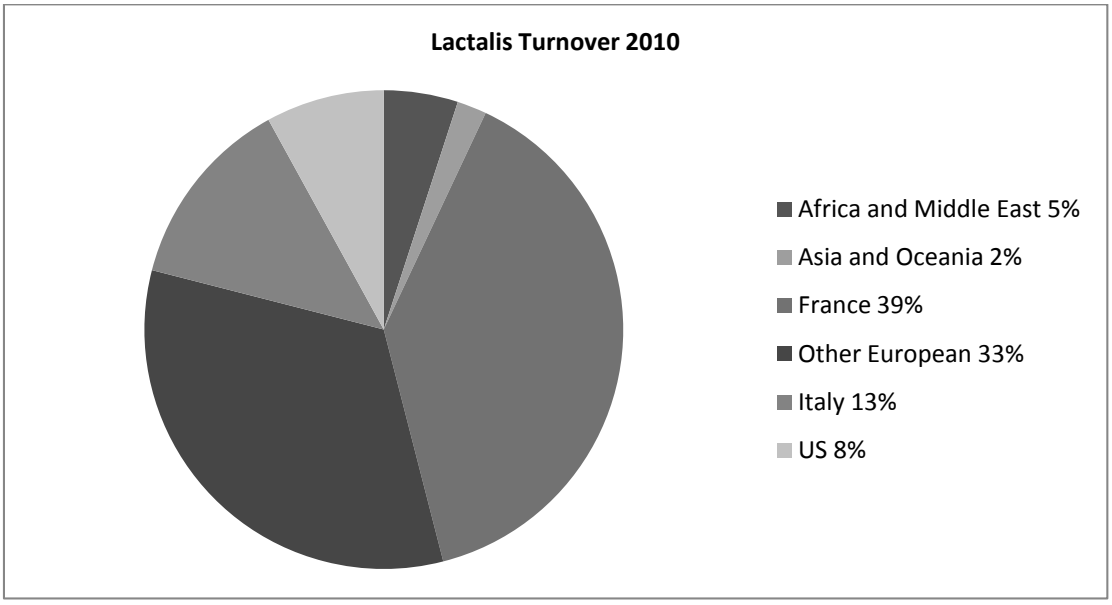
Table 7. Lactalis International

Note that Butter and Cream Europe fall under one operation (L. Beurre et Crème). Food Service has two operations (Lactalis C.H.F. and L. Restauracion (Spain)). The USA operation has three elements – L. Deli Inc, L. USA Inc, and Mozzarella Fresca.

Turnover by Region

Lactalis' turnover by region for 2010 is shown in Figure 2. The strengths in France and in Europe more generally are clear, as is a relative weakness in other areas. That said, the growth strategy adopted by Lactalis increased its turnover from €5.6 billion in 2005 to €9.4 billion in 2010, an annual rate of increase of around 11%.

Figure 2. Lactalis Turnover 2010

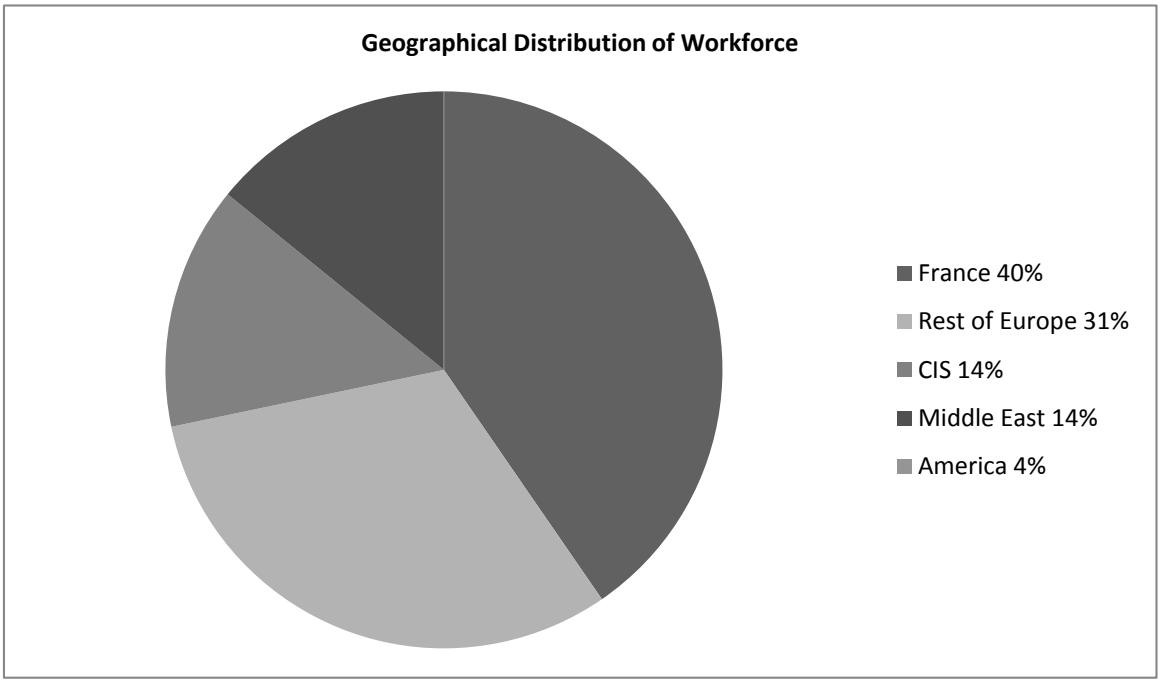


Employment

Lactalis Workforce

The distribution of Lactalis' work force is shown in Figure 3. Note that these are 2010 figures that precede the merger with Parmalat, and are based on a 2010 total workforce of 38,200. It is clear that Lactalis' workforce is primarily European and often within the EU and its regulatory framework[iii].

Figure 3. Geographical Distribution of Lactalis Workforce



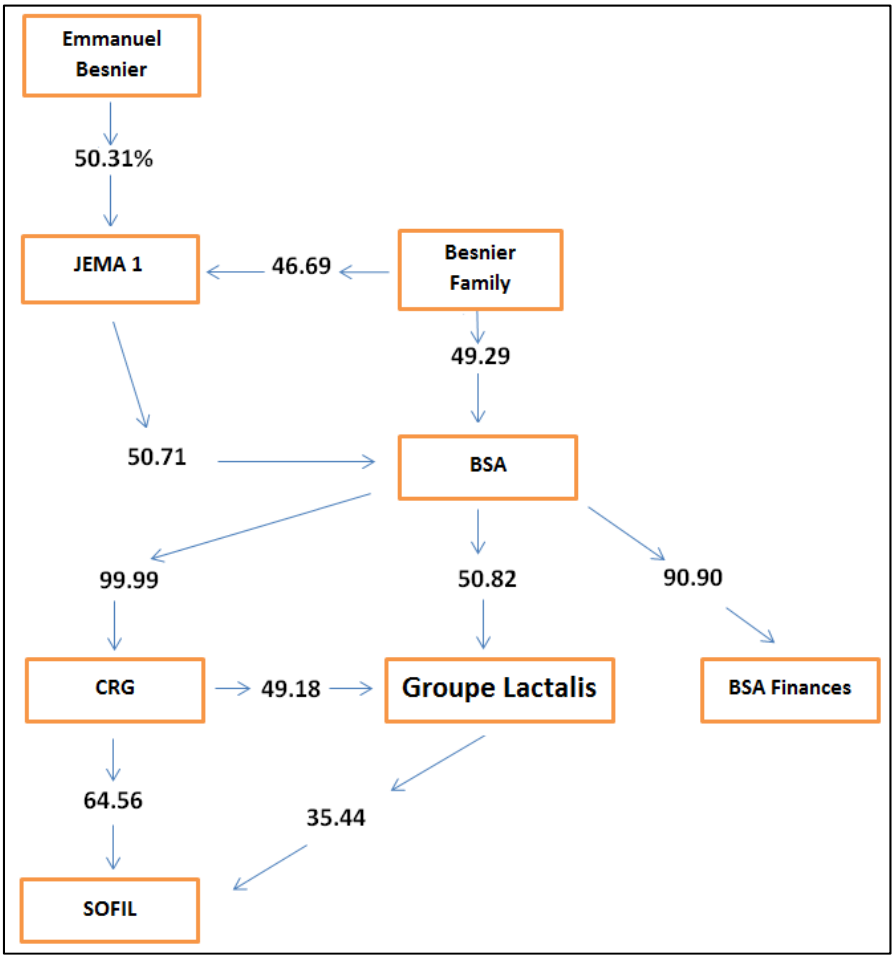
[iii] Note that there is very little indeed on public record about the configuration of the Lactalis workforce.

Ownership and management structure

The operating structure of Lactalis is surprisingly difficult to determine from extant sources. It seems that the secrecy of the firm includes its operating procedures. However, due to the demands of European law, Lactalis were required to lay out for Italian authorities their company structure in relation to their successful, but contested, bid for Parmalat in early 2011. The prospectus for the bid gives an insight into both the structure and the financial control of Lactalis. [144] Note that this structure might be reconfigured for different purposes, but the salient point is the family control of the organisation

The bid for Parmalat was made by Sofil SAS (Societe pour le Financement de l'industrie Laitiere SAS). Control of SOFIL was deemed to be in the hands of Emmanuel Besnier. SOFIL capital amounted to some €329,600,000, of which 65% was held by Claudel Roustang Galac SA (CRG), and 35% by Groupe Lactalis. Both CRG and Groupe Lactalis are controlled by a third legal entity, BSA, itself controlled by Emmanuel Besnier and his wider family. Thus, the framework for the bid, and therefore, the structure of control around Lactalis takes the following form (See Figure 4). Thus, Lactalis is owned wholly by BSA, in part directly, in part via CRG. BSA and, indirectly, CRG, are owned by interlocking Besnier family holdings. The Parmalat prospectus also provides a detailed structure of Lactalis' operational structure, again something that is obscured in public records.

Figure 4. Structure of control- Lactalis



Company Strategy

Lactalis and CSR

Lactalis' values are summarised on its webpage in terms of expertise in dairy products, a transparency policy in relation to strategic objectives (which is a little difficult to accept), a focus on responsibility and rewards (emphasising clear objectives and concrete decisions). However, the first value addresses staff who" will be respected and their skills valued".

There is a strong emphasis on the family nature of the firm and on internal promotions, supported by the opportunities offered by a global operation. The vocabulary of the HR sections that are publicly available is individualist and unitarist.

Lactalis also places stress on quality production, especially of the raw product, milk, for which it has introduced since 1999 a "Cap sur l'Avenir" (Looking to the Future) programme. This focuses on issues like better breeding practices, external certification of producers, and effective monitoring of milk quality. It also has a webpage on sustainable development. [145]

Lactalis Strategy

Lactalis is perhaps unique in its desire to have a presence in all dairy produce sectors.

- It is the world's biggest cheese producer (46% of its turnover) and is dominant in many cheese markets in Europe.
- It has entered the "ultra fresh" market, especially in Europe, and in a joint venture with Nestle (Lactalis Nestle Produits Frais – LNPF - 60% owned by Lactalis) producing brands such as Sveltesse, Yoko and Nesquik. Lactalis is seeking to develop this are in the Balkans, Eastern Europe and in the Middle East.
- Mill and nutritional are other areas of focus for Lactalis. Its 2010 acquisition of Puleva gives it a dominant position in milk for the consumer in France and Spain. It is also strong in Belgium, Some Eastern European countries (Czech Republic, Kazakhstan, Ukraine), in Algeria and Egypt, and Croatia and Serbia.
- Note that where Lactalis is in a strong position in a mature market (for example, consumer milk in France), it seeks to fragment the market by means of innovation and new products, thus seeking to add value by differentiation up the value chain.
- Butter and cream provides commercial strengths, especially in France
- Diversification into other products (for example, processed meat goods, veal production, fruit-based products) has followed success in the dairy sector.

Lactalis has a clear regional expansion strategy:

- In Western Europe, the 2006 acquisition of Galbani (Italy's premier cheese producer) gave Lactalis a clear global power in cheese production and export. The joint venture with Nestle (LNPF -see above) is another example of Western Europe-orientated strategic approach.

The acquisition of Forlasa and Puleva in 2010 expands Lactalis' presence in Spain. This is to be seen in the context of the dominant position already gained in France.

- In East and Central Europe, acquisitions include Dukat (Croatia) and Sirela (Serbia), both in 2006; Kunin in the Czech Republic in 2007; LaDorna in Romania in 2008. The intent is to build a strong position in these areas, and Lactalis is now, for example, the fourth biggest player in the dairy sector in the Balkans.
- In the Middle East and North Africa, the 2005 acquisition of Ah Nour and ACFFI in Egypt, and of UFIC in Saudi Arabia strengthens Lactalis' position
- In the Americas, Lactalis is the leader in Italian cheese distribution following its acquisitions of Sorrento in 1992 and Mozzarella Fresca Inc in 2007
- 2010 saw Lactalis make its first inroads into Australia, with its purchase of cheese distribution operation Lemnos.
- The successful take-over of Parmalat in 2011 is seen to fill some key gaps in Lactalis' global coverage. Parmalat has a presence in Canada (Parmalat Canada), Australia (Parmalat Australia), South Africa (Parmalat South Africa) and South America Industria Lactea Venezolana, Procesadora de Leche – Colombia, Citrus International Corporation - Cuba, Parmalat de Ecuador)that greatly complements Lactalis' current scope of activity.

In general, Lactalis' strategy over decades has been aggressive. Initial aggressive regional and national expansion began in 1970s and 1980s, followed by equally aggressive international expansion in 1990s, first in Europe, then in the US, North Africa and the Middle East. The hard-fought battle to take over Parmalat, which was opposed by the Parmalat board and by the Italian government, and was taken through to the EU for final confirmation, illustrates the drive of the Besnier family and their close advisers.

There is no evidence at any stage of a serious desire on the part of Lactalis to go public. The family-owned structure has continued remarkably successfully through three generations of family leadership. The usual stresses in family firms – management succession, availability of capital, for example – appear to have been overcome in most circumstances (though, again, the public record is poor on such matters).

Other key elements of the Lactalis strategy include:

- Continue the move away from volume considerations towards improved quality and its associated value-add
- Improved quality means a renewed focus on R&D, innovation, new brand development and the creation of more sophisticated demand in which new, higher price products can prosper
- The industry will be marked by ever-larger companies in the centre, amongst which Lactalis seeks to be one of the biggest, supported by the entry of middle-sized, niche companies with very high quality production (which become targets for take-overs or partnerships). Such companies will arise in both developed and developing countries

- Lactalis expect the sector to be under fairly constant restructuring and reconfiguration, in part because of market developments, in part because of new sources of milk. Lactalis openly asks the question “where will our processing plants be in the future?”
- It follows that Lactalis understands the global dairy value chain and is seeking to consolidate for itself a primary role from milk producer to sophisticated, high-value add final products
- Lactalis also recognises pressures:
    - From competitors which are equally well-grounded in global value chains
    - Caused by both reach and stretch. The Parmalat acquisition is an example of responding to “reach” challenges – into, for example, South America; “stretch” problems arise from over-extension of the company as it strives for both quality and market improvements and reach
    - As an effect of declining protection and regulation (as in Europe) but also increasing regulation in terms of food standards
    - From powerful retailers which are particularly price conscious
    - From consumers, in terms of both quality and price (especially where products are seen as everyday essentials
    - From an over-reliance on cheese: Lactalis was founded on cheese. Cheese is still the major part of Lactalis operations, and dependence thereon worries people inside the company and beyond.

Groupe Danone- France

Abstract

Employing a total of 80,976 employees worldwide as of 2009, Groupe Danone is a French food-products multinational corporation based in the 9th arrondissement of Paris and currently has 58 subsidiaries around the world. Today, in volume, Danone is at the leading position in all of its product categories, which include fresh dairy products, waters, baby nutrition and medical nutrition. In the United States, the Danone brand is marketed as Dannon, a subsidiary of Groupe Danone. As of 2009, Danone's division of fresh dairy products has a global market share of 27% and accounts for about 60% of the group's sales. Europe remains a driving force for Danone's fresh dairy products, with France, Spain, Germany, Italy, the Benelux countries, the United Kingdom, Poland and Russia together representing more half the division's 2009 turnover. In Eastern European countries, the Americas and Saudi Arabia, the group is also the leading producer of fresh dairy products, while a strong presence is yet to be established for its dairy products in the Asia-Pacific region.

Danone is over watched by the Board of Directors and its operations are managed by various committees and departments. Research is at the core of the group's strategy and Danone is now focusing its efforts on strengthening the benefits associated with its brands as well as identifying new benefits on which future innovations will be developed. Since 1991, Danone has been funding the Danone Institute, a global network of independent non-profit organizations whose mission is to improve understanding of the links between food, nutrition and health. In response to the market downturn triggered by the economic crisis, Danone has adopted a new strategy at the beginning of 2009. The new strategy aims to boost market share by focusing on three main priorities including reweighting product portfolios to ensure that prices in each country are appropriate, increasing emphasis on promotion and point-of-sale events, as well as initiating a shift in consumer advertising to highlight product quality. In terms of its Fresh Dairy Products division, Danone's current aim is to maintain a steady growth through establishing itself in emerging markets, staying closer and more attuned to its markets, and focusing on the economic dimensions of product affordability and value-adding. A review of commentaries and studies on Danone shows that Danone is actively engaging in activities and pursuing partnerships that could further enhance the effectiveness, performance and sustainability of its operations. Although the group has experienced challenges such as the initial failure to its entrance into the Chinese market, Danone was able to effectively modify its strategies to better address the situation. Furthermore, through working with other organisations including IBM and the IUF, Danone has proven its dedication to enhance the relationship and communication with and between its stakeholders, including business partners, customers, distributors, and employees.

General information

Groupe Danone is a French food-products multinational corporation based in the 9th arrondissement of Paris. Today, in volume, Danone is the world number one in fresh dairy products, number two in bottled waters, number two in baby nutrition and the European leader in medical nutrition. In the United States, the Danone brand is marketed as Dannon, a subsidiary of Groupe Danone. [146] Groupe Danone is ranked eighth by milk intake and second by turnover among dairy companies worldwide in 2010. [147] [148] The chronology below summarises the history of Groupe Danone: [149]

1919: Isaac Carasso in Barcelona (Spain) founded Danone, as a small factory producing yoghurt.
1929: The first French factory was built.
1966: Boussois-Souchon-Neuvesel (BSN), another branch of today's Groupe Danone, was formed.
1967: Danone merged with Gervais, the leading fresh cheese producer in France and became Gervais Danone.
1973: BSN merged with Gervais Danone to become BSN-Gervais Danone and began to expand internationally.
1979: The company abandoned glassmaking by disposing of Verreries Boussois. A number of acquisitions then took place and BSN-Gervais Danone started to operate in sectors that range from beer, containers, confectionery, dairy products, mineral water, chilled products to biscuits.
1986: European biscuit manufacturer Général Biscuit was acquired
1989: Gervais Danone bought out the European biscuit operations of Nabisco.
1994: The company changed its name to Groupe Danone, adopting the name of the group's best-known international brand
2000: Danone sold most of its European beer activities
2003: Danone sold all of its glass-containers business.
2004: The company's British (Jacob's) and Irish biscuit operations were sold to United Biscuits
2007: Danone sold its biscuits division, including the LU and Prince brands, to Kraft. On the other hand, a €12.3 billion cash offer by Danone for the Dutch baby food and clinical nutrition company Numico created the world's second largest manufacturer of baby food.

Below are the key data of Groupe Danone:[150]

Annual Sales (2009)	EUR 14.98 billion
Dairy Turnover (2009) [151]	EUR 10.60 billion
Net profit	EUR 1.41 billion
No. of Production Sites (Worldwide)[152]	159
No. of Employees	80,976

Brands and Product Mix (Fresh Dairy Products)

Danone operates in four main sectors, including Fresh Dairy Products, Waters, Baby Nutrition and Medical Nutrition (see Figure 1 for Danone's sales by product line in 2009). Danone is the world's leading producer in volume of Fresh Dairy Products, selling a total of 5.1 million tons in 2009. The division of Fresh Dairy Products has a global market share of some 27%, accounts for about 60% of the group's sales and posted growth of 4.6% in volumes in 2009. In 2009, the Fresh Dairy Products division posted sales turnover amounting to EUR 8.6 billion.

The four flagship lines alone were responsible for 54% of the Fresh Dairy Products division's turnover in 2009:

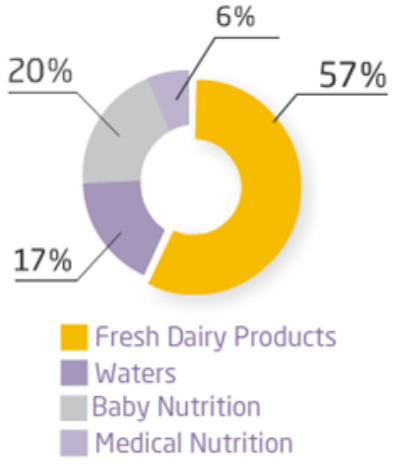
- **Activia-** Fermented dairy product (EUR 2.6 billion turnover in 2009)
  Products include: Plain and flavoured semi-solid yoghurt; fat-free yoghurt; yoghurt with added-cereal; bottled yoghurt drink
- **Actimel-** Probiotic dairy product (EUR 1.2 billion sales in 2009)
  Products include: Probiotic yoghurt-type drink
- **Danonino-** Fortified fromage frais (also Danimals or Petit Gervais depending on the country; EUR 800 million in 2009)
- **Danacol**- cholesterol-lowering dairy product (EUR 200 sales in 2009)
  Products include: Dairy drink with plant sterols to lower blood cholesterol.

The subsidiary companies also developed the following innovated ranges on their markets in 2009:

- **Activia Breakfast** in Bulgaria and Portugal
- **Activia Intensely Creamy** in the United Kingdom
- **Activia Drink** in Brazil
- **Spoonable Bio (Activia)** in China
- **Danimals Crush** in the United States
- **Danonino yoghurts** [153]

Danone reinforced its differentiation strategy for its flagship brands: Activia, Actimel, Danonino (fruit Petit Gervais), and Danacol. These four brands alone covered EUR 4.6 billion in sales, which accounts for 54% of the division turnover. The year 2009 was also marked by the launch of the Densia brand, fortified with the calcium and vitamin D needed for bone health.

Figure 1. Sales by Product Line



*Source: Danone Economic and Social Report 2009

Country focus and Partnerships (Dairy) [154]

With a historically strong presence in Western Europe, the Fresh Dairy Product division's strategy include developing its business in new countries as well as taking advantage of the more rapid growth of emerging countries. This strategy is supported by the development of the division's main product ranges at affordable prices and with added value in health benefits.

Europe remains a driving force for Fresh Dairy Products. France, Spain, Germany, Italy, the Benelux countries, the United Kingdom, Poland and Russia together represented more half the division's 2009 turnover. In Eastern European countries, the group is the leading producer of fresh dairy products in Poland, Hungary, the Czech Republic, Bulgaria, Romania and Turkey.

Groupe Danone is also the leading producer of fresh dairy products in **Latin America** and is a leader in both value and volume in Mexico, Argentina and Brazil. In **North America**, The Dannon Company is ranked Number One on the market with the outstanding performance of the Activia brand. In Canada, Danone is also number one.

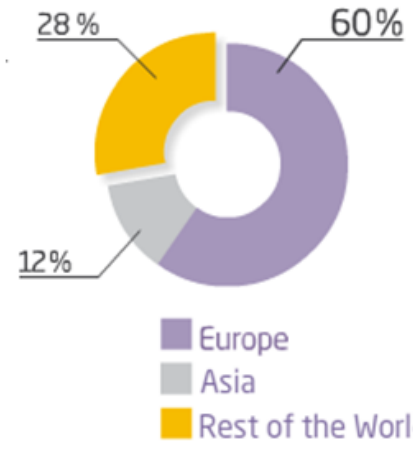
In **Africa and the Middle East**, Danone is the leading producer of fresh dairy products in Saudi Arabia and holds the top position in Egypt, where operations are still relatively recent. Further, the group strengthened its presence in South Africa in 2009 by acquiring 45% of the capital of the Danone Clover company, bringing its holdings to 100% and thereby strengthening its takeover of the Mayo company.

In the **Asia-Pacific** region, Danone strengthened its presence in Japan by gaining more of Japan's market share. The group also holds a minority interest in the listed Japanese group Yakult. It initiated business in India with the November 2009 launch of Choco+Milk, combining a smoothie-like texture with chocolate flavour. Though currently only on the market in Hyderabad, the fifth-largest Indian city, Choco+Milk will very soon take on the markets of two other large Indian metropolises, Bangalore and Chennai. Danone is also present in Indonesia and Thailand. [155]

In 2009, the Fresh Dairy Products division made its first moves into South Korea, Mozambique, Syria and Lebanon, and consolidated operations in Colombia, Kazakhstan and Chile. It also launched its first operation in India and set up new production units in Thailand and China. [156]

Other than the parent company located in Paris, France, Danone also has a number of subsidiaries and partners operating in the fresh dairy products sector around the world (see Table 1 for a summary of Danone's regional strengths and plant locations). Below is an overview of Danone's worldwide subsidiaries and partnerships that are involved with fresh dairy product operations. [157]

Figure 2. Sales by Region



*Source: Danone Economic and Social Report 2009

Subsidiaries:

- **Europe** (34 subsidiaries)
  - Austria: Danone GesmbH
  - Belgium: Danone SA
  - Bulgaria: Danone Serdika
  - Byelorussia: Danone Byelorussia
  - Croatia: Danone
  - Czech Republic: Danone AS
  - Finland: Danone Finland
  - France: Stonyfield France; DanSource; Danone Chiquita Fruits
  - Germany: Danone GmbH
  - Greece: Danone Greece
  - Hungary: Danone Kft
  - Ireland: Danone Ltd.
  - Italy: Danone S.P.A
  - Kazakhstan: Danone; Danone Berkut LLP
  - Netherlands: Danone Nederland BV
  - Poland: Nutricia Polska Sp. z.o.o.
  - Portugal: Danone Portugal S.A
  - Romania: Danone SRL
  - Russia: Danone Industria; Danone Volga
  - Serbia: Danone Adriatic
  - Slovakia: Danone Spol S.r.o
  - Slovenia: Danone
  - Spain: Danone SA; Danone Canaries (ILTESA)
  - Sweden: Danone AB
  - Switzerland: Danone
  - Turkey: Danone Tikvesli
  - UK: Danone Ltd.
  - Ukraine: Danone; Danone Dnipro(Ex Rodich)

- **Africa and Middle East** (7 subsidiaries)
  - Algeria: Danone Djurdjura Algérie
  - Egypt: Danone Dairy Egypt; Danone Dairy Farm
  - Iran: Danone Sahar
  - Mozambique : Danone Mozambique
  - Saudi Arabia: Alsafi Danone compagny
  - South Africa: Danone South Africa (PTY) Ltd; Mayo

- **Asia-Pacific** (6 subsidiaries)
  - China: Danone China
  - India: Yakult Danone India
  - Indonesia: Danone; PT Dairy Indonesia
  - Japan: Danone Japan (Ex Calpis Ajinomoto Danone)
  - Thailand: Danone Dairy Thailand

- **Americas** (11 subsidiaries)
  - Argentina: Danone Argentina
  - Brazil: Danone Ltda
  - Canada: Danone Canada Delisle
  - Chile: Danone Chile
  - Colombia: Danone Alqueria
  - Guatemala: Danone Guatemala
  - Mexico: Danone de Mexico; Derivados Lacteos
  - Uruguay: Danone (Fort Massis)
  - USA: Dannon Company; Stonyfield Farm

Partnerships:

- **Europe**
  - UK: Glenisk

- **Africa and Middle East**
  - Israel: Strauss Dairy
  - Morocco: Centrale Laitière
  - Tunisia: Stial / SOCOGES

- **Asia-Pacific**
  - Australia: Danone Murray Goulburn Australia
  - Bangladesh: Grameen Danone Foods
  - China: Weight Watchers Danone China Limited
  - India: Danone India
  - Japan: Yakult Honsha
  - Korea: Danone Korea
  - Vietnam: Yakult Vietnam

- **Americas**
  - Canada: Micropharma Limited

Region	Main focus/ Strengths	Number of Plants
Central Europe	Fresh Dairy Products; Medical Nutrition	19
Western Europe	Fresh dairy products; Baby Nutrition; Medical Nutrition; Bottled Waters	36
Asia-Pacific	Bottled Waters; Baby Nutrition	50
Africa and Middle East	Fresh Dairy Products	15
North America	Fresh Dairy Products	6
Latin America	Fresh Dairy Products; Bottled Waters	33

Table 1. Overview of Danone's regional strengths and number of plants

Region/Operation	Fresh Dairy Products	Waters	Baby Nutrition	Medical Nutrition
Western Europe	56%	16%	19%	9%
Central Europe	67%	9%	21%	3%
Africa & Middle East	67%	NA	31%	2%
Asia-Pacific	12%	37%	48%	3%
North America	92%	4%	NA	4%
Latin America	66%	28%	3%	3%

Table 2. Contribution of business lines to regional sales in 2009

Employment [158]

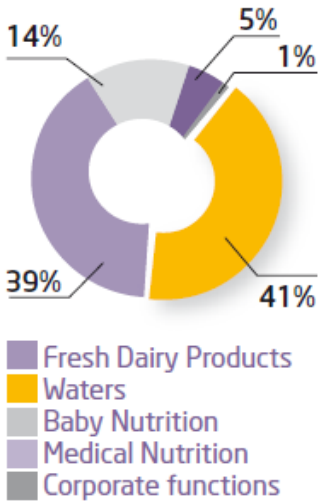
Danone has a total of 80,976 employees worldwide, with Europe employing the most number of people (37%). In respect to business lines, Waters has the most number of employees (41%). This is followed by Fresh Dairy Products (39%), Baby Nutrition (14%), Medical Nutrition (5%) and Corporate functions (1%).

Over 40% of Danone's employees are between the age of 25 and 34; the second-largest age category is 35 to 44. 16% of the employees are holding management positions. The gender ratio for Danone's managers is 6:4 for male and female respectively. However, the gender ratio for other employees (i.e. non-managers) is around 3:1 for male and female respectively.

In 2009, the total turnover of permanent employees is a fifth of Danone's total workforce. Close to three-quarters of Danone's employees are covered by a collective agreement, either as a company or multi-sector agreement, and over 80% of Danone's business units have employee representatives.

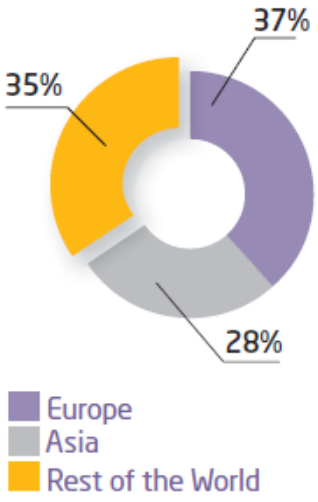
See Figures 3-6 for details of Danone's employment statistics.

Figure 3. Employees by Business Line



* Source: Danone Economic and Social Report

Figure 4. Employees by Region



* Source: Danone Economic and Social Report

Figure 5. Employee Statistics

Social indicators	2009
Total registered employees	
Managers	16%
Other employees	84%
Male managers	57%
Female managers	43%
Other employees, male	76%
Other employees, female	24%
Registered employees	
< age 18	0.04%
18 to 24	10%
25 to 34	42%
35 to 44	31%
45 to 54	13%
> age 55	4%

* Source: Danone Economic and Social Report

Figure 6. Social Policy and Protection

Social indicators	2009
Turnover of permanent employees as % of total workforce	20%
Social policy and safety	
% of business units whose employees are covered by a company or multi-sector collective agreement	73%
% of business units with employee representatives	84%
Number of labor disputes with work stoppages	33

* Source: Danone Economic and Social Report

Ownership and management structure [159]

Danone is over watched by the Board of Directors and its operations are managed by various committees. Following sections will briefly outline Danone's management structure.

The Board of Directors

The Board of Directors is composed of fourteen members. Eight of the directors are independent and each director must hold at least 4,000 shares in registered form. The Directors are appointed for a term of three years which is renewable. Following are the Board of Director members as of 2010:

- Franck Riboud
- Emmanuel Faber
- Bernard Hours
- Bruno Bonnell
- Michel David-Weill
- Richard Goblet d'Alviella
- Christian Laubie
- Jean Laurent
- Hakan Mogren
- Jacques Alexandre Nahmias
- Benoît Potier
- Guylaine Saucier
- Naomasa Tsuritani
- Jacques Vincent

The Audit Committee

The Audit Committee is in particular responsible for reviewing the individual and consolidated financial statements of the company before they are submitted to the Board of Directors. It also controls the process for selection of the auditors for the company.

The Nomination and Compensation Committee

The tasks of this particular Committee include:

- Make proposals to the Board of Directors regarding the nomination / appointment of its members
- Prepare for review and consideration by the Board of Directors of issues relative to corporate governance
- Conduct the evaluation of the Board of Directors and Audit Committee
- Propose the criteria for determining the elements of remuneration of executive directors and officers of the company
- Determine proposals for the awarding of stock options on shares or free shares of the company to these officers
- Define proposals for the allocation of attendance's fees amongst Directors
- Make any recommendations, at the request of the Board of Directors, on the remuneration policy applied by the group

The Social Responsibility Committee

To assist in its decisions on issues of corporate social responsibility (CSR), the Board of Directors at its meeting of December 15, 2006 decided to establish a special third governance body specifically, the Social Responsibility Committee. The Social Responsibility Committee is composed of three Directors, two of whom have been recognised as independent by the Board of Directors.

Actors on Internal Controls

Danone's General Management is responsible for the Group's internal control system. The General Management of the company relies on operational and functional reporting structures, and especially the Chief Financial Officer and the Vice-President, Risks, Control and Audit (VPRCA), both of whom report to the same co-Chief Operating Officer. The operational structure of Danone is managed in respect to divisions, geographical regions, and Country Business Units (CBU).

- **The Chief Financial Officer (CFO)** is responsible for the finance function throughout the entire Group, directly through various centralized functions (Business Controlling, Consolidation, Treasury and Financing, Tax, Strategy, Financial Communications, Acquisitions), and through the CFO's functional responsibility over the finance directors of the 4 divisions.

- **The Risks, Control and Audit Department** was established in early 2009 to strengthen the impact of the 3 functions that comprise it (risk management, internal control, and internal audit) and to create synergies around certain corporate governance and compliance-related topics. The VP RCA reports directly to one of the two co-Chief Operating Officers,

who is a member of the Executive Committee, and reports functionally to the Chairman of the Audit Committee of the Board.

- **The Internal Control Department (ICD)** is composed of a three-member central team working alongside two regional coordinators, and the local CBU internal controllers who typically report to the VP finance of the CBU. The precise role of the Internal Control Department is to maintain the Group's internal control referential, establish the methodology used to document internal control processes, supervise analysis. The department reports directly to the VP RCA and functionally to the CFO, as the latter has shared responsibility for the quality of the Group's internal controls.

- **The Risk Management Department** reports to the VP RCA and is comprised of a three-person team, along with a coordinator for the Americas region – oversees the risk management procedures described in Section 4 – Risk Factors and below in the paragraphs on Risk assessment.

- **The Internal Audit Department** reports to the VP RCA and utilizes the services of specialized teams from international audit firms, including KPMG in particular, always under the supervision of the Danone audit managers, carries out regularly scheduled audits in the operational units as well as audits of Group-wide topics.

The operational line managers at headquarters and in the Country Business Units remain the main actors in internal controls within their respective areas of responsibility, with the support of many central corporate functions (Finance, Risk- Control-Audit, Human Resources, Sustainable Development, Safety, Quality, Information Systems, Legal, etc.).

Company strategy

According to its sustainability report, t**hree main principles** are core to Danone's corporate practices, including: [160]

1. **A rigorous scientific approach**
   This has been implemented for the development of products and the demonstration of their benefits for nutrition and health and relies on the group's unique Research and Development know-how and on ongoing and open dialogue with the scientific community, through public and/or private partnerships, meetings of experts and symposia. Internal reference tools are used to help ensure the relevance of projects developed and provide a convincing demonstration of the effects of the products.

2. **A self-regulation more demanding than official regulations**
   This approach is based on a number of specific internal tools such as the Communication Guidelines, an internal procedure for validating communications on products with claims and the Nutritional Information Charter; it also relies on the implementation of national, regional and / or international interprofessional codes of good practice such as the code of the International Chamber of Commerce on the Marketing of Food and Beverages.

3. **A constant process of consultation with various stakeholders at national, regional and international levels.**
   Danone supports national, European, regional and Global consultation initiatives involving both manufacturers and civil society, especially where they aim to promote clear information for consumers or responsible behaviour in the field of health and nutrition.

New Strategy

Danone has adopted a new strategy at the beginning of 2009 in response to the market downturn triggered by the economic crisis. The new strategy aims to boost sales and market share by focusing on three main priorities: [161]

1. Reweighting product portfolios and adjusting prices to ensure that prices in each country are just right: attuned to market realities, consumer purchasing power, and brand value;
2. Increased emphasis on promotion and point-of-sale events.
3. A shift in consumer advertising to highlight product quality in terms of taste, pleasure and well-being in addition to functional benefits.

Four strategic priorities are also at the core of Danone's mission: [162]

- **Health:** strengthening of the group's ability to deliver relevant benefits that address issues of nutrition and health
- **For All:** new business and economic models to provide quality nutritional solutions to people with low purchasing power in a growing number of countries around the world
- **Nature:** accelerating the momentum to take into consideration environmental impacts (Nature) through the reduction of water and carbon footprint
- **People:** the company evolving as a venue for development for all employees and encouraging their involvement in social programmes

Strategy for Fresh Dairy Products [163]

Danone aims to maintain steady growth in the Fresh Dairy Products division. The division's vitality is closely tied to its capacity to constantly introduce new products and ranges while ensuring that the concepts with the greatest growth potential are spread worldwide as broadly and quickly as possible.

To support its rapid growth strategy, the group seeks to **establish itself on emerging markets**, through acquisition of a holding in a local company, or the stepping up of industrial investments in countries where Danone has recently begun trading or in countries with high growth potential.

The search for new development models is leading to a new strategy in emerging countries that entails Danone's **staying closer to its markets**, keeping a close eye on costs and supply, and contributing positively to the local socio-economic fabric. The goal of this initiative is to offer nutritious food to underprivileged populations suffering from specific nutritional deficiencies.

The division thus focuses on the **economic dimensions of affordability and added value**. This approach, known as "affordvaluity," consists in developing specific brands (such as Gratka in Poland) to reach categories of consumers with more modest purchasing power and marketing products from the major lines at more affordable prices or in different forms, while offering the same functional benefits.

Research and Development (R&D) [164] [165]

Research is at the heart of Danone's strategy. The group is now focusing its efforts on strengthening the benefits currently associated with its brands as well as identifying new benefits on which tomorrow's innovations will be built. The two major research objectives of Danone are to help build and maintain an individual's health and to make nutrition as a way to deal with certain pathologies.

All the Danone science is based on the R&D teams' ability to bring a unique benefit to each product, relating to health, nutrition or pleasure, using ingredients which are found in nature. A large part of Danone's product portfolio is organised around health nutrition benefits, the protection of the immune system, the digestive health, and the cardiovascular health.

Danone Institute

Since 1991, Danone has been providing funding for the Danone Institute, a global network of independent non-profit organizations whose mission is to improve understanding of the links between food, nutrition and health.

The Danone Institute are the cornerstone of Danone's commitment to food education and the promotion of a healthy lifestyle. Their work is free of commercial intent, and the scientific quality of the programs is ensured by a multidisciplinary scientific council involving the most respected and renowned local experts in the fields of medicine, nutrition and human sciences.

The Danone Institute network consists of 18 institutes, including Danone institute cono sur, Belgium, Canada, China, Czech Republic, France, Germany, Indonesia, Israel, Italy, Japan, Mexico, Poland, Russia, Spain, Turkey, United States. There is also one international entity named Danone Institute International. The three main priorities of Danone Institute are:

- Using research to support improvements in the scientific understanding of nutrition;
- Informing and training health professionals in food-related subjects and encouraging the spread of this knowledge;
- Contributing to improving eating habits among local populations through informing and educating the general public.

The network operates under the aegis of the Danone Institute International, which serves to ensure a rich and permanent dialogue between the various countries. To date, over 900 research projects have received support (representing a total of EUR 16 million), dozens of education programmes have been launched and nearly a hundred conferences have been organized.

The Danone International Prize for Nutrition, established in 1997, has been awarded every two years by the Danone Institute International. It is now one of the Institute's key activities, completely in line with the Institute's original mission: to promote health through the development and spread of knowledge about nutrition, food and health.

Groupe Danone- Commentary Summary

Created through mergers that involved Gervais, Boussois-Souchon-Neuvesel (BSN) and Danone, Groupe Danone is now one of the world's largest dairy companies. Its annual sales were around EUR 15 billion in 2009, of which around two-thirds were accounted for by its dairy operation line. [166] Although the company was operating in a wide range of sectors towards the end of the twentieth century, it has gone through a series of activities that simplified its portfolio since then and is now only focusing on four major product lines. These are Fresh Dairy Products, Waters, Baby Nutrition, and Medical Nutrition. [167] The current summary will provide an overview for Groupe Danone's branding strategy, especially focusing on its development in China, the company's engagement with IBM to construct a trading network, its sustainability efforts and the company's cooperation with IUF to develop a global forum for labour-management dialogue.

1. Danone's Branding Strategy- The case of China [168]

Meleway, Badal & Small (2006) presented a case study of Danone's branding strategy in China and outlined that while Danone has long been operating internationally with success, similar to several other multinational enterprises, its first entry into the Chinese market was a failure. Danone entered China in 1987 when barriers to western goods began to dissipate.

Danone's branding strategy was not successful when it first entered the market. Without thorough understanding of the market, Danone applied the ethnocentric strategy and operated without adequately customising its brands to the Chinese market. Although the company invested in a number of state-of-the-art factories to produce its dairy products, Danone yoghurt was too costly for the average Chinese household given its high production costs. In addition, while Chinese consumers were open to foreign processed foods, local brands were preferred for perishables and other basic foodstuffs, as these were perceived to be fresher. Therefore the selling of Danone products was not satisfactory in Chinese market.

Despite having established a global image for healthy, appetising and innovative products, Danone's corporate message was not communicated effectively to the health-conscious Chinese market. Given the unsophisticated nature of the Chinese market, advertising could have been a rather effective marketing and branding strategy, yet the company failed to take full advantage of advertising media such as television and newspaper to promote their brands. In such case, what should have been a natural match between a healthy brand and a health-conscious market did not take place initially.

However, by the late 1990s, when local players in the fast moving consumer goods industry began to challenge or even overtake foreign brands, Danone made aggressive moves to grow through mergers and acquisitions. Acknowledging the importance of *guanxi* in Chinese society, Danone has built relationships with successful entrepreneurs who possess the political connections that are critical to success while also allowing the most successful local brands to keep running, often to the satisfaction of these assertive and influential businessmen. In addition, Danone also started customising its brand to local markets and better adapting to cultural differences through

redesigning and translating its logo. This illustrates that Danone has got to a dominant position by rethinking and reforming its commercial strategy.

Overall, Meleway et al (2006) acknowledged that Danone has achieved the tour de force of introducing dairy products, which were not part of the Chinese dietary habits historically, to many Chinese. In order for the company to maintain its success, it needs continue building brand loyalty across the vast nation, especially when this fidelity to fast moving consumer goods is generally declining globally. Furthermore, Meleway et al (2006) suggested that Danone could seek to further expand its healthy food brands in the Chinese market, given the openness of the Chinese towards health-conscious living. Danone should also consider placing emphasis on its French origin, as a halo effect may be effective in an emerging market.

2. Cooperation with IT giant to construct trading network [169] [170]

It has recently been announced that Danone has selected IBM, the Information Technology giant, to build a secure trading network for the corporation (Savvas, 2011). This project will replace Danone's existing network with IBM's Sterling Collaboration Network, which is a part of IBM's Smarter Commerce portfolio. Through this replacement Danone hopes to improve and add more flexibility to its business-to-business (B2B) relationships with suppliers, business partners and customers.

IBM's network is also expected to enhance Danone's operations management with a focus on reducing cost. The network system will automate Danone's order-supply chain and will likely bolster its customer base going forward. The large scale migration to the new network will involve more than 600 trading partners. IBM is also expected to manage more than nine million messages per year.

The project supports Danone's ordering, invoicing, delivery and logistics processes. The system provides traditional electronic data interchange (EDI) across a diverse range of formats required by Danone's partners and allows third party data to be integrated with Danone's warehouse data. The engagement of Danone in this project reflects the company's effort to bring more effectiveness, enhance and better manage its relationship with partners and customers.

3. Danone's sustainability efforts

Danone has made numerous efforts to enhance its sustainability. In 2009, the Danone Ecosystem Fund was created. The Fund aims to support projects that create sustainable jobs in the Danone ecosystem. This includes all agricultural producers, suppliers, distributors, territorial regions around plants and facilities, etc. Endowed with 100 million euros, it began operating in late 2009 by funding the first agricultural and distribution projects and many Country Business Units are already working on projects.

In addition, after a first pilot year in 2008, the company has decided to formalise the structure of the variable pay system based on three tiers: economic and financial, the levers of business transformation, and a social tier founded on environmental and social performance indicators. Also

in 2009, a system that measures the carbon impact of Danone's activities was deployed and integrated into the company's decision making process. Franck Riboud, CEO of Danone, explains that Danone is committing itself to reducing its energy consumption as well as thinking and acting differently by setting ambitious targets for reducing its environmental impact.[171]

On the other hand, a case study conducted by the Institute for Social Innovation (ESADE Business School) identified ten characteristics and qualities of Danone which made the company's sustainability strategy effective and innovative (Vilanova & Dettoni, 2011):

- Danone has inspiring leaders who define the culture and the vision of the company and motivate workers to understand the mission of the company.
- Danone clearly understands that they must be competitive, and in that sense the company understands that being sustainable is not a cost, but rather a key strategic asset where innovation is the central process to be able to stay competitive.
- By being open to new ideas, flexible and dynamic, Danone has great innovation capacity.
- Danone has developed a culture focused on sustainability and innovation. Vilanova & Dettoni (2011) report that all interviewees share innovation, sustainability and competitiveness as the three most important aspects of the corporate culture.
- Dnaone seems to use sustainability and innovation as a tool to engage the workforce not only with sustainability projects, but with the company itself.
- Sustainability and innovation processes have found to be highlighted on all of Danone's catalogue of products and services, which shows a genuine integration of sustainability into the company's operations.
- Danoone is aware of the fact that innovation is an evolving concept rather than a classic linear process where there is an investment, then a R&D process, and finally an output that generates value for the firm. This accentuates engagement in open innovation processes with suppliers, customers, universities, other companies and governments.
- Danone believes that a way to remain at a leading position is to constantly challenge the organization and each of its units.
- Vilanova & Dettoni (2011) find that all of those employees interviewed seem to share a sense of pride in their organization, which is a shared sense of achievement that gives the workforce a sense of belief and faith.
- There is an apparent search for legitimacy and authenticity in Danone. The company agrees that sustainability and innovation must be built on honesty and humility, and it is important that they are not afraid to admit mistakes and explaining actions. [172]

4. Cooperation with IUF [173] [174]

Danone has maintained ties to International Union of Foodworkers (IUF), the leading international union in the food sector, since 1976. Bilateral agreements between the two organisations could be dated back as far as 1986. First annual meeting between the IUF, its affiliates and Danone was initiated in 1987; however this was succeeded by The Danone Comittee for Information and

Consultation (CIC), which was established in 1996. Up to now, representation was ensured mainly at the European level. Prior to 2009, employee representation was based largely on geographic Europe, including countries outside the European Union, although regional IUF representatives from Europe, Latin America and Asia and union representatives from Central and Eastern European countries attended as full members..

In 2009, IUF and Danone took their European relationship via formalising their shared experiment in developing a global forum for labour-management dialogue. The goal is to update the existing CIC to give it a global scope and allowing for broader representation of Danone employees in the group's worldwide businesses. Under the structure IUF and Danone are currently experimenting with, both sides have factored in new corporate realities and the annual meeting of the CIC is organised around two core issues:

- Expanding geographically to include employee representatives from the group's business units in Asia (Indonesia), North America (the US and Canada), Latin America (including Mexico, Argentina, Brazil and other countries) and Africa (including South Africa and Algeria).
- Establishing targeted economic and social dialog with the group's employees by setting up specific committees for Fresh Dairy Products, Waters, Baby Nutrition and Medical Nutrition.

Senior management is working closely with employee representatives from each division to address employment and labour-related issues and share group strategy with all employees. This new forum will enable employee representatives to better understand and buy into Danone's strategic challenges, and allow committee members to further contribute and address each division's key issues, including organisation, HR, management and special projects.

Ron Oswald, General Secretary of the IUF, acknowledges the advantage brought by this achievement, as all of IUF's member organisations representing Danone workers around the world can now join their fellow trade unionists in Europe in building a platform for discussion with this company at global level. Ron Oswald believes that this achievement advance the dual economic and social project which is Danone's sustainable success.

5. Brief Conclusion

From the above it could be seen that Danone is actively engaging in activities and pursuing partnerships that could further enhance the effectiveness, performance and sustainability of its operations. Danone's experience in China shows that the company would seek to modify its strategies when it faces challenges. Furthermore, through working with other organisations including IBM and IUF, Danone has proven its dedication to enhance the relationship and communication with and between its stakeholders, including business partners, customers, distributors, and employees.

Unilever- Netherlands/ United Kingdom

Abstract

Originally founded in 1930, Unilever is now a British-Dutch multinational enterprise that governs an array of worldwide consumer product brands in foods, beverages, personal care products and cleaning agents. The Unilever Group comprises of two parent companies, Unilever N.V. (registered in the Netherlands) and Unilever PLC (registered in the United Kingdom). The two parent companies, together with their group companies, operate as a single economic entity, commonly known as "the Unilever Group". Unilever's top 12 brands all have sales of more than EUR 1 billion, out of which six are home and personal care brands and the other six are food and beverage brands. Out of the six food and beverage brands, two are manufacturers of dairy products. Unilever is one of the biggest dairy companies in the world on the basis of its ice cream businesses, with Heartbrand products sold in more than 40 countries. The USA and Brazil are the two largest markets outside the company's home country. More than half of the company's business is in fast-growing emerging market, with the Asia Africa region being Unilever's largest region. Unilever is also experiencing good growth in Latin America. In developed markets, Unilever is focusing on ensuring the delivery of high quality service to customers in places like the US and Western Europe. In terms of its business, Unilever's main joint ventures are the Unilever Jerónimo Martins in Portugal, Pepsi Lipton International and the Pepsi/Lipton Partnership in the US.

Unilever is governed by its Board of Directors, four Board Committees as well as one Management Committee. Unilever employs over 167,000 worldwide, with close to 60% employed in the Asia-Africa region, 25% employed in the Americas and around 17% employed in Western Europe. The company implemented a number of programmes in order to attract talent, enhance leadership capabilities, increase the health, safety and well-being of its employees. Currently, Unilever's main objective is to increase the volume profitably across its categories and countries through the four growth priorities of brands and innovation, the market place, continuous improvement and people. In the aim to pursue continuous growth and innovation, Unilever's Research and Development function employs over 6,000 professionals around the world through its nutrition network and global and regional development centres. However, a review of relevant studies, news articles and commentaries reflects that while Unilever does have a significant presence in the global market as well as various strengths, it has also faced a number of challenges in the past decade, including several employment relations issues. While the company has successfully overcome the challenges to its corporate profitability and further enhanced its performance through radical shifts in its strategies, it is clear that Unilever still has to further improve the monitoring and management of human resources and employment conditions across all of its operations globally.

General information

Originally founded in 1930 by Antonius Johannes Jurgens, Samuel van den Bergh and William Hulme Lever, 2nd Viscount Leverhulme, Unilever is now a British-Dutch multinational enterprise that governs an array of worldwide consumer product brands in foods, beverages, personal care products and cleaning agents. The Unilever Group comprises of two parent companies, Unilever N.V. (registered in the Netherlands) and Unilever PLC (registered in the United Kingdom). The two parent companies, together with their group companies, operate as a single economic entity, commonly known as "the Unilever Group". [175]

Unilever is one of the biggest dairy companies in the world on the basis of its Ice Cream businesses. Together Unilever and Nestle control over one third of the global market for Ice cream. Unilever compete aggressively with Nestle in the global ice cream markets with brands such as Ben and Jerry and Magnum, investing in R&D to provide healthier options for indulgence. With the ice cream market in countries such as India expanding at around 20% per year, Unilever is well positioned to take advantage of this key indulgence market. [176] See below for an overview of Unilever's corporate history:[177]

1930: Unilever is created.

1930s-1940s: Business rationalises operations during the Great Depression and the Second World War; it also continues to diversify.

1950s-1960s: Business booms as new technology and the European Economic Community lead to rising standards of living in the West and new markets open up in emerging economies. Unilever focussed on entering new markets.

1970s: Due to hard economic conditions and high inflation, the fast-moving consumer goods (FMCG) sector was facing challenges.

1980s: Unilever is now one of the world's biggest companies, but decided to rationalise its businesses to focus on core products and brands.

1990s: The business expands into Central and Eastern Europe and further sharpens its focus on fewer product categories, leading to the sale or withdrawal of two-thirds of its brands.

2000 onwards: The decade starts with the launch of Path to Growth, a five-year strategic plan, and in 2004 further sharpens its focus on the needs of 21st century consumers with its Vitality mission.

In a report published in 2010 by Rabobank Group, Unilever is ranked tenth by turnover among dairy companies worldwide.[178] Below are the key data of Unilever: [179]

Annual Turnover (2010)	EUR 44.3 billion
Annual Dairy Turnover (2009 estimate) [180]	EUR 4.57 billion
Underlying volume growth (2010) [181]	5.8%
Market Share of World Milk Production [182]	> 0.4%
Number of factories worldwide [183]	273
Total number of sites and offices	500 sites and offices in 100 countries
No. of Employees (2010)	Over 167,000
Number of Markets Worldwide	Products sold in over 180 countries
Number of Brands [184]	Over 400

Product mix [185] [186] [187]

Unilever owns over 400 brands and its portfolio ranges from nutritionally balanced foods to indulgent ice creams, affordable soaps, luxurious shampoos and everyday household care products. Brands that are famous internationally include Lipton, Knorr, Dove, Axe, Hellmann's and Omo, alongside trusted local names such as Blue Band, Pureit and Suave.

Unilever's top 12 brands all have sales of more than EUR 1 billion, and the top 20 brands account for 70% of its sales. Out of the top 12 brands, six are home and personal care brands and the other six are food and beverage brands. Out of the six food and beverage brands, two are manufacturers of dairy products (see Table 1 for an overview of Unilever's turnover by product category).

Product Range

- **Home care:** includes home and clothes cleaning products, with famous brands such as *Omo, Surf, Comfort, Radiant and Sunlight*
- **Personal care:** includes bath, skin care and beauty products, with brands such as *Dove, Lux, Axe, Pond's, Rexona, Sunsilk, TRESemmé* and *VO5*. Brands like *Dove, Lux, Pond's* and *Rexona* have made Unilever global leaders in the deodorant and skin care markets, where its sales grew 7.9% in 2010.
- **Food and beverage:** includes a variety of food products such as ice cream, spreads and jam, tea, ready-meals and frozen foods. *Lipton's* and *Brooke Bond*, *Ben & Jerry's* and *Heartbrand* are among the brands that have made Unilever global leaders in the ice cream and beverage markets, where volume grew 5.9% in 2010.

Dairy products [188]

Unilever is the world's biggest ice cream manufacturer, with Heartbrand products sold in more than 40 countries. The Heartbrand operates under different names in different markets (Wall's in the UK and most parts of Asia, Algida in Italy, Langnese in Germany, Kibon in Brazil, and Ola in the Netherlands).

In 2010, Unilever's underlying volume growth for ice cream and beverages was 5.9%, and the turnover for this category was EUR 8.6 billion. Also, the company strengthened its ice cream business in Western Europe, announcing acquisitions in both Greece and Denmark. Unilever brands that produce dairy products include:

- *Becel* (*Flora/Promise*): Milk, fermented milk, margarine
- *Ben & Jerry's*: Ice cream
- *Breyers*: Ice cream
- *Crème Bonjour:* Soft cream-cheese
- *Klondike*: Ice cream sandwiches
- *Molly McButter*
- *Heartbrand*: Ice cream

Product Category	Savoury; Dressings; Spreads	Ice Cream; Beverages	Personal Care	Home Care	Total
2010 Turnover (in EUR million)	14,164	8,605	13,767	7,726	44,262
% share of category	32.0%	19.4%	31.1%	17.5%	100%

Table 1. Unilever's turnover by product category [189]

Regional and Country Focus [190]

The home countries of Unilever are the Netherlands and the United Kingdom, and the USA and Brazil are the two largest markets outside the company's home country (see Table 2 for an overview of Unilever's turnover by markets). More than half of the company's business is in fast-growing emerging market, with the Asia Africa region being Unilever's largest region. Unilever is also experiencing good growth in Latin America. In developed markets, Unilever is focusing on ensuring the deliver of high quality service to customers in places like the US and Western Europe. [191] The section below outlines the data for countries that have clear official websites and information available online. See Figure 1 for Unilever's turnover and underlying volume growth by region.

Europe

Unilever's products (including dairy) are sold in 23 European countries; these include:

- Austria: Becel; Heartbrand (Cornetto/Cremissmo/Eskimo/Magnum/Viennetta)
- Belgium: Becel; Ben & Jerry's; Heartbrand (Ola)
- Czech Republic: Flora; Ben & Jerry's; Heartbrand (Algida)
- Denmark: Becel; Heartbrand (Frisko)
- Finland: Becel/Flora; Crème Bonjour; Heartbrand (GB Glace/Magnum/Viennetta/ Carte D'Or)
- France: Fruit d'Or; Ben & Jerry's; Heartbrand (Carte D'Or/Cornetto/Magnum/Miko/ Solero/Viennetta)
- Germany: Becel; Heartbrand (Cremissimo/Langnese/Magnum/Viennetta)
- Greece: Becel; Ben & Jerry's; Heartbrand (Algida/Carte D'Or/Cornetto/Magic)
- Hungary: Flora; Heartbrand (Algida)
- Ireland: Flora; Ben & Jerry's; Heartbrand (Carte D'Or/Cornetto/HB Ireland/Magnum/ Solero/Viennetta/Walls)
- Italy: Heartbrand (Algida)
- Netherlands: Becel; Ben & Jerry's; Heartbrand (Ola)
- Poland: Flora; Heartbrand (Algida)
- Portugal: Becel/Flora; Ben & Jerry's; Heartbrand (Ola)
- Romania: Becel; Heartbrand (Algida)
- Russia: Crème Bonjour
- Slovak Republic: Flora; Heartbrand (Algida)
- Spain: Flora; Ben & Jerry's; Heartbrand (Frigo)
- Sweden: Becel; Crème Bonjour; Heartbrand (GB Glace)
- Switzerland: Becel; Heartbrand (Cornetto/Cremissimo/Magnum/Solero/Viennetta)
- Turkey: Becel; Ben & Jerry's; Heartbrand (Magnum/Carte d'Or/Max/Algida/ Cornetto/Fruttare)
- Ukraine: Crème Bonjour
- United Kingdom: Flora; Ben & Jerry's; Heartbrand (Carte D'Or/Cornetto/HB Ireland/ Magnum/Solero/Viennetta/Walls)

Africa

Unilever's products are sold in 20 African countries, including:

- Algeria
- Angola
- Burundi
- Egypt
- Ghana
- Ivory Coast
- Kenya
- Libya
- Malawi
- Morocco
- Mozambique
- Nigeria
- Rwanda
- South Africa
- Sudan
- Tanzania
- Tunisia
- Uganda
- Zambia
- Zimbabwe

Out of the above countries, dairy products are only sold in South Africa.

- South Africa: Flora; Heartbrand (Ola)

Americas

Unilever's products are sold in 20 American countries, including:

- Argentina
- Bolivia
- Brazil
- Canada
- Chile
- Colombia
- Costa Rica
- Ecuador
- El Salvador
- Caribbean
- Guatemala
- Honduras
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- Uruguay
- USA
- Venezuela

Out of the above, dairy products are sold in the following countries:

- Brazil: Becel; Heartbrand (Kibon)
- Canada: Becel; Ben & Jerry's; Breyers
- Chile: Heartbrand (Bresler)
- Colombia: Becel; Heartbrand (Tío Rico/ Pingüino)
- Costa Rica: Becel; Heartbrand (Tío Rico/ Pingüino)
- Ecuador: Becel; Heartbrand (Tío Rico/ Pingüino)
- El Salvador: Becel; Heartbrand (Tío Rico/ Pingüino)
- Caribbean: Flora; Ben & Jerry's; Breyers
- Guatemala: Becel; Heartbrand (Tío Rico/ Pingüino)
- Honduras: Becel; Heartbrand (Tío Rico/ Pingüino)
- Mexico: Becel; Ben & Jerry's; Heartbrand (Holanda)
- Nicaragua: Becel; Heartbrand (Tío Rico/ Pingüino)
- Panama: Becel; Heartbrand (Tío Rico/ Pingüino)
- USA: Promise; Ben & Jerry's; Breyers; Heartbrand (Magnum)
- Venezuela: Becel; Heartbrand (Tío Rico/ Pingüino)

Asia/Pacific

Unilever's products are sold in 17 Asian/Pacific countries, including:

- Australia
- Bangladesh
- China
- India
- Indonesia
- Japan
- Korea
- Malaysia
- New Zealand
- Pakistan
- Philippines
- Singapore
- Sri Lanka
- Thailand
- Turkey
- Taiwan
- Vietnam

Out of the above, dairy products are sold in the following countries:

- Australia: Flora; Heartbrand (Streets)
- China: Heartbrand (Wall's)
- India: Heartbrand (Kwality Wall's)
- Indonesia: Heartbrand (Wall's)
- Malaysia: Heartbrand (Wall's)
- New Zealand: Flora; Heartbrand (Streets)
- Pakistan: Heartbrand (Wall's/Magnum)
- Philippines: Heartbrand (Selecta)
- Singapore: Ben & Jerry's; Heartbrand (Wall's)
- Sri Lanka: Flora
- Thailand: Ben & Jerry's; Heartbrand (Wall's)
- Turkey: Becel; Ben & Jerry's; Heartbrand (Max/Magnum/Carte D'Or/Algida/Cornetto)
- Vietnam: Heartbrand (Wall's)

Middle East

Unilever's products are sold in 15 Middle East countries, including:

- Bahrain
- Iran
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Oman
- Palestine
- Qatar
- Saudi Arabia
- Sudan
- Syria
- United Arab Emirates
- Yemen

Out of the above countries, dairy products are only sold in Israel.

- Israel: Mazola

Markets	Netherlands/ UK	USA	Brazil	All other countries	Total
2010 Turnover (in EUR million)	3,490	6,725	3,502	30,545	44,262
% share in total turnover	7.9%	15.2%	7.9%	69.0%	100%

Table 2. Unilever's turnover by markets [192]

Partnerships

In terms of its business, Unilever's main joint ventures are the Unilever Jerónimo Martins in Portugal, Pepsi Lipton International and the Pepsi/Lipton Partnership in the US. [193] In addition, Unilever is engaged in various partnerships with organisations that range from worldwide federations to development programmes. While some of these collaborations aim to expand the company across overseas markets or to develop new products, other partnerships are targeted at international talent recruitment, drive health campaigns or current issues (such as environmental sustainability). Below are some examples of Unilever's partnership with other entities.

Pepsico [194]

In 2007, PepsiCo and Unilever agreed to expand their existing international partnership for the marketing and distribution of ready-to-drink tea products under the Lipton brand. The new agreement will more than double the volume of the companies' current PLI joint venture and positions both companies to capture more of the growth opportunities associated with the rapidly expanding global ready-to-drink tea market. Each company will continue to own 50% of the joint venture, with PepsiCo paying Unilever an undisclosed sum for its share of the businesses in the new markets being transferred.

World Heart Federation [195]

In 2006, Unilever announced the continuation of its partnership with the World Heart Federation to improve heart health. The partnership was first established in 2003 and over the past three years has focused on increasing awareness of heart disease and its risk factors, to both the public and healthcare professionals. With cardiovascular disease being the number one cause of death worldwide, the partnership seeks to increase awareness of the role a healthy diet and lifestyle can play in helping to maintain heart health and reducing the risk of cardiovascular problems.

FDI World Dental Federation [196]

In 2010, Unilever renewed its partnership with FDI World Dental Federation, which was underscored by a new global campaign to drive behavioural change. The FDI World Dental Federation is an independent global organisation which represents approximately one million dentists worldwide, as well as 200 national dental associations and specialist groups. Through this public-private partnership, the only one of its kind for oral care in the world, the two organisations drive nationwide campaigns globally and widely promote educational material on the importance of tooth-brushing to schools and dentists.

Recyclebank [197]

To help deliver against the ambitious goals laid out in the Unilever Sustainable Living Plan, the roadmap for doubling the size of its business while reducing its environmental impact, Unilever partners with Recyclebank to educate consumers on how they can take small actions to make a big difference in reducing waste and water use.

Working with nutrition and health experts [198]

In the process of developing and launching its products and campaigns, Unilever works with experts and advisers in nutrition and health. Unilever's community of 250 nutritionists maintain relations with local experts and national and international organisations to understand their concerns and to share knowledge on scientific, nutritional and health issues relevant to the company's brands.

In early 2009, Unilever signed a partnership agreement with the International Union of Nutritional Sciences. A first meeting was held with 40 of the world's leading experts in diet, nutrition and health, from more than 25 countries, on nutritional guidelines for optimal fat quality, to be used as a basis for a global awareness campaign on appropriate fat choices. Unilever collaborates with some 885 research partners, including prominent food health institutes and universities such as the Top Institute of Food and Nutrition in the Netherlands and the India Diabetes Research Foundation. Unilever also shares much of its research through external presentations and peer-reviewed publications.

Together for Child Vitality: Unilever and the World Food Programme

2010 was the final year of Unilever's Together for Child Vitality partnership with the United Nations World Food Programme (WFP). Since its formation in December 2006, the partnership has provided funding and product donations for over 60 million school meals for between 60 000 and 80 000 children a year. Between 2007 and 2010, Unilever businesses organised activities in around 50 countries to raise awareness and funds for WFP. Brands such as Rama and Blue Band margarine supported the partnership through cause-related marketing campaigns. The partnership also delivered joint nutrition and hygiene education programmes to nearly 50 000 children in Kenya, Colombia and Indonesia. Unilever nutritionists worked with WFP to conduct a scientific review of the nutritional needs of school children and the nutritional quality of WFP's school meals.

Project Laser Beam

Project Laser Beam (PLB) is the next step in Unilever's partnership with the World Food Programme. The Project aims to reach 500 000 malnourished children via a public–private partnership between the UN World Food Programme (WFP), Unilever, Kraft Foods, DSM and the Global Alliance for Improved Nutrition. The new five-year agreement was signed at the World Economic Forum in Switzerland in January 2011. The deal seeks to improve children's health via schools and communities with school meals, safe drinking water, improved handwashing behaviour and job creation for women.

Wageningen University

To support research on micronutrient deficiencies in the developing world, Unilever is financing the Micronutrients and International Health Chair at WageningenUniversity in the Netherlands for five years. As part of this research programme, Unilever also fund three PhD and six masters-level scholarships for students from developing countries, helping them to become future nutrition experts in their home countries, and thus contributing to finding effective solutions for the issues around maternal and child nutrition.

Ownership and management structure [199]

The Dual Structure

Since 1930 when the Unilever Group was formed, NV and PLC, together with their group companies, have operated as nearly as practicable as a single economic entity with the same Directors, adopt the same accounting principles, and pay dividends to their respective shareholders on an equalised basis. This is achieved by a series of agreements between NV and PLC, together with special provisions in the Articles of Association of NV and PLC. However, they remain separate legal entities with different shareholder constituencies and separate stock exchange listings.

The Boards

The Boards are responsible for securing unity of management of NV and PLC. It has always been a requirement of Unilever that the same people be on the Boards of the two parent companies. The Boards are one-tier boards, comprising Executive Directors and, in a majority, Non-Executive Directors. The Boards have ultimate responsibility for the management, general affairs, direction and performance and long-term success of the company's business as a whole (see Figure 1 for Unilever's Corporate Governance structure).

Directors

- **Non-Executive Directors- Chairman:** Unilever has a separate independent Non-Executive Chairman and Chief Executive Officer. The Chairman takes the lead in creating effective Boards, managing the relationships between Directors, and working closely with the Chief Executive Officer to ensure the successful functioning of the Boards whilst evaluating and monitoring compliance with Unilever's Code Policies and governance processes.

- **Non-Executive Directors- Senior Independent Director:** The Senior Independent Director acts as the spokesman, and serves as an intermediary for the other Directors when necessary. The Senior Independent Director may also be a point of contact for shareholders and other stakeholders in order to help develop a balanced understanding of their issues and concerns.

- **Other Non-Executive Directors:** The Non-Executive Directors share responsibility for the execution of the Boards' duties, taking into account their specific responsibilities, which are essentially supervisory. The key role and responsibilities for Non-Executive Directors include supervising, developing strategy and providing advice to the CEO; providing oversight of risks and controls; reporting of performance; remunerating of and succession planning for Executive Directors; and governance and compliance.

Executive Directors

- **Chief Executive Officer:** The Chief Executive Officer has the authority to determine which duties regarding the operational management of the companies and their business enterprises will be carried out under his responsibility, by one or more Executive Directors or by one or more other persons. This provides a basis for the Unilever Executive team (UEx) that is chaired by and reports to the Chief Executive Officer.

Committees

The Boards have established the committees described below, all formally set up by Board resolutions with carefully defined remits. They are made up solely of Non-Executive Directors and report regularly to the Boards.

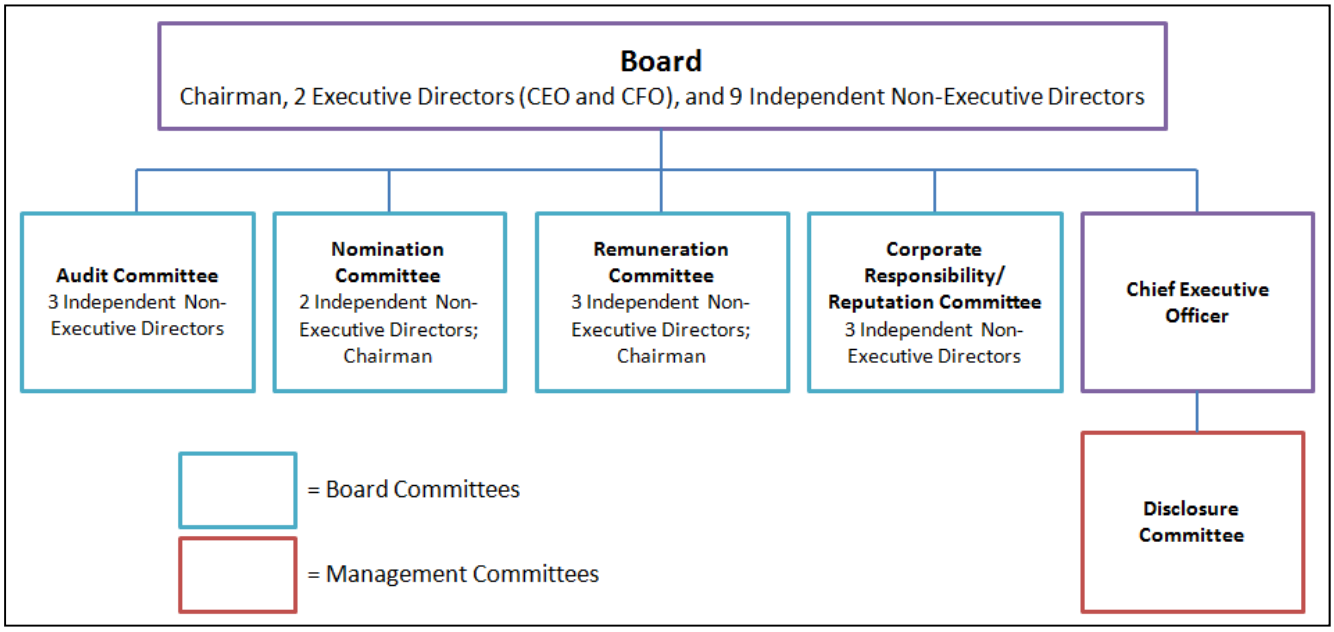
- **Audit Committee:** The Audit Committee assists the Boards in fulfilling their oversight responsibilities in respect of: the integrity of Unilever's financial statements; risk management and internal control arrangements; compliance with legal and regulatory requirements; the performance, qualifications and independence of the external auditors; and the performance of the internal audit function.

- **Corporate Responsibility and Reputation Committee:** The Corporate Responsibility and Reputation Committee governs Unilever's conduct with regard to its corporate and societal obligations and its reputation as a responsible corporate citizen.

- **Nomination Committee:** The Nomination Committee recommends to the Boards candidates for the positions of Director and it also has responsibilities for succession planning and oversight of corporate governance matters. The Nomination Committee comprises a minimum of two independent Non-Executive Directors and the Chairman.

- **Remuneration Committee:** The Remuneration Committee reviews Directors' remuneration and is responsible for the executive share-based incentive plans. It makes proposals to the Boards, within the parameters set by Unilever's shareholders, on specific remuneration arrangements for each of the Executive Directors, the remuneration scales and arrangements for Non-Executive Directors and the policy for the remuneration of the tier of management directly below the Boards.

Figure 1. Unilever's Corporate Governance structure



Employment [200]

Unilever employs over 167,000 worldwide and there are 22 nationalities among Unilever's top tier managers (see Figure 2 for Unilever's employee numbers by geographical region). In order to effectively recruit and manage its human resources, the company implemented a number of programmes, including:

Talent and Organisation Readiness Programme

Launched in 2009, this programme assesses four areas, including talent, skills, organisation and culture, identifying the issues and putting plans in place to address them. By the end of 2010 Unilever had completed assessments in units representing around 75% of Unilever's turnover. Many of the assessments are already delivering results. For example, in China, Unilever identified a shortage of talent in the leadership pipeline and difficulties in retaining young talent. Subsequently a recruitment scheme was developed for students studying overseas, offering opportunities back home once they have finished their initial training at Unilever after graduation. In Latin America, the Unilever in your Class campus programme targeted college students across eight countries. The programme has helped almost 1,700 students learn more about Unilever and the consumer goods industry.

In addition, Unilever addressed the importance of having a diverse team across gender, nationality, race, creed and culture, in order to connect with the widest range of consumers. Currently, Unilever has six nationalities represented on the Unilever Executive team and five on the Board of Directors. In terms of gender, the number of women in senior positions increased from 23% in 2007 to 27% at the end of 2010.

Leadership and Personal Responsibility

With the launch of the Compass strategy, Unilever developed a performance culture toolkit and held workshops for all managers across the company. The programme, run and owned by leaders within the business, places strong emphasis on leadership and personal responsibility. On the other hand, in 2010, Unilever changed its incentives and remuneration plans for all Unilever managers. They are now based entirely on personal achievement, with personal development goals also contributing to people's overall rating.

Safety is essential

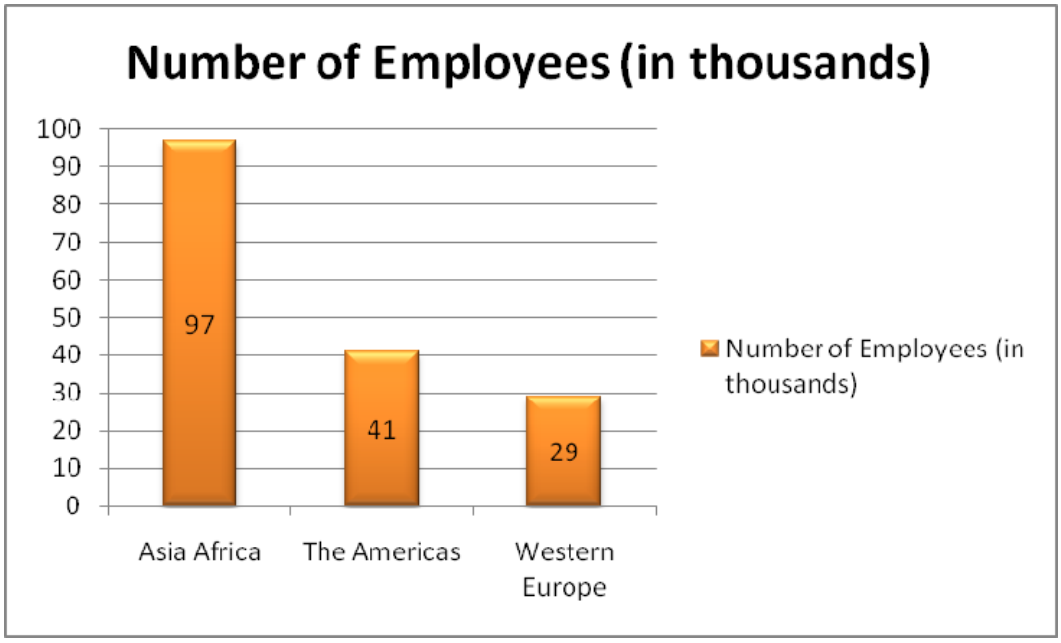
Unilever places strong emphasis on the health, safety and well-being of everyone working for or on behalf of Unilever. A key measure of progress is the company's total recordable accident frequency rate, which counts all employee workplace accidents except that requiring only simple first aid treatment. There was a 15.7% reduction in Unilever's total recordable accident frequency rate in 2010.

Nutrition, lifestyle and exercise [201]

This particular programme offers employees an assessment in nutrition, lifestyle and exercise, from which a personalised health programme is developed. So far, 35,000 employees across 30 countries have enrolled in the programme and currently there is a strong push for more countries to become involved.

The scheme offers a unique opportunity for employees. Unlike going to a gym, it addresses all aspects of an individual's lifestyle, beyond exercise. After an initial health risk assessment which looks at everything from managing everyday stresses to alcohol consumption and smoking, a blood chemistry test measures various aspects of health, including cholesterol levels. With all this information, a health professional takes the employee through a personal nutritional and physiological assessment. From that a personalised improvement programme is developed for the employee to follow. After the first six months, participants are reassessed to monitor improvement.

Figure 2. Unilever's Employee Numbers by Geographical Region



Company strategy [202] [203]

Growth priorities

Unilever's main aim is to win share and grow volume profitably across its categories and countries. The company has a strong portfolio of leading brands and market positions. Its significant presence in the emerging markets leaves Unilever well positioned to win where much of the world's future growth will be. The company is also aiming to grow in the developed world, which is almost 50% of its business. EUR 4.6 billion of acquisitions have been announced since 2009; these underpin Unilever's determination to have scale and grow in Europe and the US as the company accelerate growth in the emerging markets. Unilever has identified four particular growth priorities:

- **Brands and innovation**

Unilever aims to offer a broad portfolio that appeal to consumers with different needs and budgets. Unilever brands must also offer superior product quality and be supported by excellent marketing. Through focusing on innovation programmes that are focused on being 'bigger, better and faster', innovation platforms are created and then rolled out rapidly to multiple markets.

- **The market place**

Unilever places strong emphasis on expansion into new markets, which are the company's biggest opportunity for growth. Unilever believes that when working with customers, the challenge is to grow the size of the categories in which Unilever operates. In a fast changing world, this requires flexibility in the company's approach to different channels and responsiveness to different customer strategies.

- **Continuous improvement**

Winning in consumer goods requires a continuous improvement philosophy and Unilever's goal is to be faster and simpler and translate efficiency into more competitive costs. The company is prioritising speed and flexibility in the supply chain to deliver growth.

- **People**

Unilever believes that it will only meet its growth ambition if the necessary talent and organisation are in place. Across the business Unilever is conducting reviews of people, skills and capabilities and are taking appropriate action and investing for the future.

Research and Development [204]

The R&D function at Unilever employs over 6,000 professionals located in 20 countries around the world. The R&D labs cooperate closely with project team members, who are often selected from different locations for their expertise in particular scientific areas that are relevant to the delivery of that project. Increasingly project teams will also partner with university academics and specialist companies. Nearly half of Unilever's 'pipeline' of innovations now utilises open innovation.

In 2009 Unilever launched the 'Genesis Programme', which applies disruptive technology and consumer insights across multiple categories, enabling much bigger market opportunities. An example of applying one technology across different product categories is Unilever's Signal White Now toothpaste uses whitening technology first developed for its laundry brands.

The Nutrition Network [205]

The Unilever Nutrition Network (UNN) plays a key role in delivering Unilever's Sustainable Living Plan target to improve the health and wellbeing of one billion people. The network is organised into six regions spanning the globe and it focuses on growing Unilever's business by providing world-class nutrition and health innovation. UNN's core activities include working with external experts and authorities to provide evidence for claims, driving the nutritional enhancement of Unilever's products, and promoting a healthy diet and lifestyle.

Global & Regional Development Centres [206]

Unilever's development is carried out at 31 Global Development Centres and over 90 Regional Development Centres. Activities carried out at the development centres include: perfecting a formulation so that it is aesthetically pleasing and stable when stored; developing packaging that suits the product format, delights the consumer and minimises environmental impact; and ensuring the product is ready for large scale factory production. Other specialists develop fragrances, explore nutritional content and test products with consumers to ensure they live up to performance promises. The regional teams are then responsible for launching the product into their region. They draw on a deep understanding of local factors such as consumer preference, regulatory framework, legal considerations and competitor products. Unilever's strategic research and development laboratories are located in the UK, the Netherlands, the US, China and India (see Table 3 for locations of Unilever's Global R&D Centres):

- **Port Sunlight, UK:** Around 800 employees work on biosciences, neuroscience, sensory science, material science, physical sciences, process science, measurement science, data modelling and HTS that contribute to brands including Omo, Dove, Sunsilk, Rexona, Axe, Domestos, Cif, Signal.
- **Colworth, UK:** Around 650 employees specialise in the areas of plant science, cell and molecular biology, genomics, health psychology, social science, imaging, biomechanical measurement and advanced web communications contributing to brands including Lipton, PG Tips, Flora / Becel, Magnum and Solero.

- **Vlaardingen, the Netherlands:** Over 1000 employees focus on the areas of bioscience, nutrition & health, sensation, perception & behaviour, structured material and process sciences, advanced measurement and data modelling.
- **Trumbull, US:** Besides expertise in the areas of cell & molecular biology and imaging, the 400 employees at Unilever's Trumbull centre also work in packaging design and engineering, process design and engineering and information technology and management.
- **Bangalore, India:** Around 300 employees specialise in the areas of Microbiology, Virology and Microstructure Creation. Focussing on foods and beverages for South East Asia, the centre contributes to brands including Lifebuoy, Pureit, Ponds, Fair and Lovely, Radiant, Omo, Brooke Bond, Lipton, Walls and Knorr. Unilever's recent initiative on water purification was driven predominantly out of this laboratory.
- **Shanghai, China:** With approximately 430 employees, the Shanghai research centre provides expertise capabilities in synthetic and mechanistic chemistry and traditional Chinese medicine. Focussing on global research and development of hair and skin products, the centre contributes to brands including Clear, Lux, Hazeline, Zhong Hua, Wall's, Ponds, Lipton, Knorr, Vaseline, Rexona, Omo and Comfort.

Region	Country	Development Centre	Global Research/Development Centre
Europe	France	Compiegne	-
	Germany	Heilbronn	-
	Italy	Caivano	-
		Casale	
		Cisterna	
	Poland	Poznan	-
	Russia	Moscow	-
	The Netherlands	-	Vlaardingen
	Turkey	Besan	-
		Istanbul	
		Çorlu	
	UK	Leeds	Colworth
			Port Sunlight
Middle East and Africa	South Africa	Durban	-
		Boksburg	
	UAE	Dubai	-
Asia-Pacific	Australia	Sydney	-
	China	-	Shanghai
	India	Mumbai	Bangalore
	Indonesia	Jakarta	-
	Japan	Utsunomiya	-
	Philippines	Manilla	-
	Thailand	Bangkok	-
	Vietnam	Ho Chi Minh	-
Americas	Argentina	Buenos Aires	-
	Brazil	Valinhos	-
	Mexico	Mexico City	-
	USA	Englewood Cliffs	Trumbull
		Lisle, Missouri	

Table 3. Locations of Unilever's (Global Research) Development Centres

Unilever Group- Commentary Summary

Originally founded in 1930, the Unilever Group now comprises of Unilever N.V. and Unilever PLC and is one of the world's largest dairy companies on the basis of its international ice cream business. Its annual dairy turnover accounts for around one-tenth of its total turnover and was around EUR 1.57 billion in 2009.[207] Besides its ice cream business, Unilever also owns various famous consumer brands in other categories including foods, beverages, personal care products and cleaning agents.[208] The current summary will provide an overview for Unilever Group's shift in company strategy, approach to innovation, research and development, as well as the issues of concern that have been raised by the IUF in regards to its operations in India and Pakistan.

1. Company Strategy [209]

At the start of its establishment, Unilever rapidly expanded worldwide, building strong management teams in developed and developing countries and often achieving market leadership. During the global expansion, supply lines were secured through vertical operations such as specialty chemicals for washing products, fragrances for deodorants and perfumes, plantations for tea products. The collegial style of organisation allowed more cohesion than a federation but power was decentralised and is more focused at country level. However, by the year 2000, global competition forced Unilever to re-focus on its core competencies of marketing and producing fast-moving consumer goods. The five-year strategy starting in 2000 was called ''Path to Growth'' and was aimed at accelerating the evolution from a diverse, fragmented group of local operating companies to a business with regional competitive strength. The vertical chemical, fragrance and plantations operations and many smaller businesses were sold and were replaced by strategic acquisitions such as American BestFoods, Slim Fast and Ben & Jerry's ice cream.

Due to declining market shares that hit the bottom line, in 2005 the management team of Unilever decided to seek a fresh approach. For the first time a single CEO replaced the co-chairmen governance. The new mentality of vitality also emerged from market opportunity and trends of healthy lifestyle in the developed world and innovative approaches in the developing world. On the other hand, the creation of "One Unilever" that replaced the traditional two-division structure mitigated the difficulties surrounding weak organisational execution. Methodologies such as Strategy into Action were also developed and applied to address the challenges faced by Unilever's management and strategy execution processes, which were often over-intellectual and under-actioned. Key business processes have also been gradually integrated into the execution process of important strategies and an emphasis has also been placed on employees' understanding of the company's strategic goals.

After the shift in Unilever's strategy, various positive outcomes were observed. First, there was marked improvement in collaboration and the negotiation process is no longer required as the understanding of the company's strategic goals has been enhanced. Second, functions become much clearer about the roles they play, their contributions and the way they interact with regions and categories. Third, as a visible difference between current and the past, the Unilever executive team has become much more diverse. Traditionally dominated by Anglo-Dutch nationals, the executive team now comprises three executives from America, two from India, two from France and one from Zimbabwe. Finally, economic improvement was also clearly visible. 15 continuous quarters of sales growth have followed the implementation of the new strategy, with underlying

sales growth of 7.4 percent in a static market in 2009. Despite the economic downturn in the third quarter of 2008, Unilever's sales growth continued upwards to 8.3 percent.

2. Innovation Networks [210]

At Unilever, about two per cent of annual turnover is invested in basic research and product innovations, leading to the filing of more than 400 patent applications annually. Research and development is at the heart of Unilever's differentiation. While R&D in Unilever was once characterized by major stand-alone laboratories where scientists worked in isolation from the businesses, it is now dedicated to a particular category, with innovation centres established in the core consumer locations to allow new ideas to flow quickly into the market. [211]

The company has a strategy that values and supports continuous development, and its innovation network fits ideally into the current initiatives. The network effectively links local communities of practice, focused on the tacit knowledge dimension, with the innovation process management (IPM) program aimed at the coordination of the innovation initiatives across the company and dominantly focused on providing information and explicit sources of knowledge. Due to its clear procedures, visible structure and constant promotion by top management, the program is appreciated on all organizational levels. As a company-wide, formal program, IPM serves, among others, as a well-tuned coordination mechanism. The tasks of the innovation network are to increase the transparency of existing innovation initiatives and increase the credibility of the company's innovation strategy through the direct involvement of employees in the process of selection and prioritization of projects.

On the other hand, Unilever also promotes innovation through activities such as creativity sessions during which participants will usually generate ideas that could be applied to solve a certain problem. A research conducted by Mostert (2007) has identified the ability of participants to think creatively, diversity of participants and the environment of creativity sessions as the core elements that has led to successful creativity and R&D at Unilever. In the R&D environment of Unilever, the creativity sessions typically result in (proposals for) new projects, products, patents and other opportunities. Another benefit of organizing a creativity session is that it results in a more creative attitude of team members. [212]

3. Labour Relations

a. Doom Dooma, India [213] [214] [215] [216]

In October 2007, the International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF) filed a complaint on behalf of the All-India council of Unilever Unions to the operations of Hindustan Unilever Limited. According to IUF's allegation, Hindustan Unilever's management at the Doom Dooma factory had failed to respect the right of their employees to be represented by a legitimate trade union, as the company had conspired to force employees to renounce their membership of the Hindustan Lever Workers Union (PPF), and instead join the Hindustan Unilever Democratic Workers Union, which, according to the IUF, had been established by the management following a lockout announced by management on 15 July 2007.

Unilever denied all of the IUF's allegations and argued that the Hindustan Unilever Democratic Workers Union was created by Doom Dooma's employees who believe that PPF's actions are illegal. Subsequently, the unions referred their complaint to the OECD's National Contact Point in the UK for investigation. Unilever reported that there had been major disorder at the Doom Dooma factory over a long period and in July 2007 a group of managers were detained by the workers against their will. Consequently, the management team imposed a lock-out in the aim to restore order. When the factory re-opened in September 2007, a majority of the employees then set up an alternative trade union to represent them. According to Unilever, this union was recognised by the Assam State Labour Commissioner. The new union reached an accord with the company in April 2008 and subsequently the situation at the factory stabilised.

After a series of meetings with the IUF and with the assistance of the National Contact Point's conciliation service, a methodology for resolving the issue was agreed between Unilever and the IUF in July 2010. According to the agreement, Unilever will establish a process for verifying union membership to the satisfaction of the IUF, the local trade union and the state government labour department. However, despite this agreement, IUF (2011) reports that almost one year since the IUF and Unilever formally concluded an agreement to settle the dispute under the auspices of the UK government, the workers in Doom Dooma are still waiting for their union to be recognized as their collective bargaining agent. The IUF suggested that by consistently refusing to implement an agreement signed by the IUF in good faith, Unilever has shown contempt for the Assam workers, for their union, for the IUF and for the UK National Contact Point and the IUF will take all necessary action in support of its members in Doom Dooma.

b. Pakistan [217] [218]

IUF (2008) reports that despite Unilever's claims to assist with combating child hunger in Pakistan, the company has often failed to provide a clear and unambiguous account for its employment statistics and practices in the country. In November 2007, the IUF submitted a complaint to the OECD on behalf of the Unilever Employees Federation charging the company with the abusive use of temporary work contracts to repress trade union organization at Unilever's Rahim Yar Khan factory. Unilever Pakistan Human Resources Director Mr Haroon Waheed wrote in October 2007 that the company employs directly and indirectly more than 8,000 people in 5 factories and offices throughout the country, out of which only 371 are directly employed by Unilever. This illustrates the company's heavy reliance on casual, temporary and agency workers, who are employed through labour hire agencies. This means that legally they do not work for Unilever, and despite performing the same tasks as other permanent employees, the casual workers have inferior pay and benefits to the permanent employees. In addition, since they do not work for Unilever, they have no right to form a union of Unilever employees and negotiate with the company in whose factories they produce the Unilever products.

Although the November 2007 Rahim Yar Khan complaint was withdrawn at the request of the local union, in November 2008 IUF submitted the complaint again on behalf of the Pakistan National Federation of Food & Beverage Workers, pointing out that Unilever Pakistan had unjustly dismissed 292 temporary workers upon their decision to join a trade union. Unilever Pakistan denied any breach of the OECD guidelines and claimed that the decision to not re-employ the temporary workers was part of the wider plans to re-organise the factory. Yet Unilever Pakistan agreed to cooperate with the OECD process and reached an agreement with IUF in June 2009. As part of the

agreement, Unilever Pakistan had clarified the minimum condition of employment and increased the number of permanent employment. [219]

On the other hand, IUF filed another complaint in March 2009 with the OECD in regards to Unilever's practices at Khanewal, Pakistan. IUF reported that Unilever's employment practices at its Khanewal factory have breached the workers' rights to freedom of association as well as fair pay. The Khanewal factory, which produces Lipton tea, only had 22 directly-employed Unilever workers while the other employees were all on casual or temporary contracts. Similar to those from the Rahim Yar Khan factory, these precarious workers at Khanewal were legally excluded from joining a union of Unilever workers and participating in a collective bargaining relationship with Unilever. Unilever, while pointing out that it is a common practice to employ temporary workers in Pakistan, agreed that the company's ratio of permanent to temporary workers was skewed and offered to increase the number of permanent contracts.

In October 2009, Unilever and the IUF reached a negotiated agreement under the OECD conciliation procedure and resolved the conflict. Under the terms of the settlement, Unilever has committed to investment and continued operations at the Khanewal factory and has agreed to create 200 additional direct, permanent positions, with job selection to be based on seniority and priority given to the members of the Khanewal workers' Action Committee. In addition, the selection and employment procedure will be jointly monitored and implemented by the IUF and Unilever at national level.

4. Brief Conclusion

In sum, it is clear that Unilever has a significant presence in the global market as well as various strengths. While it has faced challenges in the past decade, the company has successfully overcome the difficulties and further enhanced its performance through radical shifts in its strategies. Unilever has also applied several effective mechanisms, including an efficient network, innovation process management programme and creativity sessions, to increase the effectiveness of its innovation, research and development. However, perhaps due to its size, the company has also had several employment relations issues in the past few years. Through the cases lodged by IUF, it is clear that Unilever has to further improve the monitoring and management of human resources and employment conditions across all of its operations globally.

Arla Foods- Denmark/ Sweden

Abstract

Formed in 2000 through the merge of Danish MD Foods and Swedish Arla, Arla Foods is a Denmark-based dairy company and cooperative owned by over 7,000 Danish and Swedish dairy farmers. While its products are sold under well-known brands internationally, Arla's core markets remain in Sweden, Denmark, Finland, the UK, Germany and the Netherlands. Arla Foods produce dairy products including cheese, butter & spreads and milk and its three global brands are the Arla brand, the Lurpak brand and the Castello brand. Arla Foods is also the world's largest producer of organic dairy products. The company operates in 32 countries worldwide, with services and products delivered through its 38 offices, 50 dairy operations, 15 distribution operations and 4 ingredient operations. Arla Foods is jointly owned by milk producers in Denmark and Sweden and decisions are made through its district council system. On the other hand, global operations of Arla Foods are over-watched by five corporate functions that are responsible for both long-term development and operational support, while production, innovation and sales activities are handled by an additional four business groups. In 2010, a total of 16,215 employees are employed by Arla globally, with 67 per cent of the workforce in Denmark and Sweden. Arla has attempted to further understand and enhance the skills and well-being of its employees through activities such as leadership training programmes for middle managers as well as a colleague survey.

With a strong focus on research and innovation, Arla has three major innovation centres in Denmark and Sweden and two innovation satellites in United Kingdom and Finland. The company's research and innovation activities are organised into four interacting portfolio areas of research, technological development, new product development and radical innovation. Through these activities, Arla is providing the basis for competence development and knowledge transfer to the remaining innovation chain. It is clear that although Arla has already established a strong presence in Europe, it still needs to further expand and develop in order to become a truly global company. Activities that have already been undertaken include the reconfiguration of its IT network, identification of key development markets, acquisition of other companies as well as establishment of partnerships. On the other hand, while Arla was involved in the 2005/6 Middle East cartoon controversy and the 2008 Chinese milk scandal, the company was able to react quickly and make timely adjustments to remedy the adverse impacts. Finally, besides pushing its sales growth, the company has also made efforts to further pursue sustainability through investing in food safety, energy saving and community development.

General information

Formed in 2000 through the merge of Danish MD Foods and Swedish Arla,[220] Arla Foods is a global dairy company and cooperative owned by over 7,000 Danish and Swedish dairy farmers. Arla's headquarters are based in Århus, Denmark and its products are sold under well-known brands in more than 100 countries. Its core markets are Sweden, Denmark, Finland, the UK, Germany and the Netherlands. Arla Foods is also the world's largest producer of organic dairy products. Arla Foods is ranked seventh by both milk intake and turnover among dairy companies worldwide in 2010. [221] [222] The chronology below summarises the history of Arla Foods: [223]

1881: The first co-operative dairy is established at Stora Arla Gård in Västmanland under the name of Arla Mejeriförening.
1882: The first co-operative in Denmark is established in Hjedding.
1915: Arla's history begins when Landtmännens Mjölkförsäljningsförening is formed. The name is later changed to Mjölkcentralen (Sweden)
1970: Mejeriselskabet Danmark (MD) is established by four dairy companies and three individual dairies (Denmark)
1974: Registration of the name Mjölkcentralen Arla (Sweden)
1975: Mjölkcentralen changes name to Arla (Sweden)
1988: Mejeriselskabet Danmark (MD) changes name to international MD Foods (Denmark)
2000: Danish MD Foods and Swedish Arla ekonomisk förening merged to become Arla Foods
2006: Arla Foods purchases the privately-owned dairy Tholstrup Cheese, which in turn strengthens Arla's international brands
2007: Arla Foods merges with Express Dairies in the UK, and thus creating the UK's leading supplier of dairy products under the name of Arla Foods UK plc.
2009: Arla Foods acquires Fonterra's stake in joint venture.
2010: Arla Foods Ingredients won international recognition from the global research organisation Frost & Sullivan for excellent customer service and innovative products

Below are the key data of Arla Foods (as of 2010): [224] [225] [226]

Total annual revenue	DKK 49.0 billion (≈EUR 6.58 billion as of Aug 2011)
Revenue outside Denmark/Sweden	DKK 30.6 billion (≈EUR 4.10 billion as of Aug 2011)
Net profit	DKK 1.27 billion (≈EUR 170 million as of Aug 2011)
Number of owners	3,649 Danish and 3,529 Swedish dairy farmers
No. of Employees (Worldwide)	16,215
Weighed milk	8.71 billion Kg

Brands and Product Mix

Arla Foods produce dairy products including cheese, butter & spreads and milk (see Figure 1 for Arla's revenue by product group). Following are three of Arla's global brands:

The Arla brand - the company and its products
Arla is both a corporate brand and a brand across all product categories. One global Arla® brand covers all product categories and markets, including the home markets.

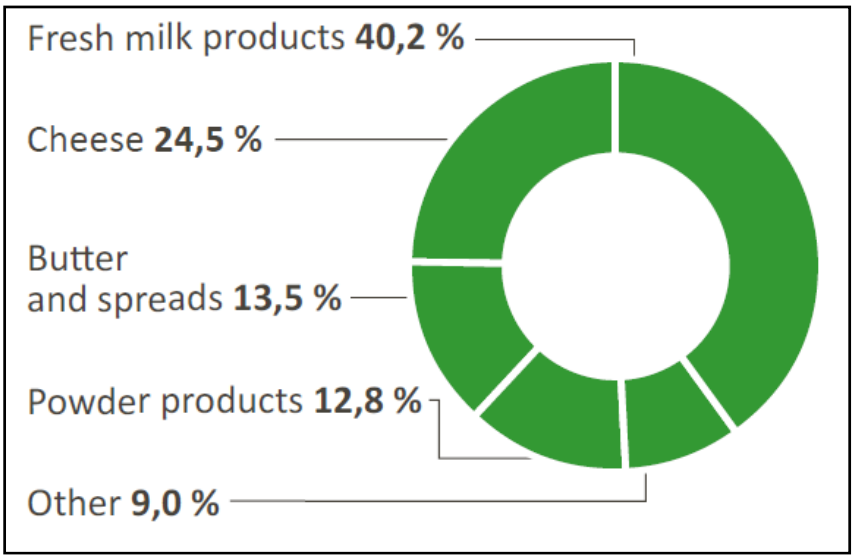
The Lurpak brand [227]
Lurpak is the leading brand for butter and spreads. The brand is already number one in the UK and Greece and the leading butter brand in Denmark. It will now be launched in more markets, including Sweden, Finland, Germany, Spain, Poland and Russia.

The Castello brand [228]
Castello is a leading cheese brand on a global scale and several of Arla's many speciality cheeses will come under this brand.

Other brands that sell products of Arla Foods include:

Cheese:	Butter & Spreads:	Milk:
Arla Apetina	Anchor	Lactofree
Arla Dofino	Arla Kærgården	Cravendale
Arla Finello	Lurpak	
Arla Havarti	Yorkshire Butter	
Arla Buko		
Lactofree		
Rosenborg		
Saga		

Figure 1. Arla's 2010 Revenue by Product Group [229]



Country focus and Partnerships [230]

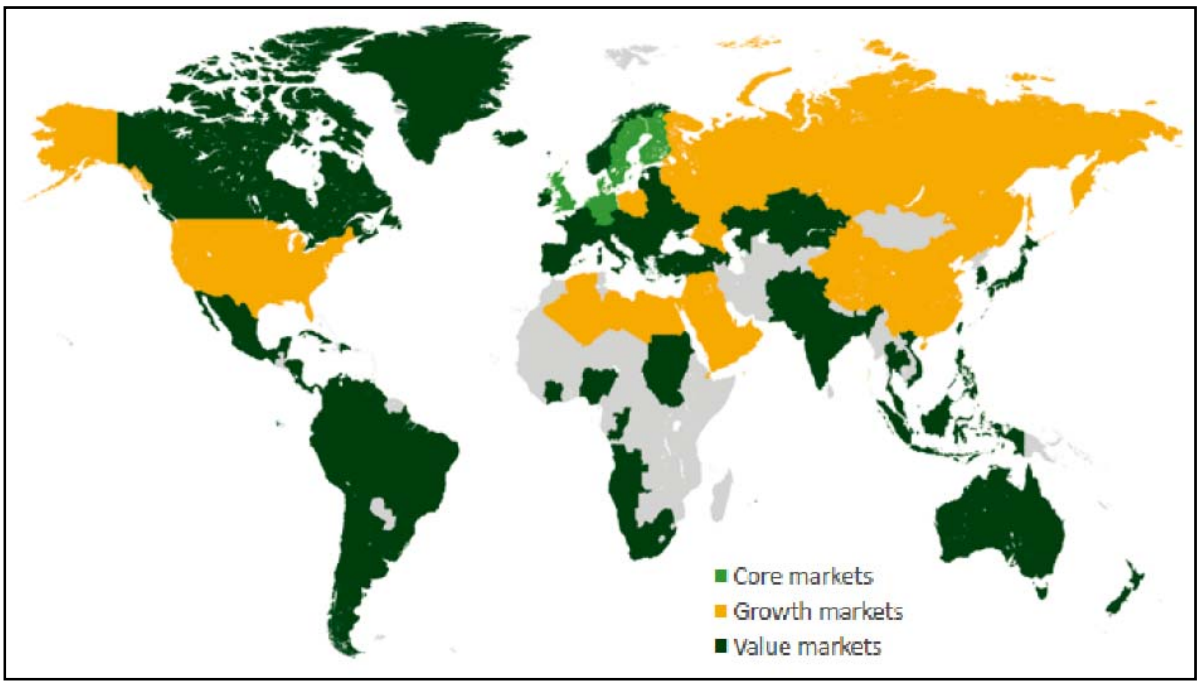
Three Market categories [231]

Arla operates in 32 countries worldwide; services and products are delivered through its 38 offices, 50 dairy operations, 15 distribution operations and 4 ingredient operations (see Table 1 for activities by country). Arla has identified three categories of market, including core markets, growth markets and value markets (see Figure 2). As of 2010, all of its **Core Markets** are located in Europe and the company aims to establish strong positions within the retail sector and promote both liquid milk and a range of dairy products. The core markets include Sweden, UK, Denmark, Finland, Netherlands and Germany (see Figure 3 for revenue by market).

A further six countries/ regions have been categorised under **Growth Markets**, where the company's key objectives are to increase the sustainability of growth and performance through merger, acquisitions and build category leadership positions. These markets include Russia, Poland, US, China and Middle East and North Africa Plans to promote Arla Food's Lurpak and Castello brands will also be set up at a local level in these regions.

The **Value Markets** include Canada, Spain, Greece, Brazil, Norway and other export markets. In these markets, Arla Foods is focusing on meeting targets of maximising profits, moving up the value chain (from bulk to value-added products) and seeking potential partnerships.

Figure 2. Worldwide Spread of Arla's Core, Growth and Value Markets [232]



2010 Main Activities, Reports and Developments [233]

- Europe (Core Markets)

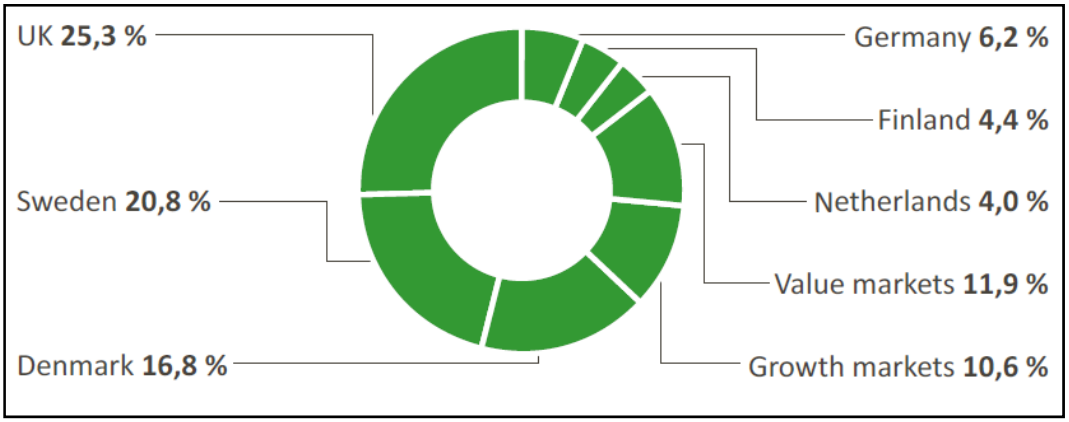
In 2010, Arla has decided to build the world's largest milk dairy, and this was to be located outside London. The UK is Arla's largest market, in which Arla is the second largest dairy company. Arla's investment in the new dairy, which will create a further 700 jobs and produce one billion litres of milk per auunm, will be around DKK 1.4 billion and should complete in 2012. In Sweden, Arla has launched a national strategy, which outlines the ways in which it would achieve the required level of growth within the framework of Strategy 2015. According to the strategy, Arla will further develop in Sweden through increasing its sales of value-added products launching new innovative initiatives.

Arla has also increased sales and market share in the UK, Sweden and German. Should the proposed merger with the German cooperative Hansa-Milch goes ahead, Arla's position in Germany will be further strengthened. There are still after-effects of the recession in Denmark and consumers continue to prefer lower-priced products. Also, Arla's profitability in Finland has not been satisfactory due to a 'price war' on milk and cheese. Despite these challenges, Arla has nevertheless succeeded in achieving its targeted 30 per cent market share.

- Growth Markets

Arla reports that a greater share of its profits will come from these markets in the long run, as these are the markets where there are significant growth potential. In the Middle East where a consumer boycott has taken place in 2005/6 (see commentary summary for more details), Arla has regained its market faster than expected. The level of sales in the Middle East has now returned to the same level as prior to the boycott.

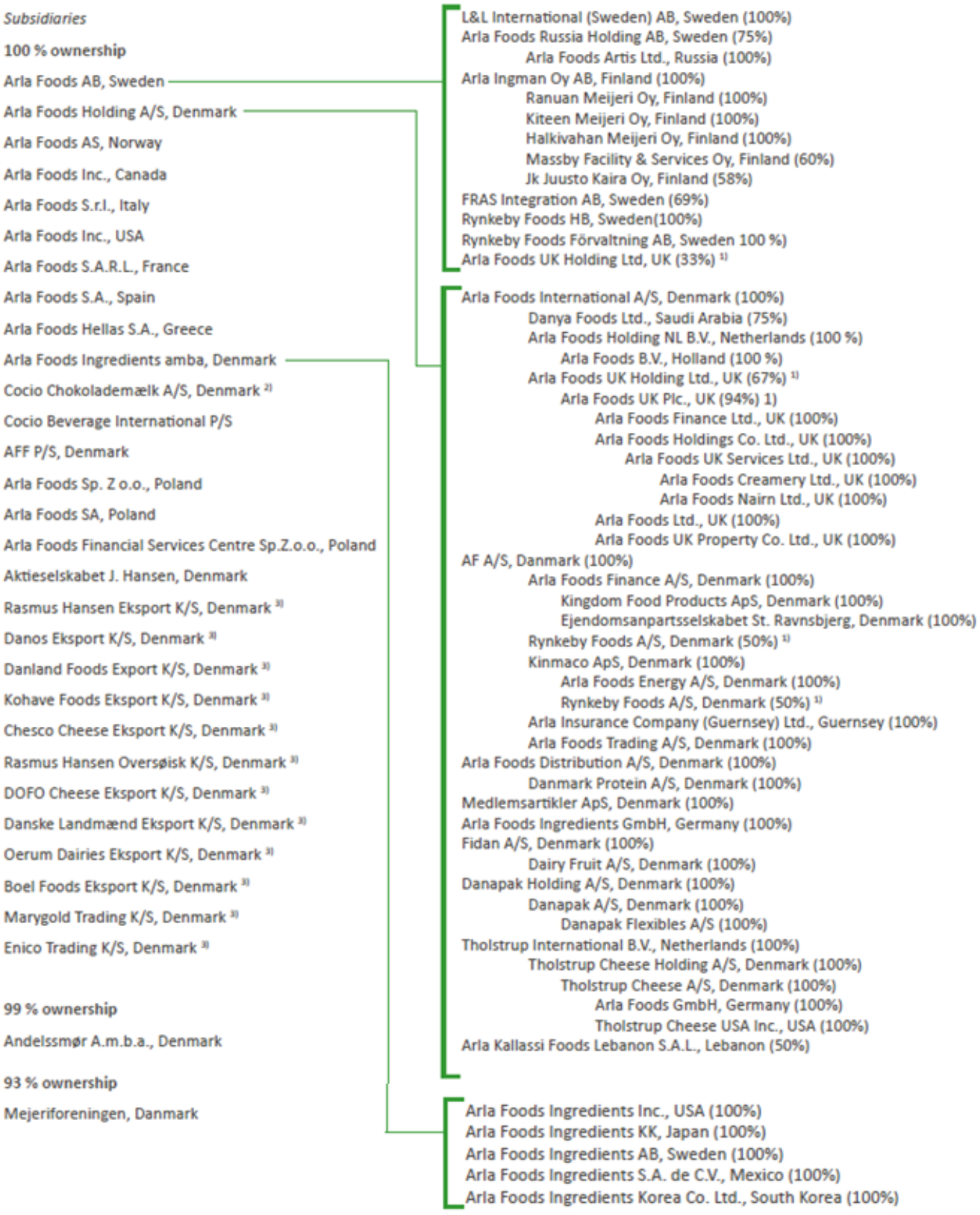
Figure 3. Arla's 2010 Revenue by Market



	Country	No. of office(s)	Dairy	Distribution	Ingredients
Europe	Denmark	2	21	2	2
	Estonia	1	-	-	-
	Finland	1	6	-	-
	France	2	-	-	-
	Germany	1	-	-	1
	Greece	1	-	-	-
	Italy	1	-	-	-
	Norway	1	-	-	-
	Poland	2	-	2	-
	Russia	2	-	-	-
	Spain	1	-	-	-
	Sweden	2	11	6	-
	The Netherlands	1	-	-	-
	United Kingdom	2	6	3	-
Middle East	Kuwait	1	-	-	-
	Lebanon	1	-	-	-
	Qatar	1	-	-	-
	Saudi Arabia	-	1	-	-
	United Arab Emirates	1	-	-	-
Asia-Pacific	Australia	1	-	-	-
	Bangladesh	1	-	-	-
	China	1	1	-	-
	Japan	1	-	-	-
	Korea	1	-	-	-
	Singapore	1	-	-	-
	Vietnam	1	-	-	-
Americas	Argentina	1	-	-	1
	Brazil	2	1	-	-
	Canada	1	1	2	-
	Dominican Republic	1	-	-	-
	Mexico	1	-	-	-
	United States	1	2	-	-

Table 1. Number of Office and Operations by Region and Country [234]

Subsidairies: The chart below depicts Arla's worldwide subsidiaries.



Employment [235]

As of 2010, a total of 16,215 employees make up Arla's workforce. 67 per cent of the workforce is employed in Denmark and Sweden (see Figure 4). Arla has attempted to further enhance the skills and well-being of its employees through three major activities, including the use of Lean to improve work satisfaction and efficiency, leadership training programmes for middle managers as well as the administration of a new colleague survey.

Lean improves efficiency and job satisfaction

Arla has adopted Lean as a method to develop business and make long-term decisions since 2009. The method focuses on change management and facilitates continual improvements through actively engaging employees. Activities include examining production processes in stages to better improve efficiency, resource utilisation and production capacity. As a result, increased productivity, better job satisfaction and fewer work accidents were soon observed in 2010. Consequently, Arla plans to employ more Lean coordinators and start introducing this system at more of its dairy operations.

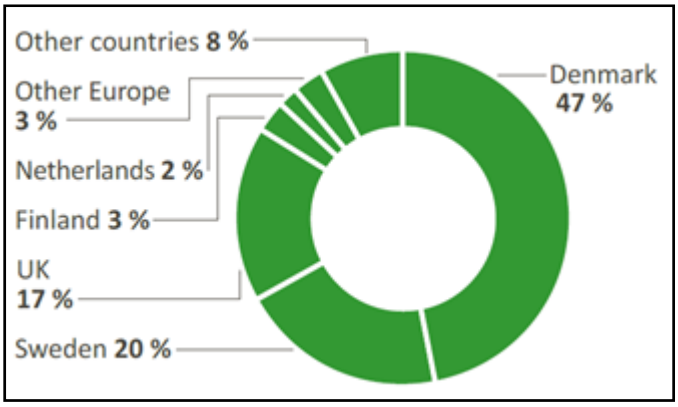
Leadership training for middle managers

In 2010, training was offered to middle and first line managers in Denmark, Sweden and the UK in the aim to help managers with better linking the cooperative's ambitious strategy for growth and their responsibilities. By the end of 2010, 80 managers have already completed and an additional 170 have begun Arla Leadership Programme training in Denmark and Sweden. Arla anticipates that about 200 managers will undergo ALP per annum in the next few years.

New colleague survey

In November 2010, a new version of Arla's global colleague survey, Barometer, was conducted and completed by 12,650 employees in 26 countries in 16 languages. The results for 2010 reflected continued positive development in overall satisfaction, high employee commitment and a good understanding of the company's objectives. Furthermore, survey participants rate Arla as a good place to work with 75 per cent saying that they would recommend Arla to friends and acquaintances. Two areas that require more improvement have been identified by the survey, including prevention of stress and workplace bullying.

Figure 4. Proportion of Arla's workforce by region/ country



Ownership and management structure [236]

Global operations of Arla Foods are over-watched by five corporate functions that are responsible for both long-term development and operational support, while production, innovation and sales activities are handled by four business groups (see Figure 5).

Corporate Centre and Global Business Services (GBS))

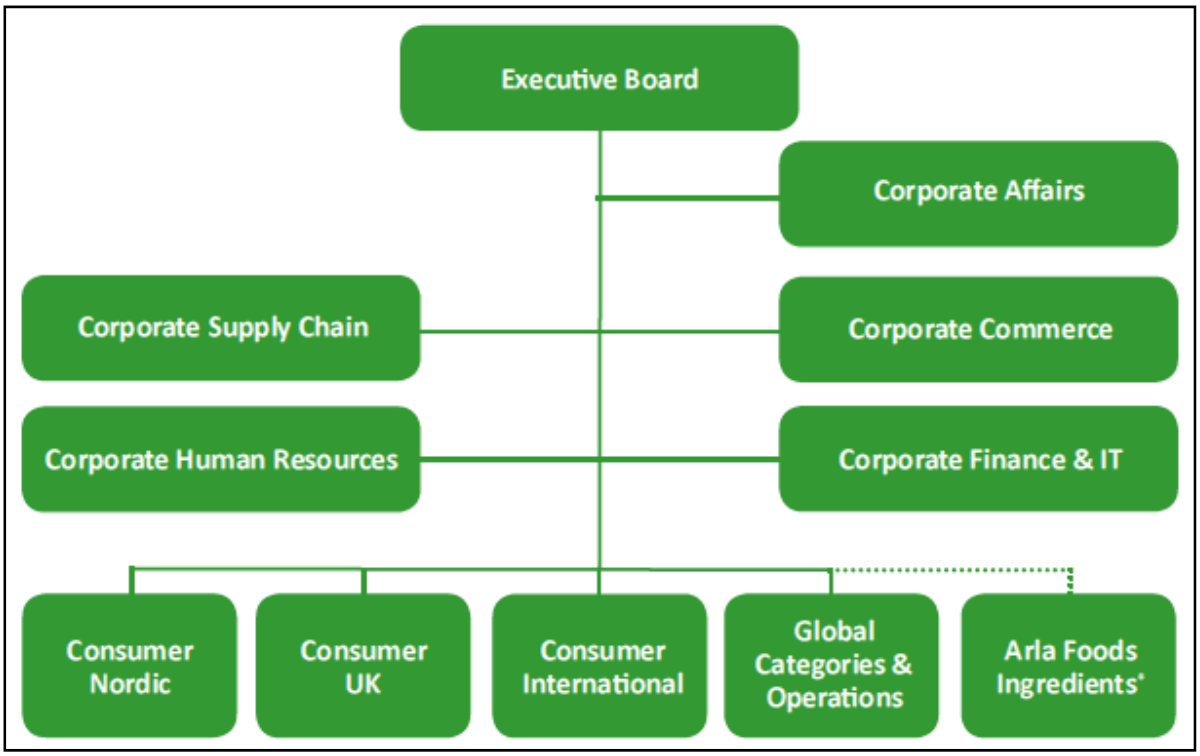
- **Corporate Affairs** – communication and group development
- **Corporate Supply Chain** – member service, technical issues, quality, environment, global procurement and investment
- **Corporate Commerce** –group marketing and trade-related
- **Corporate Human Resources** –colleague training and organisational development issues for the whole corporation
- **Corporate Finance & IT** –finance, IT and legal affairs

Business Groups

- **Consumer Nordic** – fresh products, cheese and butter for the nordic market, including the subsidiaries Cocio, Dairy Fruit and Rynkeby Foods
- **Consumer UK** – fresh products, cheese and butter for the UK
- **Consumer International** – fresh products, cheese, milk powder, butter and spreads for all markets outside the Nordic and UK markets
- **Global Categories & Operations** – development and production of butter and spreads, cheese and milk powder and multi-disciplinary research and development

There is also the Arla Foods Ingredients (subsidiary), which is in charge of milk and whey protein for all markets.

Figure 5. Organisation of Arla Foods



Ownership

Arla Foods is jointly owned by 7,178 milk producers in Denmark and Sweden. The company is divided into geographical areas: 24 districts in Sweden and 26 in Denmark. The company takes the form of a representative democracy with one vote for each co-operative. The districts are divided into seven regions, three in Sweden and four in Denmark. A district meeting, which is the district's supreme body, would take place once every year. The executive body of a district is the district council, which is elected during the district meeting. The members of the district council who are elected as members of the Board of Representatives represent the district at the Regional Board and on the Board of Representatives. Members are elected for two years at a time. See below for an outline of Arla's key governing bodies as well as their responsibilities respectively:

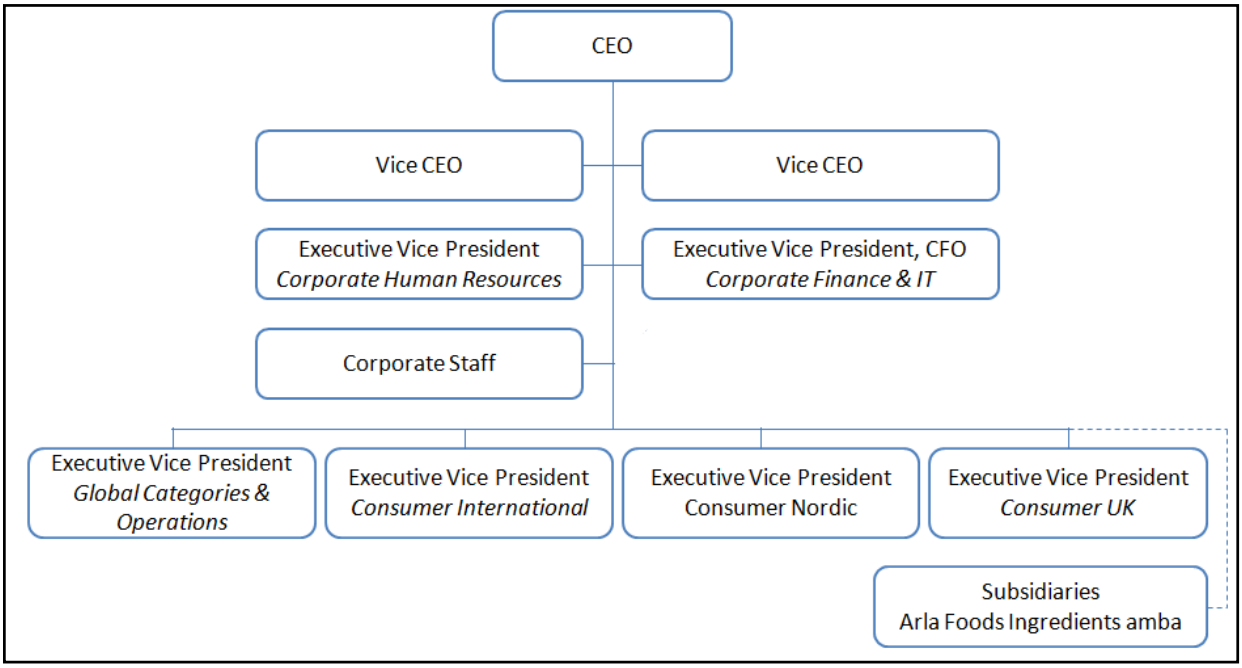
- **The Regional Board** consists of members of the Board of Representatives for the region and is primarily in charge of preparing and following up on issues considered by the Board of Representatives.
- **The Board of Representatives** is the company's supreme body with 150 members, of whom 140 are co-operative members including the district council chairmen and other members from most districts, while another ten are elected among the employees of Arla Foods in Denmark and Sweden. There are at least three meetings a year.
- **The Board of Directors** consists of 18 members, of whom eight are co-operative members from Denmark and six are co-operative members from Sweden. A further four members are employee representatives. The number of members is based on the volume of milk and the number of milk producers in the two countries. The Danish regions each appoint a member of the Board of Directors and the remaining Swedish and Danish members are elected by the Board of Representatives.

  The Board of Representatives and the Board of Directors make decisions relating to long-term strategic decisions. The Board of Directors also determines the on account prices while the Board of Representatives decide on the distribution of the profits for the year. Moreover, it is the Board of Directors' responsibility to monitor the company's activities and asset management, to maintain the accounts satisfactorily and to appoint the Management Board.
- **The Executive Management Board** (see Figure 6) is responsible for Arla Foods' day-to-day business operations and for preparing strategies and planning the future dairy structure.

New capital structure [237]

In October, the Arla Board of Representatives passed an important resolution which will increase the investment of cooperative members in the company, which will subsequently allow the company to better deliver its growth strategy and ultimately pay a higher milk price to the company's owners. Under the new capital structure 4.5 per cent (around double the previous amount) of Arla earnings will be invested in the corporation. Consolidation will increase Arla's equity by approximately DKK 4-4.5 billion over a six-year period. The extra capital will allow Arla to raise connection with acquisitions with more ease and it will also be used in connection with investments related to continued growth.

Figure 6. Executive Management Group [238]



Research and Development (R&D)

Research and Innovation [239]

Research and innovation is of fundamental importance to Arla Foods, and the company's innovation range covers milk-based products such as milks, yoghurts, desserts, cheeses, butters, spreads, soups, sauces, milk powders and milk-based food ingredients.

Arla's research and innovation activities are carried out at its three major innovation centres in Denmark and Sweden and two innovation satellites in United Kingdom and Finland. The company's research and innovation activities are organised into four interacting portfolio areas of research, technological development, new product development and radical innovation. Through these activities, Arla is providing the basis for competence development and knowledge transfer to the remaining innovation chain. Processes and technologies for dairy production are also developed, improved and tested while new products are developed to match current and future consumer needs.

Arla Foods sponsors and participates in a wide range of research projects. Arla provides most of the funds for some projects, while for others Arla provides partial funding together with other companies and stakeholders. See Figure 6 for examples of nutrition projects that Arla participates in. There are also several different types of collaborative partnerships that Arla engages in, including:

- Direct partnership between Arla and a research institution
- Projects where a major proportion of the funding comes from the Danish Agency for Science, Technology and Innovation within Food and Safety and the remainder derives from participating research institutions and companies
- Projects where around half the funding derives from the Danish Dairy Board's Research Fund and the remainder from public funds.

Research Platforms [240]

Arla Foods employs around 200 skilled individuals within the area of innovation that range from basic research to new product development. These research activities are organised within six major research platforms that represent significant elements in the milk value chain. These include:

- Milk composition
- Flavour and functionality
- Food safety
- Consumer preferences
- Process development and control
- Wellbeing

Each platform includes a research coordinator as well as key representatives from organisational units in Arla Foods. The research platforms value effective internal communication, agreement and coordination of research-based knowledge and needs.

Key focus areas [241]

There are currently three areas where Arla's research and innovation efforts are being focused on. These include:

Health

- Girlpower – Arla aims to develop some interesting products for the teenage girls who have stopped drinking milk, perhaps due to milk intolerance.
- Milk for life – to make milk attractive for consumers to continue drinking and eating dairy products throughout their lives.
- Milk's nutritional – to research the link between cow feed and the impact this has on milk's nutritional value.

Taste

- Better taste experience –to work pro-actively on providing consumers with an even better taste experience.
- Raw milk cheese –to develop raw milk cheese.

Organic

- Maintain the position as the world's largest organic dairy
- Continue to launch new organic products
- Continue to recruit more organic farmers. [242]

Figure 6. Examples of Nutrition Projects [243]

Title	Collaborative Partners/Partners	Period
FIAF - fasting-induced adipose factor (FøSu)	University of Copenhagen; Aarhus University; NIFES (Norway); University of Gothenburg (Sweden); Beijing Genomic Institute-Shenzhen (China) and Arla Foods.	2011 - 2014
Dairy health (FøSu)	Aarhus University Hospital; Aarhus University; Trinity College, Dublin, Ireland; Wageningen University, the Netherlands and Arla Foods	2011 - 2014
Step-by-step (FøSu)	Århus University, Copenhagen University and a number of companies	2007-2010
DanORC (FøSu)	Department of Preventive Medicine (Copenhagen University Hospital)	2007-2011
Vitamin D (MFF)	Technical University of Denmark + a number of companies	2009-2011
HealthCog (FøSu)	Århus University, Max-Planck Institute in Berlin	2009-2012
Lactobacillus F19 (AF)	KPL Good Food Practice AB in Uppsala, Umeå University	2008-2010
Food and Brain (AF)	Leeds University, UK	2009-2012
Enzymatic production of human oligosaccharides (FøSu)	Copenhagen University, Technical University of Denmark, University of Reading , UK + a number of companies	2010-2013
Functional foods for malnourished patients (AF + MFF)	Copenhagen University, Copenhagen University Hospital	2008-2010
Health promoting effects of milk derived products (MFF + FøSu)	Copenhagen University, etc.	2008-2010

Arla Foods- Commentary Summary

Created through the merge of Danish MD Foods and Swedish Arla in 2000, Arla Foods is now the world's seventh largest dairy companies by turnover.[244] Its annual sales were around EUR 6.58 billion in 2010, all of which were in the dairy sector.[245] The company produces dairy products including milk, butter and spreads and cheese. Although Arla Foods has operations around the world, its core markets still remain in Scandinavian and Western Europe countries currently. The current summary will provide an overview for Arla Foods' globalisation strategy, international public relations management and the case of 2005/06 Middle East crisis, the 2008 Chinese Milk Scandal, as well as the company's efforts .

1. Arla Globalisation and Growth Strategy

Being one of Europe's largest dairy producers, Arla Foods has over 30 systems operating in eight divisions. Due to the complexity in the management of the corporation, the ONE ARLA Project was launched in 2002 in the aim to simplify, optimize and integrate the company to function more effectively as one single global enterprise and ensure sustained profitability. Central to Arla's globalisation strategy is its focus on IT transformation. Business processes were harmonised through this project and an enterprise software programme was implemented to better support the new business model. This strategy will integrate the IT systems, plant floor information systems, work processes and data to create a more synergised business. Individual Data Warehouses with more than 280 overlying reporting solutions were replaced by one common Enterprise Data Warehouse and Business Intelligence system, which were already serving the company's 1500 users by spring 2006. Arne Svendsen, production IT manager at Arla Foods highlighted that as Arla Foods has an expansive growth strategy, it is a of great significance that the business and manufacturing functions are effectively integrated, especially when the existing corporation is joined by new facilities as results of mergers and acquisitions.[246] [247] [248]

Arla's five-year global strategy for the business published in 2008 announced that it will place its focus on fewer markets while making greater investment in product innovation and consolidating its brands to form three strong, global brands including the Arla, Castello and Lurpak brands. Three "seed" markets for particular attention have been identified as markets that would potentially contribute to the company's international growth. These countries are the US, where the company has a developing cheese market, Russia, where Arla has a new but growing cheese and butter venture, and China, where the group runs a joint-venture with local dairy group Mengniu. Despite the melamine scandal in 2008 (which will be discussed in further detail later in this summary), Arla remains rather positive about the future outlook of the Chinese dairy market. [249]

Arla seeks to develop its business through various activities, including consolidation of various diverse practices, expansion of existing production, merger, joint-venture and acquisitions and partnerships. In 2010 the company has benefitted from the rise of commodity prices and exchange rates as well as its cost-cutting strategy and was able to increase its profits while also expanding in the European region. Investments were made to increase production in cream, creme frache,

cottage cheese and to further promote brands such as Lurpak, Anchor, Lactofree, the dairy alternative product range, and Cravendale milk. [250] Also in 2010, Arla UK announced that it was to become a shareholder with First Milk and Milk Link in Westbury Dairies Limited and will consolidate its production of butter at Westbury Dairies from August 2011. [251] Furthermore, Arla's dairy expansion in Hollandtown, Wisconsin is set to complete in summer 2011 in the aim to match American consumers' growing demand in premium cheese. [252] In April 2011, Arla has decided to consolidate and upgrade its yellow cheese production plants at Nr. Vium and Taulov in Denmark in order to secure the company's future yellow cheese production at more competitive prices. [253]

Arla's other recent activities in Europe include its merger with German Hansa-Milch Mecklenburg-Holstein eG and a 50/50 percent whey processing joint venture with German DMK to form ArNoCo GmbH & Co. KG. After the merger, Hansa-Milch Mecklenburg-Holstein eG becomes Hansa Arla Milch eG and allows both companies to offer a range of different dairy products, which may in turn attract more German retailers. [254] On the other hand, ArNoCo GmbH & Co. KG will start constructing a new plant in October 2011 and the plant, which will offer a further 24 jobs, should start operating by the end of 2012. An estimated 700,000 tonnes of whey per year bought from DMK will be processed into lactose and whey protein concentrate at the new plant. DMK will also be supplying all related services on behalf of ArNoCo, while Arla Foods will be in charge of drying the Whey Protein Concentrate as well as marketing, selling and distributing the products to the global food manufacturing industry. [255] In June 2011, there are also discussions of a merger between Arla and Swedish Milko, as Milko's financial situation has become critical and the company is seeking assistance to avoid future possibilities of liquidity. [256]

Within the past few years, Arla Foods has also expanded its operations in the US in order to secure further milk supply and meeting increasing demand. Although Arla has already entered the US market through its purchase of a cheese plant in Wisconsin, a further $15 million investment in the cheese plant was made in 2008 with an objective of doubling its production capacity. In addition to the Wisconsin plant, Arla also owns a plant in Muskegon, Michigan and the two plants together produce 70% of Arla's US sales, while the other 30% are imported from Denmark.[257]

2. International Public Relations Management- The 2005/06 Middle East Crisis

Arla Foods has undergone a major crisis in early 2006, when its sales in Middle Eastern countries plunged rapidly as a result of satirical cartoons of Muhammed published in Danish newspaper Jullands-Posten on September 30, 2005. Prior to this crisis, the Middle East was the company's largest expansion market and has been listed as the area that would be prioritised through significant investment and increase in production due to its rapid sales growth in 2004 and 2005. As part of the significant investment, three new joint ventures in Lebanon, Qatar and Kuwai have only just been announced before products from Arla were totally boycotted by Arab consumers due to Danish government's refusal to take responsibility or sanction the newspaper. In early February 2006, the company noted that its sales in the Middle East, which has taken the corporation and its predecessor 40 years to build up, had come to a complete stop and was costing the company US$1.8 million per day. This marks a rather remarkable case in international public relations

practice, as Arla Foods faced a major crisis not through any actions of its own but because of its national identity.

In an attempt to redress the situation, Arla apologised for the cartons and declared the company's respect for Islam in the country through a full-page advertisement in Saudi Arabia, apologizing for the cartoons and indicating Arla's great respect for Islam in the country. However, this raised legitimacy controversy back at home in Denmark, where the company was strongly criticised by various opinion formers and women's organisations, who accused Arla of succumbing to forces which are contradicting Danish values. Nevertheless, Arla's campaign produced results in the Middle East and the company announced that its products are back in stores in the Middle East in April 2006. Holmström, Falkheimer & Gade Nielsen (2007) suggest that as a result of this crisis, Arla Foods is now making more efforts to understand the markets outside Scandinavia. For example, executives from all subsidiaries are being requested to present their reports on local issues, which would in turn allow the executive management group to decide upon the future global drivers and then devise the company's overall approach to sensitive global issues.[258] [259]

3. Chinese Milk Scandal

The outbreak of tainted milk samples in China in September 2008 has affected Arla Foods, as the company had a joint venture with Mengniu, one of the implicated companies in China. Mengniu Arla started back in 2006 as a joint-venture company, with Arla holding 48% of the stock. When signs of polluted milk surfaced, and being aware of the impending crisis, Mengniu Arla executed a number of important actions quickly, including recalling all of its products and notifying consumers compensation would be made at twice the recommended amount to those who were affected by melamine tainted milk. New testing equipment that could detecting melamine in the milk was also ordered by Arla and production testing system was implemented with even more rigor.

Strange (2008) suggested that some attributed this crisis to the company's structural deficiencies, as there is a lack of an effective and effective regulatory system, in addition to a rather fragmented system of milk supply (mainly by small family-driven farms). Subsequent to the Milk Scandal, sales of Mengniu Arla decreased to a mere 30% of normal sales and consumer confidence has significantly declined. As of March 2011, the confidence of Chinese consumers in locally produced milk products was still relatively low despite the country's efforts to ensure the standards of its dairy products. [260] [261]

4. Sustainability Efforts [262]

Arla Foods has made investments and led initiatives in the aim to ensure food safety, enhance environmental sustainability and also engage in community development. Arla's efforts of further improving food safety are reflected in its activities including employee training to handle critical incidents at a dairy, hygiene and food safety, as well as increased monitoring of packaging material to ensure requirements are met. In order to improve the eco-efficiency of its practices, Arla has set a target to reduce its carbon footprint throughout supply chain activities by 25 percent before the end of this decade (2020). Other activities such as researching, partnering with university faculty

and technology provider to strengthen the company's understanding of sustainability issues and sharing best practice with its suppliers have also been undertaken.

Arla is also committed to the development of local communities where its products are sold. The company is currently running a long-term and structured charity project called "Children for Life" in the Dominican Republic, Vietnam and Bangladesh. Through working with cooperative partners including SOS Children's Villages International, Welfare Organisation and local charity, nutritional products are provided and contributions to children's educational needs are also made by Arla's support to local schools.

5. Brief Conclusion

In sum, it is clear that while Arla's operations are spanning across many countries, the company's key markets still remain in Europe. Arla is now undertaking various activities that will allow it to strategically expand further into other markets that have growth potential. This review has evaluated Arla's growth strategy and outlined various actions the company has taken to further globalise, including the reconfiguration of its IT network, identification of key development markets, acquisition of other companies and establishing partnerships. Arla's involvement in the 2005/6 Middle East cartoon controversy and the 2008 Chinese milk scandal has also been reviewed. Despite the initial negative effects experienced by the company, Arla was able to react quickly and make timely adjustments to remedy the adverse impacts. Finally, the company's efforts to further ensure safe practices and pursue sustainability have been reviewed and summarised.

Dairy Farmers of America- USA

Abstract

With its headquarters in Kansas City, Missouri, Dairy Farmers of America (DFA) is a farmer-owned milk marketing cooperative formed through the merger of four dairy cooperatives in 1998. DFA purchases raw milk from its members and sells milk and derivative products, including dairy products, food components, ingredients, and shelf-stable dairy products, to wholesale buyers. Although the cooperative mostly operates within the United States of America, it is the world's second largest milk processor by milk intake. Today, DFA is USA's leading milk marketing cooperative and dairy food processor. Through DFA's Global Dairy Products Group (GDPG) commercial division, the cooperative manufactures cheese and butter, as well as dairy ingredients, and is also a contract manufacturer for consumer products. DFA engages in various value-adding activities including marketing consumer brands, investing in dairy processing plants, as well as establishing supply agreements with national and global customers. The milk produced by DFA's members also gets delivered to various customers and partners such as Roberts Dairy, Hiland Dairy and Dean Foods. On the other hand, through engaging in the DairiConcepts joint venture with New Zealand dairy giant Fonterra, DFA was able o combine its manufacturing sites with Fonterra's technological innovations and advanced research and development to offer a wide array of cost-effective products and services.

DFA is divided into seven areas and the areas are organised into districts in which members elect representatives to serve on their governing Area Council. Area Councils monitor the marketing of milk and local issues. The seven areas include the Central Area, Southeast Area, Mideast Area, Southwest Area, Western Area, Mountain Area and Northeast Area. DFA is over-watched by its Board of Directors and its daily activities are managed by a number of operational divisions. According to DFA, as owners of the cooperative dairy farmers receive a number of benefits including earnings from the Cooperative, an equal voice, a guaranteed market and competitive price for their milk, a competitive price for their milk, various programs and services, as well as returns on investments made on their behalf. However, despite these claims, DFA has faced various criticism and issues in the past few years. Some have pointed out that while DFA is alleging to be farmer-owned, the financial gains remain in the hands of business partners and the executives. There were also dairy farmers who report that they were not informed with the ways in which money of the cooperative was spent. There were arguments accusing DFA of dairy market manipulation and in 2008, a few of the cooperative's former executives have been charged with attempts to manipulate milk price. Nevertheless, despite these controversies, in recent years DFA has been working to enhance its transparency and coordination.

General information

With its headquarters in Kansas City, Missouri, Dairy Farmers of America (DFA) is a farmer-owned milk marketing cooperative formed through the merger of four dairy cooperatives, including the Southern region of Associated Milk Producers Inc., Mid-America Dairymen Inc., Milk Marketing Inc, and Western Dairymen Cooperative Inc in 1998. DFA purchases raw milk from its members and sells milk and derivative products, including dairy products, food components, ingredients, and shelf-stable dairy products, to wholesale buyers. [263] Although the cooperative mostly operates within the United States of America, it is the world's second largest milk processor by milk intake. [264] See below for an overview of DFA's corporate history: [265]

1996: Leaders from four of the nation's leading milk cooperatives first gathered to discuss possibilities of consolidation.

1998: DFA was formed on 1 January.
Since then, four more cooperatives merged into DFA – Independent Cooperative Milk Producers Association, Valley of Virginia Milk Producers Association, Black Hills Milk Producers and California Cooperative Creamery (Cal-Gold).

1999: DFA and Dairylea, a member cooperative of DFA, partnered to create Dairy Marketing Services (DMS). DMS markets milk for both independent producers and cooperative members. Originally formed to give producers in the Northeast a better return for their milk, DMS is now a national organization.

Today, DFA is USA's leading milk marketing cooperative and dairy food processor. In a report published in 2010 by Rabobank Group, the Dutch financial services provider, Dairy Farmers of America is ranked eighth by turnover among dairy companies worldwide[266]. Below are the key data of DFA (2009 Data): [267]

Annual Turnover	USD 8.1 billion (≈EUR 5.68 billion as of Aug 2011)
Milk Marketed Annually	63 billion pounds (≈28.6 billion Kg)
Market Share of World Milk Production [268]	2.5%
Number of Member Farms	9,572
Market Share of USA Milk Supply	20%
Milking Herd (Member Farms)	1.8 million
No. of Employees	3,725
No. of Voting Members	16,837
Manufacturing Plants Owned by DFA	21

Product mix [269]

Through DFA's Global Dairy Products Group (GDPG) commercial division, the cooperative manufactures cheese and butter, as well as dairy ingredients, and is also a contract manufacturer for consumer products. DFA engages in value-adding activities including:

- **Marketing consumer brands**, including Borden® Cheese and Keller's® Creamery
- **Investing in and maintaining dairy foods processing plants** that produce American and Italian Cheeses and a wide range of dairy ingredients
- **Engaging in investments and joint ventures** with national companies
- **Establishing supply agreements** with national and global customers.

DFA has an expansive manufacturing strategy. In addition to its own plants, the milk produced by its members gets delivered to various customers and joint venture partners such as Roberts Dairy, Hiland Dairy and Dean Foods. In 2010, through the purchase of Houston based Castro Cheese, DFA have expanded into the growing Hispanic cheese market. [270] DFA manufactures and markets several well-known, high-quality brands found in grocery stores throughout America. Products manufactured or marketed by DFA's Consumer Brands business include:

- **Borden Cheese**: Shreds, chunks, string and slices; processed slices
- **Cache Valley Cheese**: Shreds, chunks, string and slices; processed slices
- **Keller's Creamery Butter:** Sticks, whipped, spreadable European style
- **Plugrá Butter:** A European style butter with low moisture and creamy texture
- **Breakstone's® Butter:** Kosher quality butter

DFA manufactures and sells a variety of dairy through its Ingredients business. Some examples include nonfat dry milk powder, skim milk powder and sweetened condensed milk. These ingredients are often used to manufacture products such as baby formula, ice cream and flavored dairy beverages. In addition, award-winning American and Italian cheeses are also provided for national and local distributors, food wholesalers and restaurant chains.

In addition to manufacturing and marketing its own products, DFA is also involved in contract manufacturing business, which develops and tests new food products for customers throughout the country. DFA's plants utilise state-of-the-art retort technology to make shelf-stable consumer products, including sport drinks, coffee-based flavored drinks, cheese powders and flavors, infant formula, sour cream and cheese dips for well-known brands.

At DFA's state-of-the-art Technology Center in Springfield, Mo., staff members including top food scientists and engineers work closely with DFA customers as they develop and test new food products and create innovative packaging. DFA's scientists not only conduct research and development, but are also essential to the success of the final product. DFA's flexible manufacturing capabilities also allow the cooperative to produce products in packaging such as steel, aluminum, glass and plastic. [271]

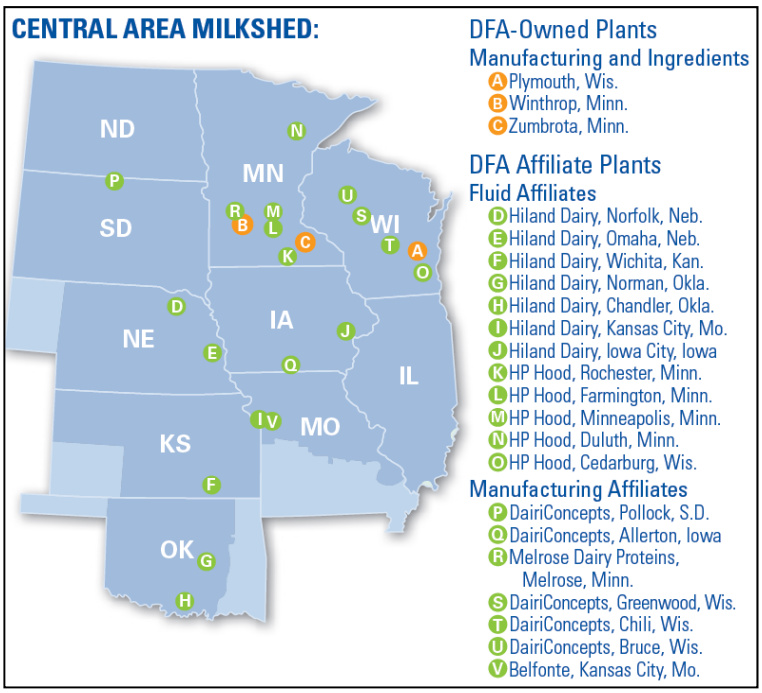
Regional focus [272]

Although DFA is a national milk marketing cooperative, it is divided into seven Areas, ensuring grassroots representation of its members. Areas are organized into districts, in which members elect representatives to serve on their governing Area Council. Area Councils monitor the marketing of milk and local issues. Representatives from Area Councils are elected to serve on DFA's Board of Directors, which is comprised of 51 dairy producers who guide the Cooperative and establish policies and business direction.

Central Area [273]

- 2 million pounds of milk produced on average each year per member
- 32 districts
- 2,872 member dairy farms
- 5.8 billion pounds of milk annually

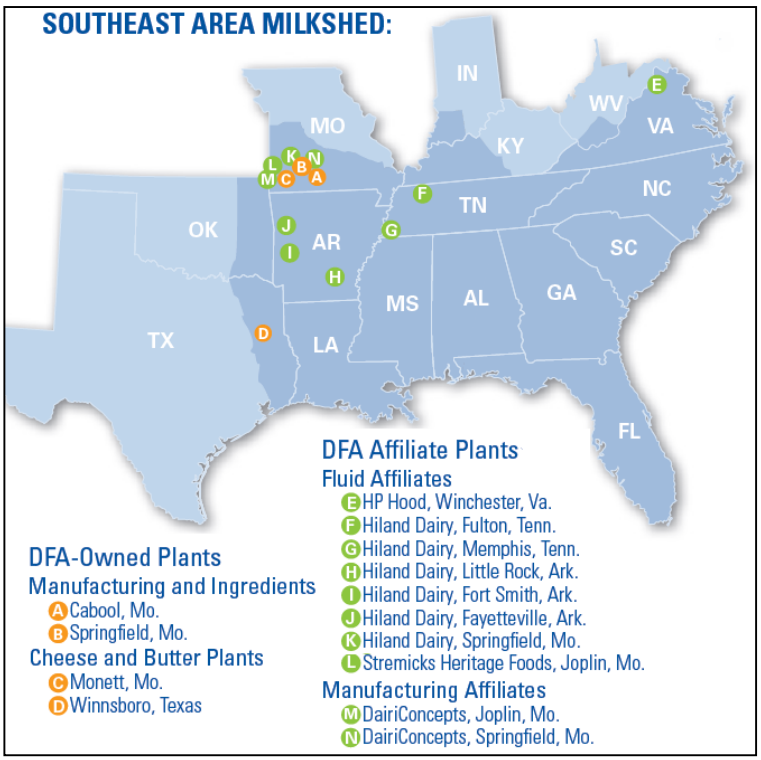
Milk provided for:
- Dean Foods
- Foremost Farms
- Hiland Dairy
- Kemps
- Leprino
- Melrose Dairy Protein
- Prairie Farms
- Roberts Dairy
- Saputo Cheese



Southeast Area [274]

- 2 million pounds of milk produced on average each year per member
- 35 districts
- 2,812 member dairy farms
- 4.3 billion pounds of milk annually

Milk provided for:
- Dean Foods
- Hiland/Turner
- Kraft
- Kroger
- LALA

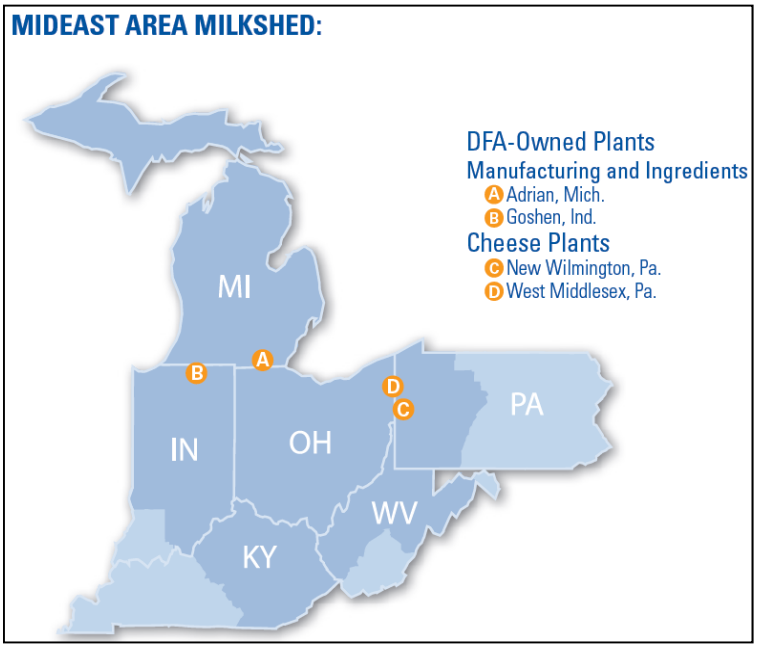


Mideast Area [275]

•2.5 million pounds of milk produced on average each year per member
•18 districts
•1,969 member dairy farms
•5 billion pounds of milk annually

Milk provided for:

- Bareman's Dairy
- Dannon
- Dean Foods
- General Mills
- Kroger
- Leprino
- LALA
- Nestle

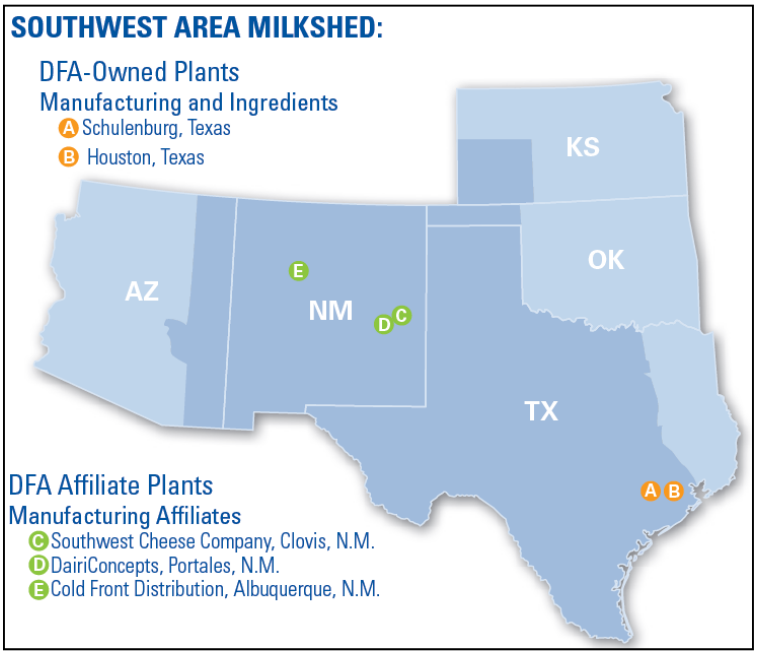


Southwest Area [276]

•23 million pounds of milk produced on average each year per member
•20 districts
•349 member dairy farms
•8.3 billion pounds of milk annually

Milk provided for:

- Blue Bell
- Borden
- DairiConcepts
- Daisy Brand
- Dannon
- Southwest Cheese
- J.M. Smucker
- Leprino
- Oak Farms Dairy
- Schepps Dairy
- F&A Cheese

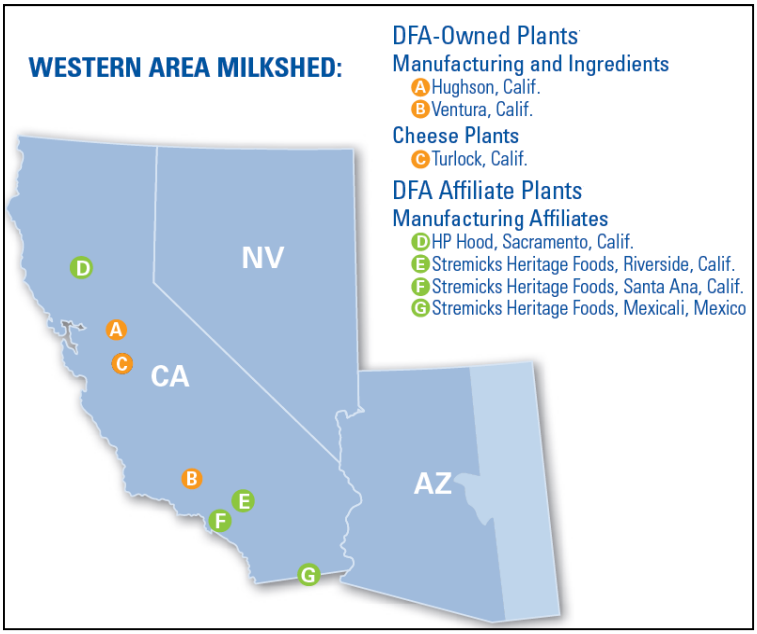


Western Area [277]

•18 million pounds of milk produced on average each year per member
•9 districts
•332 member dairy farms
•6 billion pounds of milk annually

Milk provided for:

- Dean Foods
- Stremicks
- HP Hood
- Super Store Industries
- Leprino
- Foster Farms
- Kraft

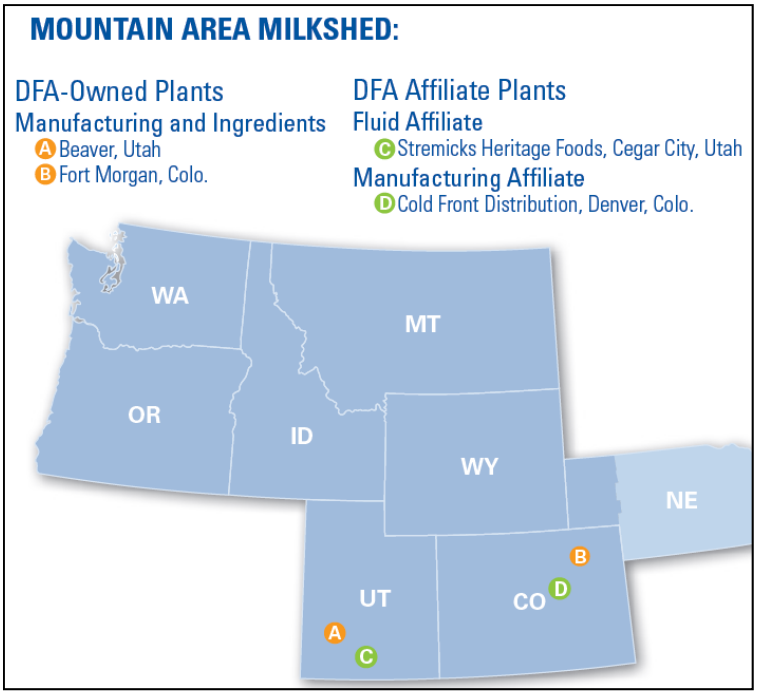


Mountain Area [278]

•15.6 million pounds of milk produced on average each year per member
•19 districts
•345 member dairy farms
•5.4 billion pounds of milk annually

Milk provided for:

- Brewster Dairy, Inc.
- Dean Foods
- Glanbia
- Safeway Foods, Inc.
- Sorrento Lactalis
- Kroger
- LALA
- Leprino

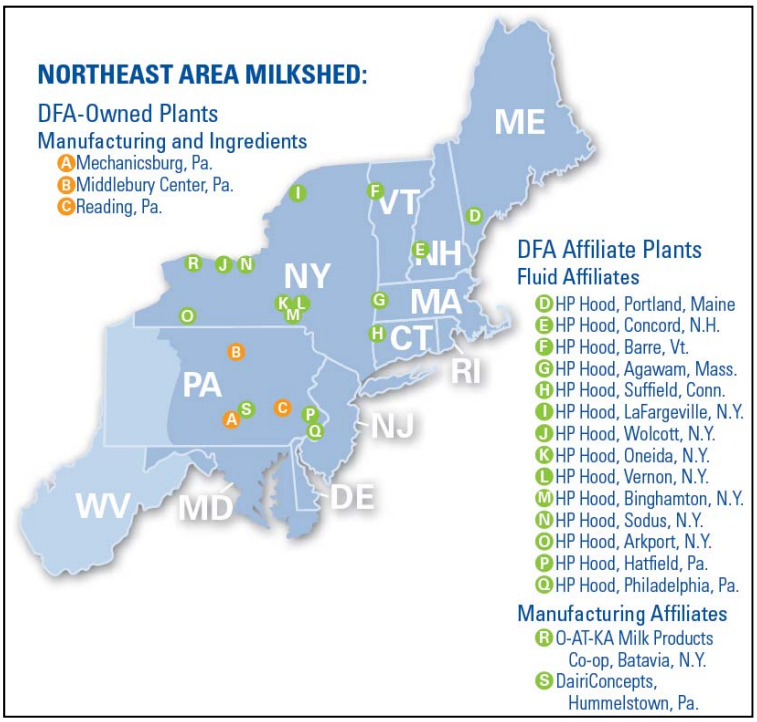


Northeast Area [279]

•1.9 million pounds of milk produced on average each year per member
•14 districts
•1,577 member dairy farms
•3 billion pounds of milk annually

Milk provided for:

- Agro Farma, Inc.
- Dean Foods
- Farmland Dairies
- Great Lakes Cheese
- Hershey Foods
- HP Hood
- Kraft
- Leprino Foods
- Sorrento-Lactalis



Partnerships

DairiConcepts- Joint Venture with Fonterra [280] [281]

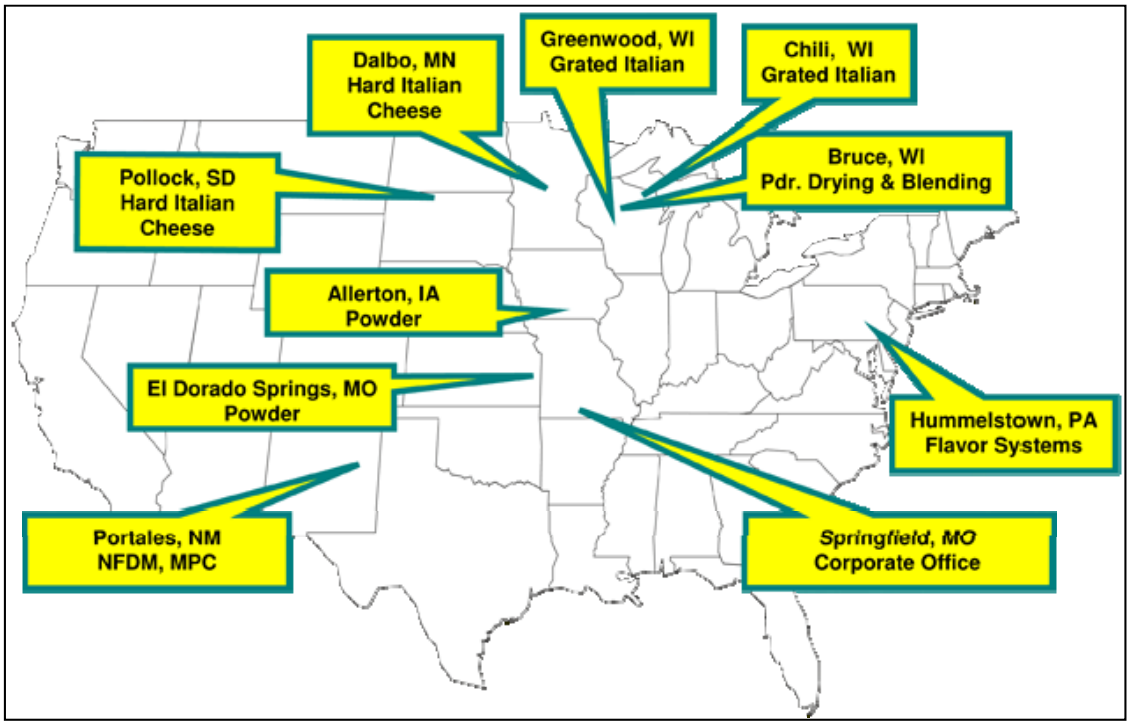
DairiConcepts is the joint venture between Fonterra, a New Zealand based dairy cooperative, and Dairy Farmers of America. The joint venture was established in May 2000, although the first joint venture between the two companies, Greenwood Valley Cheese, dates from 1998. Greenwood was incorporated into DairiConcepts in January 2003.

DairiConcepts combines DFA's manufacturing sites with Fonterra's technological innovations and advanced research and development, and utilizes its resources to offer a wide array of cost-effective products and services to its customers. Through innovative applications work and access to basic dairy research, DairiConcepts develops tailored solutions to meet its customers' needs.

The 50:50 joint venture manufactures and markets a wide range of products, including specialty powders for infant formula, high-end cheese powders for use in specialty dry blending, snack seasoning, prepared foods and food service. The joint venture has also invested to produce Milk Protein Concentrate in the US.

DairiConcepts employs close to 300 people in several locations across the US and expects to record sales of nearly US$300 million in 2003 (see Figure 1 for an overview of Dairiconcepts locations). Customers include Nestle, Frito-Lay, Kraft, Unilever and Mead Johnson. Now operating its own cheese production facility in Pollock, South Dakota, DairiConcepts vertically integrates everything from raw materials to finished ingredients.

Figure 1. Geographical locations of DairiConcepts [282]

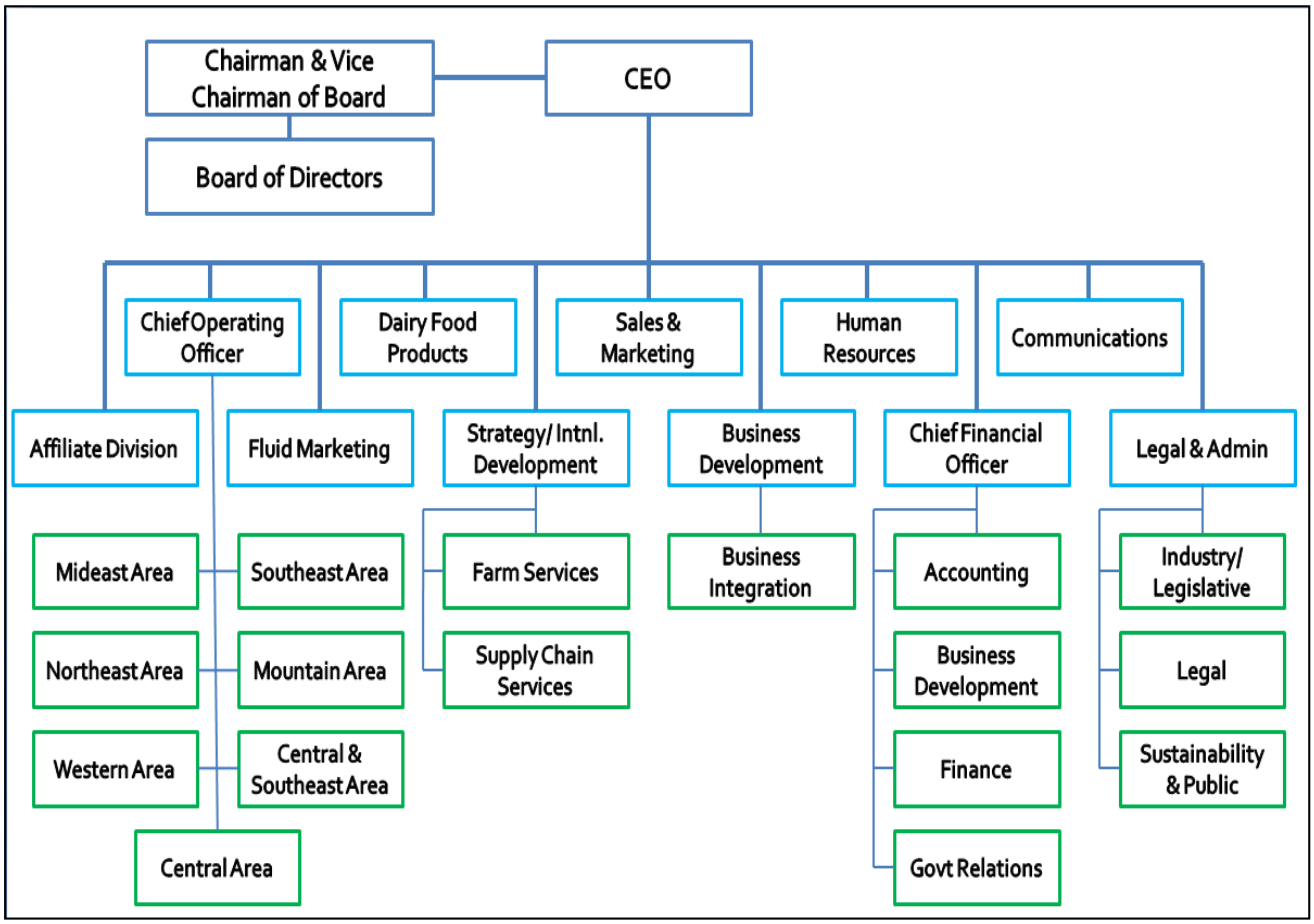


Ownership and management structure[283] [284]

The DFA Board of Directors is made up of 51 Board members who are elected by members in their Areas (Three members represent cooperatives that are members of DFA). Every year, members at the local level elect dairy farmers to represent them in DFA's leadership and governance structure. DFA's Board represents the interests of the member-owners, which are located within DFA's seven geographic marketing areas. Board members provide direction, set policies, establish financial structure, approve capital budgets, and establish duties and responsibilities for DFA's governance structure. Within the Board, seven officers, who are the elected chairs of their Areas, serve as the Board's Executive Committee. DFA's directors are elected to serve two-year terms, which are staggered so that only a portion of the board is up for election annually. On the other hand, seven regional Area Councils give DFA members representation in their local markets.

The organisational chart below illustrates DFA's corporate governance structure: [285]

Figure 2. Organisational structure of Dairy Farmers of America



Company strategy

DFA has identified six values in particular that provide guidelines and objectives to its everyday activities. [286] These include:

- **Integrity:** To act ethically in all matters without exception.
- **Accountability:** To deliver its commitments and being responsible for its actions.
- **Community**: Committed to serving, leading and educating in the communities in which the cooperative lives, and is connected to the greater agricultural community in which it operates. Through the DFA Cares Foundation, the cooperative provides relief and education to those in its communities.
- **Innovation:** To support an innovative environment where employees are encouraged to take appropriate risks and challenge the status quo.
- **Quality:** Committed to quality – the quality of its products, its services and its way of doing business.
- **Passion:** Being passionate about the farmer-owners the cooperative works for, the dairy industry, and about supplying the nation and the world with safe, nutritious products.

Membership [287]

Membership in DFA connects nearly 16,000 dairy producers in 48 states and the members range from an Amish farm in Pennsylvania with 50 cows to a 3,000-cow dairy in California. DFA believes that dairy producers are not just members of DFA, rather, they are owners. As owners of DFA, members receive:

- **Earnings from the Cooperative.** Profits are shared through annual patronage dividends based on member's patronage (volume) in DFA.
- **An equal voice.** Through DFA's grassroots structure, each and every member is empowered to influence discussions regarding the business operations decisions of the Cooperative.
- **A guaranteed market for their milk.** The last thing on a dairy producer's mind should be where their milk is going to go. As a supplier to leading food and beverage companies, DFA ensures that there is always a home for its members' milk and that it will always be delivered fresh.
- **A competitive price for their milk.** As a leading national cooperative, DFA is able to work with other cooperatives throughout the country to comingle milk, creating efficiencies in hauling and reducing transportation costs. This also ensures that DFA's members are receiving the best price for their quality product.
- **Programs and services.** DFA offers programs and services ranging from health and workers' compensation insurance to pace risk management tools, all designed to increase profitability and efficiency on members farms.
- **Returns on investments made on their behalf.** Through DFA, the members are invested in plants and brands throughout the country that not only produce returns that go back to the members, but also create additional markets for the members' milk.

Supply Chain- manufacturing locations and products

In addition to marketing milk, DFA is a dairy foods processor with investments in brands and plants that bring added value to members. Some of these investments include:

- DFA-owned manufacturing plants that produce a wide range of products
- Fluid milk joint ventures and shared ownership in milk bottling plants
- Joint-venture partnerships with America's best private-label food marketing companies
- Innovative partnerships resulting in specially formulated ingredients, products and packaging

Below is a list of manufacturing locations in respect to DFA's product type:

American Cheese

- *Zumbrota, MN:* American style cheese, gouda, hard Italian, dry whey, cheese/cream powders
- *Plymouth, WI:* Processed cheese, cut and wrap natural cheese, shreds
- *Monett, MO:* American style cheese, liquid whey

Ingredient Plants

- *Hughson, CA:* Cream, butter, condensed milk, nonfat dry milk
- *Beaver, UT:* Condensed milk, cream and longhorn- cheddar, Colby, Colby jack, Monterey jack, pepper jack
- *Fort Morgan, CO:* Nonfat dry milk, condensed milk, cream
- *Goshen, IN:* Condensed milk, nonfat dry milk, butter, pasteurised whole milk
- *Adrian, MI:* Condensed milk, nonfat dry milk, whole milk powder, cream
- *Middlebury Center, PA:* Condensed milk, nonfat dry milk/skim milk powder, whole milk powder, malted milk powder, 40 percent fat cream, powder
- *Reading, PA:* Condensed milk, sweetened condensed milk, nonfat dry milk/skim milk powder, whole milk powder, sweetened milk powders, malted milk powder, caseinates, sweeteners, 40 percent fat cream powder

Italian Cheese

- *Turlock, CA:* Italian style cheese, liquid whey
- *New Wilmington, PA:* Italian style cheese, dry whey
- *West Middlesex, PA:* Process cheese and shreds

Canning/Ingredients

- *Ventura, CA:* Dairy-based coffee beverages
- *Schulenburg, TX:* Dairy dips and salsa
- *Winnsboro, TX:* Butter, anhydrous milkfat, nonfat dry milk, sweet cream buttermilk powder
- *Springfield, MO:* Dairy-based coffee beverages
- *Cabool, MO:* Sports Shake, energy protein beverages and dairy-based coffee beverages; adult nutritional beverages
- *Winthrop, MN:* Anhydrous milkfat, fat blends, nonfat dry milk, buttermilk
- *Mechanicsburg, PA:* Dairy-based coffee beverages

Dairy Farmers of America- Commentary Summary

Created through the merge of four dairy cooperatives in 1998, DFA is a farmer-owned dairy marketing cooperative based in Kansas City, Missouri. DFA is now the world's eighth largest dairy companies by turnover.[288] Its annual sales were around USD 8.1 billion in 2009.[289] The company purchases raw milk from its over 9,000 member farms and sells milk and processed dairy products to wholesale customers. While DFA is engaged in a joint venture with New Zealand dairy cooperative Fonterra, all of its manufacturing activities are operated within the United States of America. DFA is responsible for the purchase of about one third of all US-produced milk and is a major supplier to Dean Foods. However, the cooperative has spent much of 2010 recovering from the very difficult year experienced by members in 2009, during which market volatility led to poor prices. As a result of this, DFA has a major interest in the 'Foundation for the Future' proposals from National Milk Producers Federation to change the basis for the market of raw milk in the US. [290] The current summary will provide an overview for DFA's ownership controversy, criticisms on its manipulation of USA's dairy market, its advocacy in supply management and dairy policy reform, as well as its efforts to strengthen its technology and innovation capacity.

1. Ownership and governance issues [291]

According to DFA's company strategy, governance structure and values, the cooperative is collectively owned by dairy farmers from its 9,572 member farms. While this appears to illustrate a company where dairy farmers are empowered to make decisions, there are still various issues that reflect ambiguity in the cooperative's ownership structure and power relations. There are arguments pointing out that the group's executives have often seemed more concerned about pleasing dairy executives rather than satisfying their members, especially during a time of consolidation in the industry. The cooperative, being one of the country's largest, generates $11 billion in sales. Due to its size, some dairy farmers have felt compelled to join, yet they are finding that they were paid less than before for their raw milk. In addition, some members complained that they were often given no information on how the money of the cooperative was spent. On the other hand, the current president and chief executive, Richard P. Smith, disclosed that DFA's former chief executive, Gary E. Hanman, transferred $1 million in 2001 to the board chairman at the time, Herman Brubaker, for reasons that are still unknown.

Martin (2008) described that during his term, Mr. Hanman aggressively expanded his cooperative and his influence by out-manoeuvring competitors, rewarding his allies and giving campaign contributions to politicians who were in a position to help him. In order to expand the cooperative, Mr. Hanman used a strategy that gave dairy farmers little choice but to join the cooperative. At the same time, competing cooperatives were either driven out of business or ended up merged with DFA. The cooperative would sign exclusive supply agreements with milk bottlers or buy the bottling plants outright, often in areas where it had few if any members. The dairy farmers who supplied the plant could then either join the cooperative or find somewhere else to sell milk. In a time of rapid consolidation, there often were not any other plants within a reasonable distance.

In some parts of the country, including the Northeast and areas of the South, three out of four dairy farmers now sell their milk through the Dairy Farmers of America or one of its affiliates. Questions about where farmers' money was going intensified when court documents filed by the Justice Department a few years ago revealed that some of the Dairy Farmers' business partners were making extraordinary profits. For instance, Robert Allen, a dairy executive, participated in a joint venture in the Northeast and made $21.7 million profit on a $1 million investment. Another dairy executive, Allen Meyer, had a joint venture with the DFA in Kentucky and Tennessee: he turned an investment of several hundred thousand dollars into a gain of $70 million. DFA officials say the cooperative made the same return on those investments as Mr. Allen and Mr. Meyer. However, Peter Hardin, editor and publisher of The Milkweed, a newsletter that has long been critical of Mr. Hanman, remains doubtful and pointed out that the money is usually distributed to outside business partners rather than the dairy farmers.

Mr. Smith suggested that the old days at DFA suffered from "some combination of lack of transparency and arrogance", and he has vowed to change the cooperative culture. He has also promised a thorough and transparent investigation of the cooperative's finances to ensure that there were not any other unexplained payments.

2. Criticisms and Lawsuit: Manipulation of Market [292] [293]

Burnett (2009) reports that the price of raw milk paid to farmers has dropped to its lowest level in 40 years. Dairy farms are going under across the country, and as the crisis deepens, criticism grows that dairy giants are trying to monopolize the industry, to the detriment of independent farmers and consumers. DFA was one of the two entities have received the harshest criticism, while the other one being Dean Foods. Over the past decade, through mergers and acquisitions of co-ops and dairy processors, both Dean and DFA grew bigger and bigger. Subsequently, DFA entered into a 100 percent, full-supply agreement with Dean. Under such circumstance, as Dean came to dominate regional markets, any dairy farmer who wanted to sell to one of Dean's 50 brands had to go through DFA, without any alternative option.

A group of dairymen are suing DFA, Dean Foods and others in federal court for allegedly engaging in anti-competitive and predatory behavior. The lawsuit claims that DFA has effectively created an illegal milk cartel in the Southeast. One of the farm owners who have sued DFA expressed that the industry was different before DFA came into existence in 1998. As DFA came in and started terminating all other supply contracts, dairy farmers were left with no other option to sell their milk. Also, some argue that rather than offering benefits of being part of a farmer-owned co-op, DFA has artificially depressed prices for raw milk.

Peter Hardin (see section one) believes the fundamental problem with the dairy industry is a lack of honest competition and too little government oversight. Hardin points out that if dairy farmers could receive a fair share of what the consumers are paying for the products, these issues would not arise. Nevertheless, dairy farmers do acknowledge other factors such as prices for animal feed, equipment and land. Rick Smith, the CEO of the Dairy Farmers of America, expressed his

understanding of the situation that DFA's members are in, yet he says some context is in order and pointed out the efforts that have been made to make the cooperative more collaborative and much more transparent in the past few years.

On the other hand, in 2008, The U.S. Commodity Futures Trading Commission (CFTC)'s DFA order finds that, from May 21 through June 23, 2004, DFA, its former Chief Executive Officer Gary Hanman, and its former Chief Financial Officer Gerald Bos attempted to manipulate the price of the Chicago Mercantile Exchange's June, July, and August 2004 Class III milk futures contracts through purchases of block cheddar cheese on the CME Cheese Spot Call market. The CME block cheese market price plays a significant part in establishing future prices of milk futures.

Subsequently, DFA, Gary Hanman and Gerald Bos were fined USD$12 million civil monetary penalty for attempting to manipulate milk futures contract and exceeding speculative position limits in that contract. Additionally, Frank Otis, former President and CEO of a DFA subsidiary, and Glenn Millar, former Executive Vice President of the subsidiary, were fined $150,000 for aiding and DFA's speculative position limit violation. In addition to imposing civil penalties, the order bars Hanman and Bos from trading futures for five years. It also bars DFA from engaging in speculative trading for two years, and orders DFA to comply with certain undertakings, including retaining a monitor to ensure that DFA does not engage in speculative trading and that DFA's Cheese Spot Call market cheese purchases are made for legitimate business purposes; implementing a compliance and ethics program; and providing future cooperation to the CFTC.

3. DFA Technology and Innovation [294] 295

DFA has made efforts to further strengthen its technology and innovation capacity, and this is illustrated by its partnerships with Armstrong International as well as Bernstein-Rein. In order to effectively maintain and upgrade its facilities, DFA has contracted Armstrong International. Armstrong International was involved in various projects including the upgrade of DFA's in-line water softener to treat boiler make-up water, replacement of failed steam traps, correction condensate system, component in correct installation and added additional traps to maximize condensate return.

On the other hand, after an extensive review of digital solutions providers, Bernstein-Rein Advertising has been chosen by DFA in 2010 to design and execute a new online corporate communications platform. The website redesign, set to replace its current presence at DFAmilk.com, will be designed as a communications hub intended to serve not only the nearly 18,000 member-owners of DFA, but also the company's various internal divisions that serve the diverse needs of the general membership. The site will serve to educate potential members and the public at large regarding DFA's services, products, activities and values.

4. Brief Conclusion

In sum, DFA, being the country's largest dairy marketing cooperative, has faced various criticism and issues in the past few years. Some have pointed out that while DFA is alleging to be farmer-owned, the financial gains remain in the hands of business partners and the executives. There are also dairy farmers who report that they were not informed with the ways in which money of the cooperative was spent. There are arguments accusing DFA of dairy market manipulation and in 2008, a few of the cooperative's former executives have been charged with attempts to manipulate milk price. Nevertheless, despite these controversies, DFA is working on both the maintenance and upgrading of its technology and innovation systems through contracting and establishing partnerships, and the cooperative has also made efforts to enhance its transparency and coordination in the past few years.

New Zealand Dairy Industry

Abstract

With annual exports volume of NZD$11 billion and contributing to approximately 25 percent of total merchandise export earnings, New Zealand remains the largest exporter of dairy products. New Zealand dairy products account for around one third of the international dairy trade. The evolution and performance of the NZ dairy industry is strongly shaped by a number of key factors including favourable endowment of natural resources for grass production and farmers' strong ideology towards control and ownership of downstream manufacturing and marketing activities, which led to vertical integration and continuous organisational changes. The key strengths of New Zealand's dairy industry include its all-grass farming system, large-scale processing and high levels of investment in research and development, which have increased the efficiency while maintaining the quality of dairy production. The dairy industry is one of New Zealand's largest and best examples of a vertically integrated, co-ordinated global supplier industry. Although New Zealand only accounts for two percent of world dairy production, the country exports over 95 percent of all its national production. This is in sharp contract with the global trend where around 95 percent of total dairy production is usually consumed within the country of origin. About half of New Zealand's recorded dairy exports are value-added products and New Zealand's total export value for dairy has significantly increased between 2006 and 2009. New Zealand's top dairy export destinations are the United States, China and Japan.

While New Zealand's economy is heavily dependent on the dairy industry in terms of both output and employment, New Zealand is acknowledged as the country with the least subsidised farm sector among the industrial nations, and has been complemented by the OECD that its dairy sector reforms "resulted in a dramatic reduction in market distortions." New Zealand's dairy products range from high quality basics including milk powders, butter and cheese, through to specialty foods such as ice cream, and to highly specialised ingredients like protein hydrolysates and freeze-dried biologically active proteins. In recent years, development of functional foods is a growing trend in New Zealand's dairy industry, and the developed products include low-fat, high calcium and protein milk, and biomedical and biohealth products. On the other hand, although the New Zealand dairy industry is relatively successful, it is nonetheless facing a number of challenges. These challenges include declining fertility and increasing levels of mastitis amongst NZ dairy herds, environmental resource issues such as competition for water resources, a lack of capital structure required to fund global growth, and the need to sustain research programmes. In order to address these issues, industry strategies need to be implemented at all levels, ranging from farm system upgrades to adjustments in government regulations.

Background Information [296] [297] [298]

With annual exports volume of $11 billion and contributing to approximately 25 percent of total merchandise export earnings ($NZ10 billion in 2008-09), the dairy industry is New Zealand's biggest export earner. New Zealand dairy products account for around one third of the international dairy trade, and New Zealand remains the largest exporter of dairy products. The key strengths of New Zealand's dairy industry include its all-grass farming system, large-scale processing and high levels of investment in research and development, which have increased the efficiency while maintaining the quality of dairy production, as well as creative marketing strategies.

Dairy industry makes a large and growing contribution to the New Zealand economy. New Zealand has historically depended on the primary sector for its economic growth. Projections suggest that the pastoral and related food industries will remain at the core of the New Zealand economy through to 2020. On the back of continued growth, the dairy sector is forecast to grow export revenue to $11.9 billion in 2012, helping to lift the New Zealand economy out of the global recession.

New Zealand's dairy products range from high quality basics including milk powders, butter and cheese, through to specialty foods such as ice cream, and to highly specialised ingredients like protein hydrolysates, spray-dried milk proteins, and freeze-dried biologically active proteins. Also, there is a growing trend of developing new functional foods using dairy ingredients. Examples of these functional foods include low-fat, high calcium and protein milk, biomedical and biohealth products. In recent years, development of functional foods is a growing trend in New Zealand's dairy industry, and the developed products include low-fat, high calcium and protein milk, and biomedical and biohealth products, such as colostrum-based health supplements. Below are some key statistics for New Zealand's dairy industry (as of 2009):

Annual Export Volume	NZD$11 billion (≈EUR$6.75 billion as of Aug 2011)
Annual Production	16 billion litres
Proportion of national produce exported	95%
Share of world dairy production	2%
Share of world trade in dairy products	35%
Number of dairy farms (2005 data) [299]	12,810
Dairy cows	5.8 million
Milking herds	4.6 million

Historical Background to NZ Dairy Industry [300]

The New Zealand dairy industry has grown considerably during the last three decades (see Table 1 and Table 2). This period of expansion (1980-2006) was built on a well established industry. The evolution and performance of the NZ dairy industry is strongly shaped by the following key factors.

- Favourable endowment of natural resources for grass production.
- On-going pursuit for innovation and technological improvement by stakeholders.
- Early access to guaranteed market (UK).
- Farmers' strong ideology towards control and ownership of downstream manufacturing and marketing activities led to vertical integration and continuous organisational changes.
- Traditional market access challenged by UK joining EU drove search for new markets and market diversification and ongoing development of global network of NZDB and Fonterra subsidiaries overseas.

At first dairy production was mostly aimed at the domestic markets with some exports to Australia slowly developing. Once refrigeration technology became available, the UK is the major overseas outlet for NZ dairy commodities. The first NZ brand established in the UK was Anchor in 1919. Butter and cheddar cheese were the main products exported to this market until 1973.

Trade slowed down when UK announced it would join the EC. The threat of increasing trade barriers motivated the NZ dairy industry to explore South East Asia and to seek diversification of products. Ongoing growth in trade with South East Asia was based on milk powder and reconstitution of milk powder in consumer products. Initially the strategy is based on recombining milk powder in NZ owned plants overseas. This strategy proves unsuccessful and is changed to selling milk powder to local companies.

Year	*Total Dairy Cattle*	*6 Year Change*
1974	3,074,000	
1979	2,900,089	-5.7%
1984	3,245,524	11.9%
1989	3,303,377	1.8%
1994	3,839,184	16.2%
1999	4,316,409	12.4%
2004	5,154,092	19.4%

Table 1. Total NZ Dairy cattle

Season	*Milkfat processed (million kgs)*	*Milksolids processed (million kgs)*	*Protein processed (million kgs)*	*Milk processed (million litres)*
1974/75	244	425	181	5,222
1980/81	282	491	209	5,868
1985/86	350	609	257	7,326
1995/96	452	788	335	9,325
2005/06	**724**	**1,267**	**543**	**14,702**

Table 2. Summary of milk production on selected seasons

Trade [301] [302]

As previously mentioned, New Zealand is a major player in world dairy markets and has a significant role in the world's dairy trade. Although New Zealand only accounts for two percent of world dairy production, the country exports over 95 percent of all its national production. This is in sharp contract with the global trend where around 95 percent of total dairy production is usually consumed within the country of origin.

About half of New Zealand's recorded dairy exports are value-added products, yet it is estimated that this value may be even higher due to processing and packaging of value-added products in New Zealand owned offshore operations. New Zealand's total export value for dairy has significantly increased between 2006 and 2009 on the account of growing milk solids production, higher export prices and a diverse range of export destinations (see Figure 1 for New Zealand's dairy export volume comparison). Out of the destinations, United States, China and Japan receive the greatest volume of New Zealand dairy exports. Six main categories of dairy products are exported from New Zealand, including:

- Milk and cream (not concentrated)
- Milk and cream (concentrated)
- Buttermilk and related products
- Whey and related products
- Butter and related products
- Cheese and curd.

New Zealand is the world's largest butter exporter and accounts for over 40 percent of all internationally traded butter. Skim and whole milk powders, on the other hand, contribute around 27 percent and 38 percent respectively. [303] Out of New Zealand's exported dairy products, concentrated milk (particularly whole milk and skim milk powder) is the largest product category, with a value of around NZD$4 billion (2009 data). Cheese and curd is currently the second most important product category, having taken over from butter. Although declined in relative importance, butter remains the third most important category. Non-concentrated milk, buttermilk and why products are smaller categories; however whey products have increased in importance in recent years.

As illustrated in Figure 2 the dairy industry in New Zealand can be separated into three broad value generating activities: [304]

1. dairy farming;
2. manufacturing and distribution; and
3. exporting - incorporating the marketing and distribution to overseas markets

The first value generating activity in the dairy industry - the production of milk at the farm - includes the full range of animal and plant husbandry, milk harvesting and business management. The final stage in the New Zealand dairy value chain is the international marketing of NZ dairy products.

Figure 1. New Zealand Dairy Export Volume Comparison (Jan-May 2006-2011)
(+/- % on the same period of previous year)

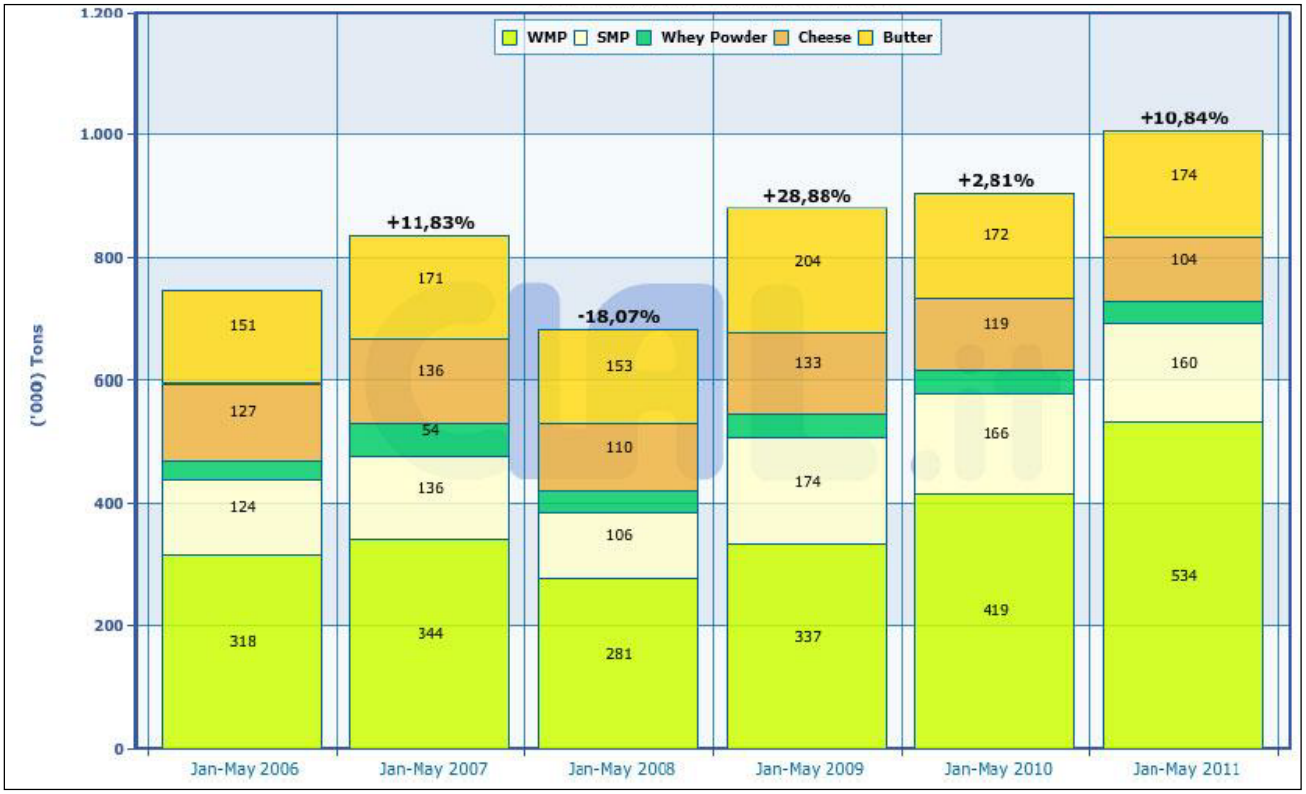
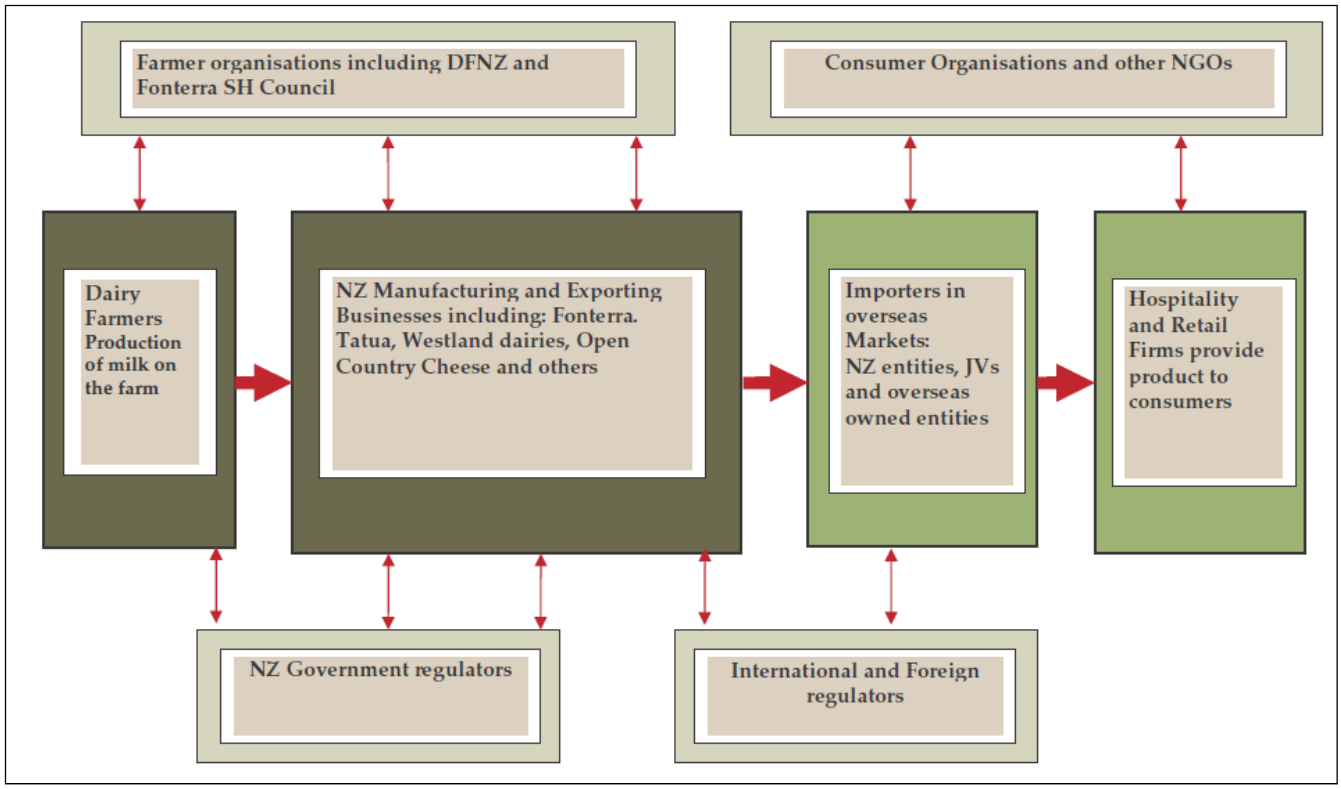


Figure 2. The New Zealand export dairy value chain (as of 2007)



Key Players and Ownership

Zero government subsidies [305]

While New Zealand's economy is heavily dependent on the dairy industry in terms of both output and employment, New Zealand government does not provide subsidies for the dairy sector at all. In 1984 New Zealand's Labour government took the dramatic step of ending all farm subsidies, which then consisted of 30 separate production payments and export incentives. Prior to the reform, subsidies in New Zealand accounted for more than 30 percent of the value of production and New Zealand farming was also marred by issues including overproduction, environmental degradation and inflated land prices.

Yet the subsidy elimination in New Zealand was swift and sure. New Zealand's government simply offered one-time "exit grants" to those who wanted to leave farming when subsidies ended. This plan was initially met with protest marches on parliament and organized resistance by farmers, and the government predicted that 10 percent of all the country's farms would go out of business.

However, a report in 2001 provided by the country's main farmers' group, the Federated Farmers of New Zealand, documents the positive change and growth in that country's agriculture industry since subsidies ended. While land prices initially fell after reform, by 1994 they had rebounded, and they remain high today. The mass of farm bankruptcies some had expected never occurred; only 1 percent of farms have gone out of business. Meanwhile, the value of farm output in New Zealand has increased 40 percent in constant dollar terms since the mid-1980s. Agriculture's share of New Zealand's economic output has risen slightly, from a pre-reform 14 percent to 17 percent in 2002. After the reform, productivity in the industry has averaged 6 percent growth annually, compared with just 1 percent before reform.

Forced to adjust to new economic realities, New Zealand farmers cut costs, diversified their land use, sought non-farm income opportunities and altered production as market signals advised. For example, by reducing sheep numbers and boosting cattle ranching. Farmers were aided on the cost side as input prices fell, because suppliers could no longer count on subsidies to inflate demand. The striving for greater efficiency also supported environmental protection as marginal land farmed only to collect subsidies was replaced with native bush, and overuse of fertilizers ended when fertilizer subsidies were removed.

The Organization for Economic Cooperation and Development (OECD) confirms that New Zealand has the least subsidised farm sector among the industrial nations, concluding that its reforms "resulted in a dramatic reduction in market distortions." The OECD's data show that agriculture subsidies account for just 1 percent of the value of agriculture production in New Zealand and consist mainly of scientific research funding. By contrast, subsidies represent 22 percent of the value of U.S. farm production.

Processing Companies [306] [307]

There are seven main dairy processing companies in New Zealand, with Fonterra Cooperative Group being the largest, accounting for 90 percent of the country's milk supply, more than 20 percent of total New Zealand merchandise exports, seven percent of the country's Gross Domestic Product and 40 percent of the domestic consumer market. There are two other co-operatives, Tatua Co-Operative Dairy Company Ltd and Westland Milk Products. There are also four other processing companies, namely Open Country Dairies, Synlait, New Zealand Dairies and Goodman Fielder. For these companies, over 95 percent of processing capacity is farmer-owned

Regulating Fonterra- The Dairy Industry Restructuring Act [308]

Fonterra, New Zealand's largest dairy company was created and regulated by The Dairy Industry Restructuring Act (DIRA) in 2001. This Act provides for the regulatory and structural reform of the dairy industry. The DIRA authorised the amalgamation of New Zealand's two largest dairy co-operatives, New Zealand Co-operative Dairy Company Ltd and Kiwi Co-operative Dairies Ltd, into Fonterra Co-operative Group Limited (Fonterra). Consequently, all the shares in the New Zealand Dairy Board are now owned by Fonterra.

As this resulted in an entity with a substantial degree of market power in a number of key domestic New Zealand dairy markets, the DIRA was designed and implemented to mitigate the risks of Fonterra's market power. The DIRA allows for contestability in the New Zealand raw milk market and provides for access to other dairy goods or services supplied by Fonterra to be regulated if necessary. This contestability and access is provided under Subpart 5 of Part 2 of the DIRA by the following clauses:

- legislating open entry to and exit from Fonterra by farmers;
- allowing shareholders (dairy farmers) to supply 20 percent of their weekly production to an independent processor
- ensuring that, at any time, at least 33 percent of the milksolids produced within a 160 kilometre radius of any point in New Zealand is supplied either under contracts with an independent processor, or under contracts with Fonterra that expire (or may be terminated without penalty) at the end of the current season
- ensuring that Fonterra sells at market value to exiting shareholders any milk vat situated on their farm, when requested by those shareholders
- preventing discrimination between new entrants and existing shareholders

Industry Structure and Regional Strengths [309] [310]

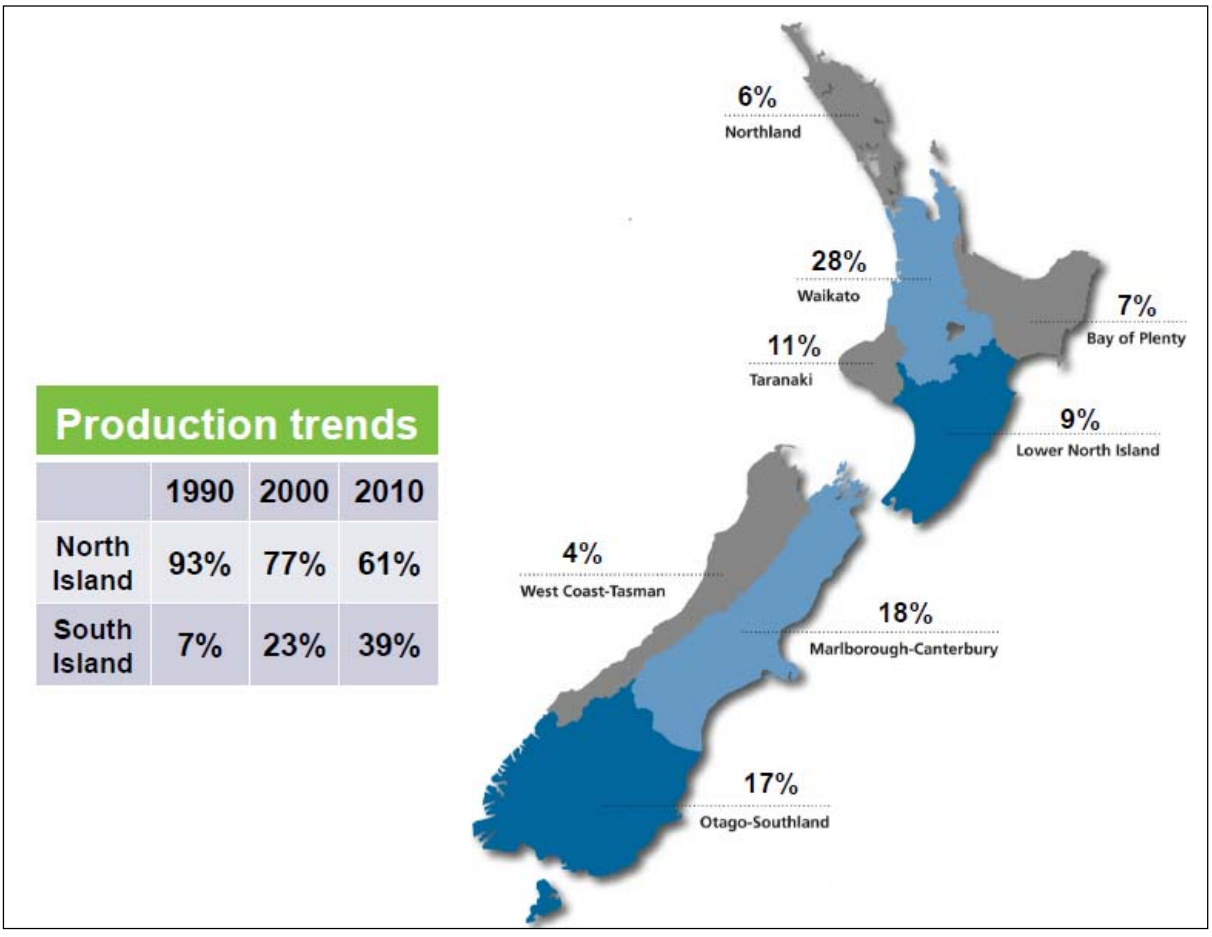
Industry structure

The dairy industry is one of New Zealand's largest and best examples of a vertically integrated, co-ordinated global supplier industry. The dominant players include Fonterra, Tatua and Westland. New players, for example, Open Country Cheese based in eastern Waikato, sources milk from local farms to produce premium quality cheese and whey powder exported around the world. Outside of the milk processing companies, there are hundreds of specialist dairy product companies exporting niche products.

Regional strengths

81 percent of New Zealand's dairy farms are located in the North Island, with one-third of the country's total located in the Waikato/South Auckland region. Taranaki is the second most populated region at 16 percent. South Island dairy farms account for 19 percent of the national total. Other specific regional activity includes a cluster of dairy sheep farmers in Otago and Southland, which is focusing on three key areas, including producing sheep milk for cheese plants such as Whitestone Cheese (added-value sheep milk cheese), feta cheese production and biotech applications. A dairy education and innovation centre in the Manawatu also offers specific graduate training for the dairy industry by Massey University in conjunction with Fonterra. See below for New Zealand's milksolids production by different regions.

Figure 3. New Zealand Milksolids Production by Region [311]



Products and Innovation

Innovation and invention [312]

A number of innovations resulted from the activities of New Zealand's dairy industry. Examples of these efforts include:

- Formation of partnership between Fonterra's Anlene bone nutrition group and a leading healthcare company, GE Healthcare, to work on bone health issues using Anlene products and GE's bone mineral density technology.
- Achieving a world-first by breeding cows that produce low-fat milk that is also high in omega3 oils and polyunsaturated fat. The cows were bred from a single female discovered by researchers to have a particular genetic mutation during a routine milk screening programme.
- Dairy Goat Co-operative (New Zealand) Ltd developed the world's first commercialised infant formula from goat milk and the world's first long-life goat milk, and continues to develop and make a range of premium specialty formulations based on goat milk.
- A long-term collaboration between Fonterra's ingredients business and Industrial Research Ltd has led to the world's first processing plant to produce complex lipids from milk. In a purified form, these lipids can be worth thousands of dollars a kilogram. They have a variety of applications in nutritional and cosmetic applications.

On the other hand, organic production in New Zealand is expected to be worth more than $130 million within five years. In 2000, Fonterra had just seven farms supplying organic milk. That number has now grown to more than 80 and Fonterra expects to have 200 certified organic suppliers by 2013. Taranaki, Waikato and the Bay of Plenty have regional clusters of organic milk producers. The suppliers of organic farming inputs support the industry by providing seaweed drenches and organic fertilisers and animal health products. Fonterra produces more than 25 organic dairy ingredients, including a range of cheese, butter, fluids, proteins, blends and milk powders. Numerous smaller companies produce organic cheeses, milk powders and niche dairy products.

Development/ dynamics

While New Zealand's dairy industry has been performing relatively well in the past few decades, it still needs to meet a number of challenges and retain its success factors in order to continue developing. Various strategies are also proposed in the aim to further advance the industry.

Key Success Factors [313]

A number of key success factors have been identified for New Zealand's dairy industry. A report presented by The Agribusiness Research and Education Network (2008) suggests that the success of New Zealand's dairy industry depends on the following factors:

- Successful development of international markets
- Political support in international markets
- Political support within New Zealand
- The evolution of industry structure to facilitate growth
- Farmer engagement in the development of industry policy, strategy, structure and operation
- Continuing technological advance
- Major disease-free status of national herd
- Development of economies of scale

Current and Future Challenges to NZ Dairy Industry

In the same report, The Agribusiness Research and Education Network (2008) has also identified a range of challenges for the industry. First, on farm challenges pertain to cows, pasture, the environment and farm financing and associated generation issues. Despite the tremendous advance in dairy genetics, the industry is concerned about evidence of declining fertility and increasing levels of mastitis amongst NZ dairy herds.

Second, environmental concerns also create challenges for the industry. Issues range from competition for water resources, the political challenges associated with obtaining access to resources, the determination of appropriate production responses to climate change policies and increased concentration of farming with larger properties and groups of properties.

Third, capital structure issues are currently debated with aspirations for capital to fund global growth; however, some New Zealand farmers are unwilling to lessen their ownership rights. The challenge is compounded by the redemption risk facing cooperatives. There appears to be more flexibility in considering a range of ownerships systems in extension, artificial breeding and farming than there is in processing and marketing.

Fourth, a concern frequently expressed by industry leaders was that the industry had not been able to sustain research programmes. This is partly due to the lack of funding and partly due the differences in views and commitments of Crown Research Institutes, Universities and the famer

controlled sectors of the industry. Also, there is some tension between overseas versus New Zealand based research and short term versus long term research funding.

New Zealand's dairy industry is very conscious that this is part of a global industry. For many years it was comfortable with the idea that it was an exporter of NZ dairy products to the world. However, as Fonterra, in particular, has moved to being a company sourcing milk from around the world, the strategic challenge is seen as both more promising and more daunting. The industry appears to believe that there has been real success in achieving more coherent brand management but is unclear about the strategic imperatives and the basis for resolving the challenges associated with multinational operations.

Industry Strategies [314]

In a 2009 report published by Dairy New Zealand, the industry good organization funded by New Zealand dairy farmers, a number of strategies that aim to improve New Zealand's farming systems, farm management, human resource for dairy industry and relevant government regulations are presented. These strategies are briefly summarised as the following:

1. **Farming Systems Design and Adaptation Strategies**

New options need to be generated from research and development by universities, research teams, on-farm innovation and agri-business. These options should then be integrated into farming systems with reference to overall system performance and regional variation. Also, farmer adaptation (which will lead to higher performing farm systems) could be achieved through effective adoption approaches, involving all parts of the industry networks and building capability in all parts of the industry. Finally, effective communication needs to be in place between government and dairy farms in order to test the effectiveness of government policy initiatives.

2. **Farm Production System**

New Zealand dairy industry needs to invest in increasing adoption of existing beneficial technologies, developing new technologies to increase potential milksolids production from forage, potential feed conversion efficiency, cow functionality and resource use efficiency. Animal evaluation systems that collect herd data and monitor herd status also need to be maintained and enhanced. Finally, in order to increase cow functionality, improvements need to be made to enhance animal health, traits and productivity.

3. **Farm Management Systems Strategies**

Ensuring that farm managers have the business skills to identify their goals and implement their plans could enhance dairy farm management. Farm managers' capabilities could be improved through appropriate education, research, on-farm training, establishing high-quality information sources and ensuring that dairy businesses have access to improved methods and tools that could support farm management.

4. **Attracting Talents in the Dairy Sector**

The industry should promote dairy careers to school-leavers, tertiary students and early career change individuals through ensuring that people in the industry are fully informed of career and

business opportunities in dairy farming, and know how to access these opportunities. Also, it is important to develop a quality work environment that allows autonomy while having agreed indicators and target for farm infrastructure in place. On-farm innovations should also be encouraged to improve the work environment. In addition, dairy people's careers could be developed through ensuring that high-quality training services, leadership programmes and mentoring or coaching programmes are in place.

5. Governments and Regulations Strategies

In terms of regulations, government should ensure that all plans and policies developed by local and central government relating to land use, resource availability, energy and environmental concerns are based on sound scientific, economic and social principles. Benchmarks and targets for increasing resource use efficiency and guiding good practice should also be established. It is important that the above is achieved through working and negotiating with dairy farmers to develop regulations that would maximize the effectiveness of farm performance rather than hinder such practices.

Australian Dairy Industry

Abstract

With the direct employment of approximately 40,000 people and further downstream processing, the dairy industry is one of Australia's major rural industries. Since the first herd was brought to Australia in 1788, dairying in the country developed steadily through breeding and importing. Today, although Australia only accounts for an estimated 2% of the world's milk production, it is a significant exporter of dairy products as its level of production is well above that required for domestic consumption. With a 10% share of world dairy export, Australia ranks third in terms of world dairy trade, just behind New Zealand and the European Union. Australia's top dairy export destinations include Japan, Singapore, China, Indonesia, and the Philippines. The concentration of exports to Asia/East Asia reflects both Australia's geographic proximity to these markets and the extent to which Australia is excluded from other major markets by direct restrictions (as in the case of the European Union) or the impact of the export subsidy programs of major competitor countries. Australia's three main manufactured dairy product streams are cheese, butter and milk powders, as well as fresh dairy products such as drinking milk. Although most of the country's milk production occurs in south-east seaboard states, all states have dairy industries that supply fresh drinking milk to nearby cities and towns and the Australian dairy industry remains predominantly pasture-based.

As a result of the Dairy Structural Adjustment Program (DSAP), which was implemented between 1999 and 2000, Australian dairy farmers now operate in a completely deregulated industry environment, where international prices are the major factor in determining the price received by farmers for their milk. Australian dairy farmers receive a low price for the milk they produce by world standards and therefore have to run very efficient production systems. However, in order to maintain the research and develop within the dairy sector, Dairy Australia Limited, a public company limited by guarantee, was created in 2003 to fund projects that span the industry value chain for the benefit of the Australian dairy industry. There are currently various challenges faced by the Australian dairy industry throughout the different stages of its supply chain, including input, milk production, processing and manufacturing, exporting and retailing. In response to these challenges, various strategies and actions have been planned or executed by the industry in respect to the industry's production systems, response to climate change and natural resource management, and market access. In sum, the Australian dairy industry has already faced significant challenges including deregulation, droughts and the financial crisis. However, the industry has also demonstrated its ability to adapt to difficult situations through sharing its view of the challenges and opportunities and addressing these challenges with collective action. One critical element for success now would be the policy environment, which plays an important role in allowing the industry to adapt and further develop.

Background Information [315]

Based on a farmgate production value of AUD 3.4 billion in 2009/10 and directly employing approximately 40,000 people, the dairy industry is one of Australia's major rural industries. Further employment in the related activities such as transport, distribution, research and development are also associated with Australia's dairy industry. Furthermore, dairy is also one of Australia's leading rural industries in terms of adding value through further downstream processing. Significant economic activity and employment are generated in country regions as most of these processing activities occurs close to farming areas. The industry ranks third behind the beef and wheat industries.

Dairying is a well-established industry across temperate and some subtropical areas of Australia. Although most of the country's milk production occurs in south-east seaboard states, all states have dairy industries that supply fresh drinking milk to nearby cities and towns. The manufacturing of longer shelf life products, including cheese and specialised milk powders, is gradually becoming more concentrated in the south-east region of Australia. Nevertheless, high-quality consumer products, including fresh milks, custards, yogurts and a wide variety of cheese types, are produced in most Australian states.

While supplementary feeding with grains is becoming increasingly common, the Australian dairy industry remains predominantly pasture-based. As a major regional employer, the industry value-adds through the processing of milk to produce fresh lines such as butter, cream, cheese and yogurt. Bulk milk and specialised powdered milks are also significant. Below are some key statistics for Australia's dairy industry (as of 2009/10): [316]

Annual Export Volume	AUD$2.4 billion (≈EUR 1.84 billion as of Aug 2011)
Annual Milk Production	9,023 million litres
Proportion of national produce exported	45%
Share of world trade in dairy products	10%
Dairy herd	1.6 million cows
Average herd size	220 cows
Per capita consumption (Drinking milk)	102 litres
Per capita consumption (Cheese)	13 kgs
Dairy industry workforce (Direct employment)	40,000

Historical Background to Australian Dairy Industry [317]

Dairying in Australia first happened in 1788, when Captain Arthur Phillip and the First Fleeters came ashore at Sydney Cove with seven cows and two bulls bred to survive a hostile environment. This small herd soon moved to the greener pastures of Parramatta where they escaped into the bush not to be seen for some seven years. Upon their recapture, the herd comprised 61 cattle. It was the cows of this group which became Australia's first dairy herd.

By 1800, through breeding and importing, there were 332 bulls and 712 cows in the colony. The settlers were adapting to their new Australian environment. They made butter and cheese during spring and summer (when cows produce most milk), and preserved these commodities with salt for autumn and winter.

Pioneers such as John Macarthur imported more dairy cattle to his Parramatta farm while, in 1805, Dr John Harris built Sydney's first commercial dairy at what is now inner-suburban Ultimo. However, Tasmania gave Australia its first cheese industry.

In the 1820s, the Van Dieman's Lan Company established Australia's first commercial cheese factory. Farmers from the NSW district of Illawarra began to send their cheese and butter to Sydney markets by sea, and as more ports opened, dairying extended all the way down to Bega.

In 1832, with two cows and two calves, John Fawkner arrived in what was to become Melbourne. With the ideal dairying conditions around Port Phillip Bay, the herd grew. Within a year, there were 155 cattle in the district. By 1850, there were 347,000.

South Australian dairy farmers were becoming so successful that they were selling cheese to Tasmanians. In 1891, there were almost 1 million dairy cows in Australia. The gold rush brought thousands of people to Australia. With its collapse, many were offered Government pastoral leases on the outskirts of inland towns. By 1900, there was hardly a township, even in remote outback Australia that did not have its own fresh milk.

Trade [318]

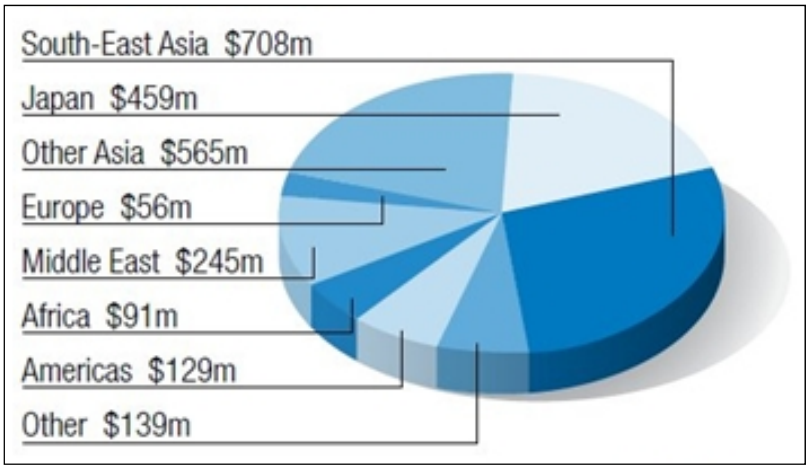
While Australia accounts for an estimated 2% of the world's milk production, it is a significant exporter of dairy products. As the volume of Australian milk production has been well above that required for domestic consumption, a significant proportion is destined for export markets over the past two decades. With a 10% share of world dairy export, Australia ranks third in terms of world dairy trade, just behind New Zealand and the European Union as a bloc. The proportion of total production exported has ranged from 40-60%. However, the lowest proportion of export since the mid-1990s was observed between 2007 and 2009 when Australia has only exported around 45% of its milk production; this is largely due to the reduced availability of product for export.

As of 2009/10, Japan is the single most important export market for Australia, accounting for around a fifth of all exports by value. Australian exports are largely concentrated in Asia, which represented 72% of the total dairy export value of AUD 2.4 billion. This concentration of exports in Asia/East Asia reflects both Australia's geographic proximity to these markets and the extent to which Australia is excluded from other major markets by direct restrictions (as in the case of the European Union) or the impact of the export subsidy programs of major competitor countries.

Asian markets have considerable potential for consumption growth as incomes rise and diets become more 'westernised'. Australian dairy companies have proven track records in supplying these markets over a number of decades. At the same time the Middle East and the Americas are also becoming increasingly important markets for many Australian exporters.

Australia's top five export markets by volume in 2009/10 were Japan, Singapore, China, Indonesia, and the Philippines; while the top five export markets by value were slightly different in Japan, China, Singapore, Indonesia and Malaysia. The fastest growing export market for Australia in recent years has been China. See Figure 1 below for the value of Australian exports by geographical regions:

Figure 1. Australian exports by region 2009/10 (in AUD million)



Key Players and Ownership

Deregulation [319] [320]

Australian dairy farmers now operate in a completely deregulated industry environment, where international prices are the major factor in determining the price received by farmers for their milk. At an average of approximately US 34c per litre, Australian dairy farmers receive a low price by world standards and therefore have to run very efficient production systems. The Australian dairy industry implemented the Dairy Structural Adjustment Program (DSAP), a deregulation process which planned for an orderly, national approach to the deregulation of the drinking milk sector in conjunction with the end of manufacturing milk price support between 1999 and 2000. This Program removed both state and federal legislation specific to the dairy industry. The DSAP involves the imposition of a (retail) Dairy Adjustment Levy of 11 cents per litre on consumers of products marketed as dairy beverages. The levy funds quarterly DSAP payments over eight years to Australian dairy farmers, to assist them to make the necessary adjustments to a deregulated environment, with minimal social and economic disruption.

The impact of deregulation at the farm level varied across the different states of Australia. This was very much dependant on how important drinking milk (with its regulated higher farmgate price) was to the individual farm enterprise in relation to their total milk production. A number of farmers took advantage of the exit payments offered under the DSAP scheme to leave the industry. However, while a decrease in the number of farms was observed, this observation was simply the continuation of an industry trend that has been apparent for over three decades. With the return of favourable seasonal conditions in 2001/02, milk production volumes reached new record levels and strong industry growth has continued.

Industry Levies [321]

Dairy Australia Limited, a public company limited by guarantee, was created in 2003 as the result of a merger between the Australian Dairy Corporation (ADC) and the Dairy Research and Development Corporation (DRDC). Dairy Australia is the industry-owned service company, limited by guarantee, whose members are dairy farmers and industry bodies. Dairy Australia invests approximately $35 million a year of dairy farmer levy payments and $15 million a year of Australian Government funds in projects that span the industry value chain for the benefit of the Australian dairy industry. They include research and development, information services, international trade development and national marketing programs.

On the other hand, Australian dairy farmers also contribute to the funding of Animal Health Australia (AHA), which is a non-for-profit public company. AHA's task is to facilitate partnerships between governments and livestock industries, and provide a national approach to animal health systems. The AHA levy is the dairy industry's contribution to various AHA programs, such as the National Bovine Johne's Disease Control Program, National Arbovirus Monitoring Program and Accreditation Program for Australian Veterinarians. All dairy companies show the amount of levy that applies to each supplier's milk on their monthly milk statement. Members of AHA include Commonwealth, State and Territory governments and key commodity and interest groups.

Industry Structure and Regional Strengths

Accounting for over 60% of the national milk production output, Victoria is the largest milk producing regions in the nation (see Figure 2). Nevertheless, while to a lesser extent, various other regions are also contributing to the national dairy production. [322] Below is an overview of Australian dairy industry status and profile by geographical regions:

Southern, Central and Coastal NSW Dairy Industry [323]

The southern, central and coastal NSW dairy region is a large and diverse milk production region, servicing important regional fresh milk and product markets and the region has good access to large grain and fodder growing areas. The value of milk produced in this region is determined by the market influences arising from factors including the final market destination (domestic or export), farmgate and marketplace competition within the region, and the sustainable cost of year-round fresh milk production. In general, processors prefer local, reliably-produced milk to maximise shelf-life for fresh products, and minimise logistics and handling costs.

Industry profile (2009/10)-

- Approximately 560 dairy farmers are expected to produce around 741 million litres of milk in southern, central and coastal NSW. This production level represents around 8 per cent of Australian national milk output.
- The dairy industry in the region directly employs some 1,060 people on farms, with a further 1,480 who are employed in the processing sector.
- The estimated value of farm milk production in the region was AUD 385 million.
- Major companies operating in the region include National Foods, Bega Cheese, Fonterra, Murray Goulburn Co-operative and Hastings Co-op.
- The region supplies fresh product requirements for a large metropolitan region that covers more than five million people.

Gippsland Dairy Industry

The Gippsland region is located in the south-east of the Victoria state. It extends from the edge of Melbourne's Metropolitan Region in the region's west, eastwards to the New South Wales border, with the northern boundary formed by the edge of alpine country, with the coastline and Wilsons Promontory comprising its southern border. There is a large dairy-processing sector within the region producing fresh milk, milk powder, butter, cheese and other products for domestic and significant export markets. Several speciality cheese businesses also exist in Gippsland producing a wide range of high quality cheeses and other value added dairy products. [324]

Industry profile (2009/10) - [325]

- The region produced around 2 billion litres of milk, which was 22 per cent of national milk output
- Dairy industry in the region was the biggest agricultural contributor to the Gippsland economy, and was one of the largest dairying areas in Australia.

- The estimated farmgate value of the region's dairy production was AUD 658 million.
- The region's dairy industry directly employed around 6,800 people in farming and processing.
- Supplied 16 dairy factories with milk. Large dairy processors include Murray Goulburn Co-operative, Fonterra, Burra Foods, Longwarry Food Park, National Foods and Parmalat.

Western Victoria Dairy Industry [326]

This region is one of the largest milk producing regions in Australian national dairy industry, processing milk sourced from outside the region using its extensive manufacturing infrastructure. Inherent advantages of the region include the dryland pasture base and relatively reliable seasonal climate. Also, there are few limitations on feed supply, with good access to fodder and grain supplies. Farmgate prices are usually driven by export returns, which have been affected by the volatility in international dairy commodity prices and sustained competition for milk.

Industry profile (2009/10)-

- Around 1,500 dairy farmers in Western Victoria are expected to produce 2.0 billion litres of milk in 2009/10. This represents about 23 per cent of the national milk output.
- The dairy industry directly employs around 7,400 people in both farming and processing. This represents about 15 per cent of the regional workforce.
- The estimated value of farmgate production in the region is approximately AUD 687 million.
- Dairy companies manufacturing product in the region include Murray Goulburn Co-operative, Fonterra, Warrnambool Cheese & Butter and National Foods.

Murray Dairy Industry [327]

In 2009/10, dairy farmers in the Murray Dairy region have taken the opportunity to start pastures with irrigation, which benefited from mild autumn conditions. Also, the announcement of increased allocations late in the 2009/10 season has led to increased carryover water for dairy farmers, providing options for irrigating in early spring 2010/11 season.

Industry profile (2009/10)-

- Total milk production for the region reached about 1.84 billion litres, representing 20.5 per cent of national milk output.
- The regional dairy industry directly employs around 8,000 people in both farming and processing.
- The estimated value of farmgate production in the Murray Dairy region was $610 million.
- There are 14 dairy factories including milk processing, milk collection plants and dairy product manufacturing in the region.
- Dairy companies manufacturing product in this region include Murray Goulburn Co-operative, Fonterra, Parmalat, Bega, Tatura Milk Industries and National Foods.

South Australian Dairy Industry [328]

Industry profile (2009/10)-

- There are estimated to be 320 dairy farms in South Australia, producing 620 million litres which represent around 7 percent of national milk production.
- The estimated value of farm milk production in 2009/10 from the region was $205 million.
- There are 17 dairy factories, including milk processing, dairy product manufacturing and milk collection plants.
- Major companies operating in South Australia include Dairy Farmers Milk Company, National Foods, Murray Goulburn Co-operative, Warrnambool Cheese & Butter, Bega Cheese and Fonterra.
- The industry directly employs approximately 2,000 people in the farm sector, and 800 people in the processing sector.

Tasmanian Dairy Industry [329]

Milk prices in this region are largely driven by the annual price offered by Fonterra, who collects the majority of milk in the state. This drives prices offered by a number of other regional processors of cheese and fresh dairy products. Milk produced in this region is mainly used in cheese and powder production for export, as well as fresh dairy products.

Industry profile (2009/10)-

- There are 450 dairy farms in Tasmania, producing approximately 650 million litres which account for is over 7 per cent of national milk production.
- The estimated value of farm milk production from the region was around $211 million.
- The industry directly employs 1,900 people in the farm sector and 800 people in the processing sector.
- Major companies operating in the region include Fonterra Australia, Cadbury and National Foods.

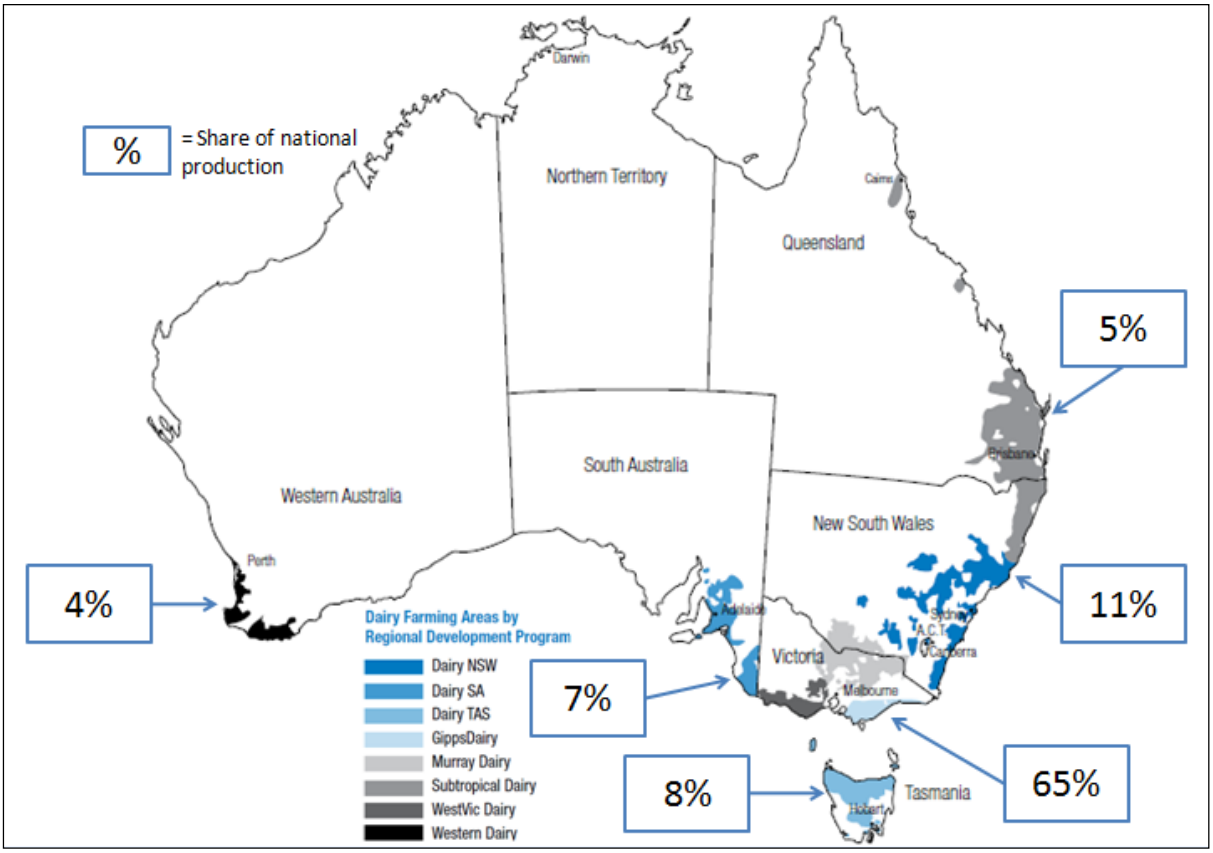
Western Australia Dairy Industry [330]

The Western Australia (WA) dairy region enjoys a reliable climate, good water supply and has the capacity to process large volumes of milk. The region has good access to grain and fodder supplies from the WA grain belt. The majority of milk from the region is processed into fresh dairy products. Milk prices in the region are paid by two major companies (National Foods and Fonterra) and are driven by a combination of factors, including the domestic retail market competition for milk and fresh dairy, the value achieved by Challenge Dairy from manufacturing, and the price necessary to achieve a secure flow of milk for fresh product needs. Potential loss of water resources to city demands over the coming years may put a cap on additional licenses, and provide significant stimulus to water use efficiency practices.

Industry profile (2009/10)-

- Around 170 dairy farmers produced 338 million litres of milk, which represents around 3.8 per cent of national milk production.
- The estimated value of farm milk production was $135 million.
- The dairy industry directly employs around 2,000 people in the region, in both farming and processing.
- There are eight dairy factories in the region including milk processing, dairy product manufacturing and milk collection plants.

Figure 2. Australian Dairy Regions [331]

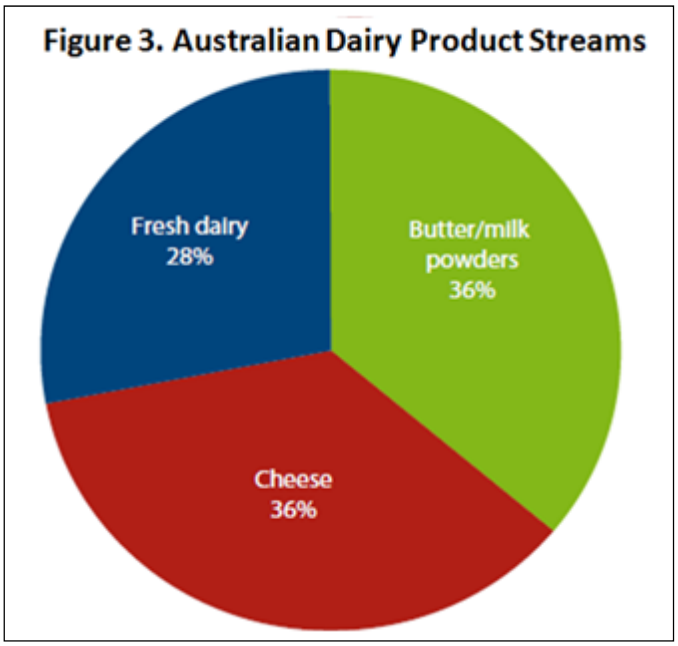


Products and Innovation

Australia's three major manufactured product streams are:

- Fresh dairy products: this stream includes drinking milk and other consumer products such as yogurts, custards and dairy desserts
- Cheese: this includes specialised ingredients such as whey, proteins and nutraceuticals
- Butter and milk powders: this stream includesg skim milk powder (SMP), butter milk powder (BMP), wholemilk powder (WMP) and casein.

Dairy manufacturers have pursued new and innovative, value-added products such as specialty cheeses and drinking milk with increased nutritional value. These initiatives have allowed manufacturers to stay competitive despite the reduced raw milk production. In line with international trends, there was a general trend in Australia's product mix towards cheese and WMP production, and away from butter and SMP lines. However, over the past two years, strong commodity prices motivated a significant re-balancing of company product mixes back towards SMP and butter, to take advantage of the higher relative export returns available from these products.



Around 60% of manufactured product (in milk equivalent terms) is exported. This contrasts with drinking milk, where some 96% is consumed in the domestic market (see Figure 3 for the production proportion of each dairy product stream).

Partners in the Dairy Industry [332]

The Australian dairy industry gets better outcomes, leverage and returns from its programs and projects through the following partnerships with the following Partners In The Dairy Industry. With the significant reduction over the past five years in the number of operational dairy R&D centres as well as total number of staff in research and farm extension, there is a greater need to develop partnerships and collaboration to ensure the best possible use of scarce resources.

- **Australian Dairy Herd Improvement Scheme:** The Australian dairy industry's independent genetic evaluation service.
- **Dairy Extension Centre:** Centre of extension capability and program delivery established by the Victorian Government and Dairy Australia
- **Dairy Futures Cooperative Research Centre (CRC):** The Dairy Futures Cooperative Research Centre (CRC), is a $128 million partnership between Dairy Australia, Australian and Victorian governments, pasture and cattle breeding companies, dairy companies, industry bodies, universities and the CSIRO.

- **Dairy Innovation Australia Limited:** Company formed by membership from Dairy Australia and Australian Dairy Manufacturing Companies
- **Dairy Management Inc:** America's domestic and international planning and management organization that builds demand for dairy products on behalf of America's 60,000-plus dairy producers
- **De Laval:** Company specialising in milking systems, equipment and products
- **Department of Agriculture and Food Western Australia:** Western Australian agency focused on maximising the economic potential of primary industries on a sustainable basis
- **Department of Agriculture, Fisheries & Forestry:** Australian Government agency for agricultural, fisheries, food and forestry industries
- **Department of Primary Industries Victoria:** Victorian agency focused on maximising the economic potential of primary industries on a sustainable basis
- **Geoffrey Gardiner Dairy Foundation:** Funding organisation for the benefit of the Victorian dairy industry and dairying communities
- **National Centre for Dairy Education Australia:** Joint venture between Dairy Australia and GOTAFE responsible for national development and delivery of vocational dairy education
- **National Dairy Alliance:** A voluntary grouping of investors, providers and industry that seeks to improve the sustainable competitiveness of the on-farm sector of the Australian dairy industry
- **National Heritage Trust:** Fund to help restore and conserve Australia's environment and natural resources
- **National Landcare Program:** Program that supports landcare and the sustainable use and management of natural resources
- **NSW Department of Primary Industries:** NSW agency focused on maximising the economic potential of primary industries on a sustainable basis
- **Primary Industries & Resources South Australia:** South Australian agency for food, fibre and minerals industries and economic development
- **Queensland Department of Primary Industries & Fisheries:** Queensland agency focused on maximising the economic potential of primary industries on a sustainable basis
- **Regional Development Victoria:** Victorian Government's lead agency in developing rural and regional Victoria
- **South Australian Research and Development Institute:** Services the research and extension needs of the SA dairy industry
- **Tasmanian Institute of Agricultural Research:** Joint venture between University of Tasmania and the Tasmanian Department of Primary Industries and Water

Development/ dynamics [333]

Issues and Challenges

There are currently various challenges faced by the Australian dairy industry throughout the different stages of its supply chain. These stages include input, milk production, processing and manufacturing, exporting and retailing.

At the input level, while 2009/10 saw a decrease in input prices, the pricing is still volatile. Also, the uncertainty of water access as a result of lower rainfall and increased urban competition poses threat to the development of the dairy industry. This issue is compounded by the competition for arable land in favoured regions.

There are also a number of challenges and issues present at the milk production stage. First, the level of risk for investments and adaptation may affect milk production. Second, major restructuring is likely to be made at the milk production stage in challenged regions, which will in turn impact on the current system and structure. Third, the Emission Trading Scheme, coupled with a limited production growth and increased ethical standards, all have the potential to raise costs above competitors, and this may affect the competitiveness and pricing of Australian products.

Factors that may influence the processing and manufacturing of dairy products include the requirement to divest assets as well as the step down requirement for exporters. In addition, the Emission Trading Scheme may again affect the manufacturing stage, and hence reduce the competitiveness of the dairy industry.

In terms of dairy export, the global economic meltdown has brought several challenges. In 2009/10 the global demand of Australian dairy products appears to be falling. Also, attention needs to be paid to greater volatility and polarisation of markets as well as policy responses to food security issues. However, increased population and wealth in developing countries may drive the demand for dairy products and bring more exporting potential.

Although the sale prices of dairy products are likely to come under pressure, the outlook for the retail stage remains rather positive. Both category value and market growth are still healthy, with the market growing steadily at 1-2%. Also, there has been a reduction in inflationary pressure, which further benefits the selling of dairy products. The only two issues of concern are that consumption decisions are subject to change as these decisions are influenced by environmental and ethical attributes. Also, the rise of supermarket brands may limit the ability for category innovation.

The Industry Response

In response to the aforementioned challenges, various strategies and actions have been planned or executed by the industry. These objectives and activities are set in respect to the industry's production systems, response to climate change and natural resource management, and market access.

Production Systems

- Improving understanding and communication of market information and drivers
- Development of recognised competencies to build skill levels
- Leveraging international networks to maximise technology development and uptake
- Industry demonstrating the ethics and trustworthiness of production

Climate Change and Natural Resource Management

- Rapid adaptation of farming practices
- Continuous improvement in efficiency of resource use
- Modelling of likely climate change impact
- Testing resilience of current farming practices and strategies
- Analysing impacts of ETS implementation on industry viability & informing policy makers

Accessing Markets

- Establishing international networks to create active preference for Australian product and push for reform (Global Dairy Alliance)
- Provide government with technical policy input for FTA negotiations
- Higher margin product mix

Overall, the Australian dairy industry has already faced significant challenges including deregulation, droughts and the financial crisis. However, the industry has also demonstrated its ability to adapt to difficult situations through sharing its view of the challenges and opportunities and addressing these challenges with collective action. One critical element for success now would be the policy environment, which plays an important role in allowing the industry to adapt and further develop.

United States of America Dairy Industry

Abstract

The U.S. dairy industry is sixth largest in the world in terms of milk production and represents more than one-tenth of the total world milk production in 2010. The dairy industry in the U.S. has undergone significant structural change over the past eight years, with the number of large operations increasing and total milk cow operations declining significantly. During the past century the U.S. dairy industry has experienced various changes that range from sharp reduction in total cow numbers, near six-fold increase in average production per cow, decline in the per capita consumption of whole milk equivalent and fluid milk to the marked increase in the consumption of cheese. Current trends show that U.S. milk production is shifting to the western half of the U.S., primarily from the South-Eastern and North-Eastern States. In terms of trade, around 13 percent of U.S. milk production was sold overseas in 2010. Mexico, Southeast Asia and Canada remained the largest destinations for U.S. dairy products, whereas New Zealand, Canada and Italy are the top three countries selling dairy products to the U.S. Government support to the dairy industry is provided through the U.S. federal dairy policy, which has five main components, including dairy product price support through the Dairy Product Price Support Program; Federal Milk Marketing Orders; direct payments under the Milk Income Loss Contract (MILC) Program; the Dairy Export Incentive Program; and tariff-rate quotas on dairy imports. Dairy cooperatives are also one of the major players in the U.S. dairy industry and, as a group, represent the most prominent of all agricultural marketing co-op sectors.

The U.S. dairy industry is under greater pressure to compete more aggressively both domestically and globally in order to secure a share of the consumer's food budget and for resources to keep the industry moving forward. To remain competitive, the U.S. dairy industry needs to focus on assessing and responding to changing supply and demand trends. The operational structures of modern dairy firms and global supply chains are becoming a new source of competitive advantage for the U.S. dairy industry. Multinational firms are investing in the U.S. market and partnering with U.S. firms because of its sheer size, the steady and reliable supply of raw milk, and the dynamism of U.S. consumer demand. In addition, American foreign investment policies are considered to be more liberal than those in other developed markets. Furthermore, in order for the U.S. dairy industry to benefit from the changing dynamics of international trade and existing supply gap, the U.S. needs to pursue beneficial trade treaties, further reduce interference from non-tariff trade barriers, reform federal orders and price support programs to remove internal constraints and improve forward contracts, future markets and risk management tools through cooperation between the dairy industry and government.

Background Information [334] [335] [336]

The U.S. dairy industry is 6th largest in the world in terms of milk production and represents more than 10% of the total milk production in the world in 2010. The dairy industry in the U.S. has undergone significant structural change over the past eight years, with the number of large operations increasing and total milk cow operations declining significantly.

Current trends in the U.S. dairy industry showed that milk production is shifting to the western half of the U.S., primarily from the South-Eastern and North-Eastern States. Comparing 2009 production data to that of 2001, States showing the largest increases were California, Idaho and Texas. The only North-Eastern State with a production increase was New York. Production has also migrated to the upper mid-west, with Wisconsin, Michigan, and Ohio showing the largest increases in that region. States with the largest declines in production were Kentucky, Tennessee, and Missouri. The ten largest milk producing states accounted for nearly 74 percent of the total production of milk in the United States in 2009. Milk production in the country is expected to register a marginal increase of 0.8% in the forecasted period from 2009-2015.

Global demand and supply gap in the milk and dairy products will present a number of internal and external growth opportunities for the U.S. The U.S. milk and dairy market is currently well positioned to serve the milk supply shortage in the world and has prospects to grow its market share in the exports to other countries. There are two types of external growth opportunities available to the U.S. dairy exporters. First, the U.S. could increase its share in the import demand growth in the regions where the economy is highly integrated with the customer market, for example Mexico. Second, the U.S. could encapsulate the latent demand gaps for dairy products that will arise across the rest of the global market. Below are some key statistics for the U.S. dairy industry:

Key Statistics (as of 2010):

Annual Export Volume [337]	USD $3.71 billion (≈EUR2.6 billion as of Aug 2011)
Annual Milk Production [338]	193 billion pounds
Proportion of national milk produce exported [339]	12.8%
Dairy herd [340]	53,127
Average herd size	172
Per capita consumption (Drinking milk- 2009) [341]	204.8 pounds
Per capita consumption (Cheese- 2009)	33.2 pounds

Historical Background to USA Dairy Industry [342] [343] [344]

In the early 1600s immigrants from Europe brought cattle with them to supply their families with dairy products and meat. Although many different breeds of cattle including Durhams, Ayrshires, Guernseys, Jerseys, and Brown Swiss were imported through the next few centuries, it was not until the late 1800s that cattle breeds were developed specifically for dairy purposes. Many dairy farms also grow their own feed such as alfafa, hay and corn, or own or lease pastures where the cows graze.

In rural America, milk and milk products were made primarily for home or local use. However, with the movement of population from the farms to the cities at the turn of the century, it became necessary to increase the scale of production and improve the quality of milk. Significant inventions such as commercial milk bottles, milking machines, tuberculin tests for cattle, pasteurization equipment, refrigerated milk tank cars, and automatic bottling machines contributed towards making milk a healthful and commercially viable product. Today, about 99% of all U.S. dairy farms are family-owned and operated. The majority (77%) have less than 100 cows.

During the past 100 years the U.S. dairy industry has experienced a broad array of major changes including the following trends:

- Sharp reduction in total cow numbers
- Near six-fold increase in average production per cow
- Substantially greater total annual milk production
- Steep decline in the number of herds
- Large increase in the cows per herd
- Shift in cow numbers from the north and east to the west
- Cow population now dominated by Holsteins
- Recent resurgence of Jerseys
- Decline in the per capita consumption of whole milk equivalent and fluid milk
- Marked increase in the consumption of cheese.

Trade [345]

In 2010, U.S. exports of cheese, total whey products, lactose and other dairy products were valued at $3.71 billion, up 63 percent from the prior year. Export volume totalled 3.04 billion pounds of U.S. milk solids, up 40 percent from 2009. U.S. dairy imports increased 2 percent in 2010 to $2.60 billion. On a volume (total solids) basis, imports were the lowest since 1997. Export volume was more than four times the level of imports.

Mexico, Southeast Asia and Canada remained the largest destinations for U.S. dairy products. In 2010, 12.8 percent of U.S. milk production (on a total-solids basis) was sold overseas. On the other hand, New Zealand, Canada and Italy are the top three countries selling dairy products to the U.S. in 2010. See Tables 1, 2 and 3 for further 2010 dairy trade data.

Total value of U.S. dairy exports	$3.71 billion
Total lbs. U.S. milk solids exported	3.04 billion
Percent U.S. milk production exported	12.8%*
Percent of U.S. whey proteins exported	55%
Percent of U.S. skim milk powder/nonfat dry milk exported	47%
Percent of U.S butterfat exported	7.9%
Percent of U.S cheese exported	3.7%
	*Total milk solids

Table 1. U.S. Dairy Export Trade Data 2010 [346]

Rank	Country	2010 Imports (in USD 000s)
1	New Zealand	476,663
2	Canada	384,681
3	Italy	286,392
4	Mexico	181,154
5	France	160,513
6	Netherlands	127,687
7	Ireland	112,027
8	Australia	99,555
9	Denmark	86,427
10	India	79,604
11	Switzerland	74,800
12	Argentina	51,097
13	Spain	47,848
14	Norway	41,851
15	Germany	40,505

Rank	Country	2010 Exports (in USD 000s)
1	Mexico	839,302
2	Canada	468,600
3	China	237,559
4	Japan	203,641
5	Philippines	185,886
6	Indonesia	162,356
7	Vietnam	157,572
8	Korea, South	131,069
9	Egypt	109,881
10	Malaysia	94,273
11	Russia	83,162
12	Saudi Arabia	71,678
13	Morocco	65,376
14	Thailand	54,039
15	Australia	53,881

Tables 2 and 3. Countries selling and buying dairy products to and from the U.S. (2010) [347]

Products traded [348]

Whey

- The United States exported 55 percent of the whey proteins it produced in 2010. U.S. exports of whey proteins in 2010 were 997 million lbs and exports of sweet whey increased 23 percent to 557 million lbs.
- China and Southeast Asia continue to drive whey volume, accounting for more than half of 2010 exports. Sales to the pair were up 37 percent. Among other major markets for U.S. whey products, exports to Mexico were up 4 percent, Canada up 23 percent, Japan up 17 percent and South Korea up 41 percent.

Skim Milk Powder/Non-fat Dry Milk (NDM/SMP)

- The United States exported 47 percent of the SMP/NDM it produced last year. 847 million lbs. of non-fat dry milk/skim milk powder and 117 million lbs. of whole milk powder (WMP) were shipped last year.

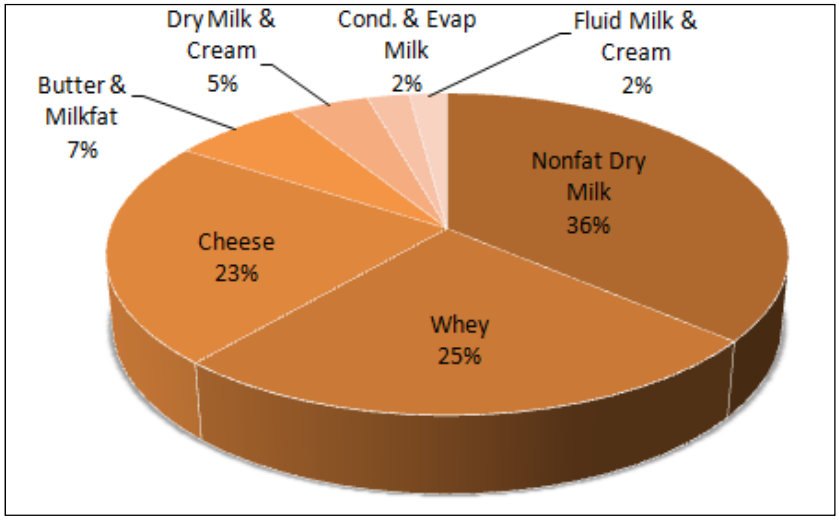
Cheese

- The United States exported 3.7 percent of the cheese it produced in 2010. U.S. cheese exports jumped to 383 million lbs. in 2010, up 60 percent from the prior year. 2010 shipments were driven by strong business in South Korea, Japan and Middle East/North Africa. Mexico remained the largest market for U.S. cheese exporters, taking 108 million lbs.

Lactose

- The U.S. exported 68 percent (605 million pounds) of the lactose produced in 2010. Major markets remain Southeast Asia, China and Japan, with significant new sales realized in Oceania, Brazil and Mexico.

Figure 1. USA Dairy Export By Product Value 2010 [349]



Key Policies and Industry Structure

Current Dairy Policy [350] [351]

Current federal dairy policy has essentially five components: dairy product price support (through the DPPSP); federal milk marketing orders (FMMOs); direct payments under the Milk Income Loss Contract (MILC) Program; the Dairy Export Incentive Program; and tariff-rate quotas on dairy imports. See Figure 2 for an overview of U.S. dairy programme subsidies from 2001-2010.

- **Dairy Product Price Support Program (DPPSP)**

Under the DPPSP, the federal government stands ready to purchase butter, American cheese, and nonfat dry milk from dairy manufacturers at specified minimum prices. Purchases under the DPPSP, which occurred during FY2009 when demand declined, essentially prevent market prices for dairy products from dropping below support levels, which indirectly supports the farm price of milk. In contrast, when product prices are above support levels, the DPPSP is not a factor in the market and farm milk prices reflect prevailing supply and demand conditions.

- **Federal Milk Marketing Orders (FMMOs)**

Marketing orders were created in the 1930s to balance market power between farmers and milk handlers while reducing "destructive competition" between milk producers that can drive down prices to their mutual detriment. FMMOs mandate minimum prices that processors in milk marketing areas must pay producers or their agents (like the dairy cooperatives) for delivered milk depending on its end use. Under FMMOs, the farm price of approximately two-thirds of the nation's fluid milk is regulated in 10 geographic marketing areas. Some states, California being the largest, have their own milk marketing regulations instead of federal rules.

- **Milk Income Loss Contract (MILC) Program**

Under the Milk Income Loss Contract (MILC) Program, participating dairy farmers nationwide are eligible for a federal payment whenever the minimum monthly price for farm milk used for fluid consumption (called "Class I") in Boston falls below $16.94 per cwt. Eligible farmers then receive a payment equal to 45% of the difference between the $16.94 target price and the lower monthly price. The payment quantity is limited to 2.985 million pounds of annual production (equivalent to about a 160-cow operation). USDA's Farm Service Agency administers the MILC Program.

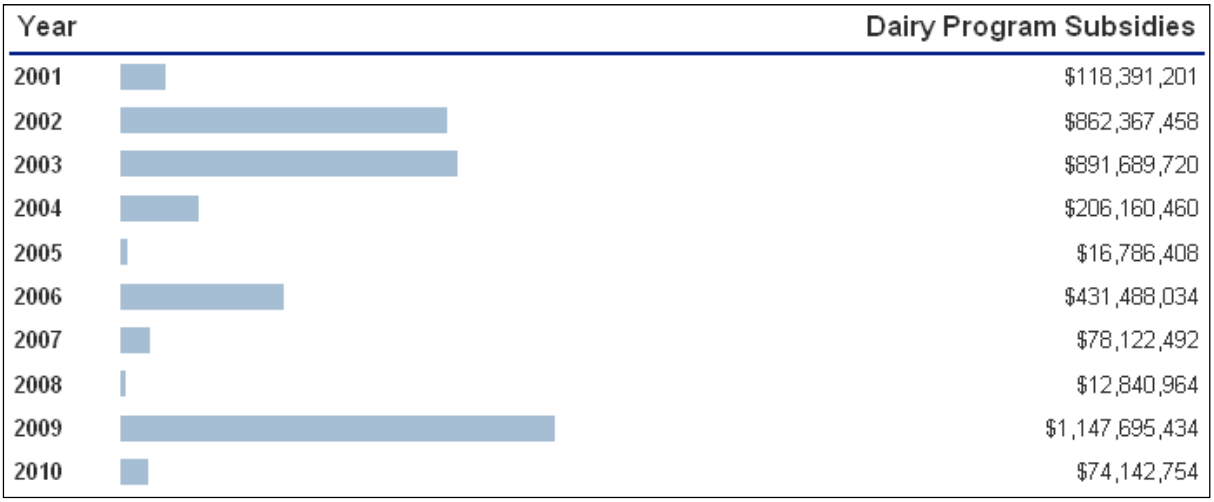
- **Dairy Export Incentive Program (DEIP)**

First authorized in 1985, the Dairy Export Incentive Program (DEIP) provides cash bonus payments to U.S. dairy exporters, subject to limits on both quantity and value. The program was initially intended to counter foreign—mostly European Union—dairy subsidies (while removing surplus dairy products from the market), but subsequent farm bill reauthorizations have added market development to the role of DEIP. Payments since the program's inception have totalled more than $1 billion. The program was active throughout the 1990s, peaking in 1993 with $162 million in bonuses. The program had not been used since FY2004 until USDA announced its reactivation on May 22, 2009.

- **Import Barriers**

Legislation to implement the World Trade Organization (WTO) Uruguay Round Agriculture Agreement amended Section 22 to prohibit the application of quantitative import limitations or fees on products from other WTO members. Tariff rate quotas (TRQs) for dairy products were established in the U.S. tariff schedule.10 Importers of dairy products under the low tariff in a TRQ must apply for a license from USDA. No license is required for over-quota imports, which are subject to a higher tariff.

Figure 2. U.S. Dairy Programme Subsidies from 2001-2010 [352]



Dairy Market Stabilization Program [353]

The National Milk Producers Federation (NMPF) has proposed another option, called the Dairy Market Stabilization Program (DMSP), with the goal of moderating domestic price volatility. In its explanation of the DMSP, NMPF asserts that DMSP will actually "encourage exports" and "discourage imports." Recent analyses, however, show that the DMSP is not consistent with NMPF's guiding principles and claims. A recent study by the Food and Agricultural Policy Research Institute (FAPRI) analyzed the DMSP proposal in a report first published in early March. Contrary to NMPF's claim that the program would encourage exports, the additional FAPRI appendix data directly predicts that U.S. dairy exports would have dropped significantly if the DMSP had triggered limits to farm milk production during the dates reviewed. Yonkers (2011) suggests that it is likely that the program would have caused even greater declines in U.S. milk powder exports if it had been in place in 2009.

Dairy Cooperatives [354] [355]

Dairy cooperatives, as a group, represent the most prominent of all agricultural marketing co-op sectors. As of 2007, Dairy Cooperatives marketed 71 percent of the nation's butter, 96 percent of nonfat and skim milk powders, 26 percent of natural cheese and 42 percent of dry whey products. Their shares of "soft" and cultured products were less significant: 4 percent of ice cream, 13 percent of ice cream mix, 11 percent of yogurt and 14 percent of sour cream. Co-ops processed 7 percent of the nation's packaged fluid milk products in 2007. See Table 4 for 2009 U.S. dairy cooperative statistics.

Through joining dairy cooperatives, dairy farmers seek to jointly and efficiently market their milk far better than they could as individuals. The functions and services the farmers demand of their respective cooperatives vary, depending on the specific market situation the members of a cooperative face and their particular needs. In the U.S., there are two particular types of dairy cooperatives, with bargaining-only cooperatives being the prominent type.

Bargaining-only cooperatives- These cooperatives focus their operations on negotiating milk prices and terms of trade for members' raw milk, but do not engage in further manufacturing or processing.

Manufacturing/processing cooperatives- These cooperatives own manufacturing facilities improves a cooperative's ability to balance member milk supply with customer demand, strengthening its negotiating position. These cooperatives can provide their customers a full supply of raw milk and remove the burden of disposing of unneeded milk.

- *Commodity manufacturing cooperatives:* operate large-scale commodity manufacturing plants making undifferentiated or generic "hard products" in bulk, such as butter, nonfat dry milk powder, and cheese.
- *Niche marketing cooperatives:* manufacture and market specialty dairy products for niche markets
- *Fluid processing cooperatives:* typically make other products in addition to fluid milk, such as ice cream and soft dairy products (yogurt, sour cream, dips). These fluid processing or "bottling" cooperatives also capture processor margins and at least some marketing margins through their operations.
- *Diversified cooperatives:* operate a system of plants to manufacture a variety of dairy products. At the same time, they sell a substantial portion of their milk supply to other handlers.

State	Headquartered in State	Memberships	Net Business Volume (USD millions)
California	5	1,400	4,343
Idaho	3	300	358
Illinois	4	2,100	1,244
Iowa	4	2,200	1,117
Minnesota	26	6,900	2,621
New Mexico	4	100	465
New York	34	3,500	1,783
Pennsylvania	14	3,900	1,005
Wisconsin	26	14,700	3,347
Other States	34	18,000	11,455
United States	**154**	**53,100**	**27,738**

Table 4. U.S. Dairy Cooperative Statistics (2009) [356]

Regional Strengths [357]

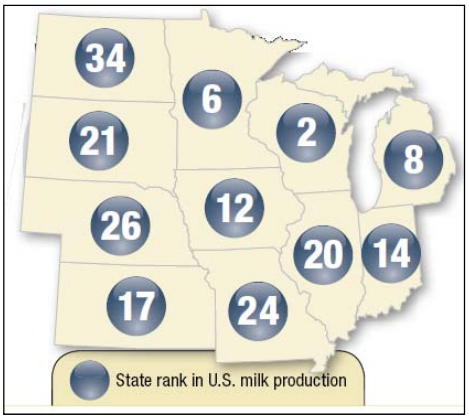
Regions

In 2010, the Southwest region of the U.S. produced the greatest volume of milk, followed by the Midwest region, East Coast region and finally Northwest region. Yet the Northwest region grew the most in terms of dairy production in 2010, where milk production increased by 4.6 percent. It was the only region to have a percentage of milk production increase greater than the total U.S. increase. The northwest region was also the only region in which dairy producers were milking more cows in 2010 than they were in 2009. States in the Midwest reported the largest decline in number of dairy farms in 2010, losing more than 1,000 milking herds, which accounted for more than half of all the dairies going out of business. The Southwest took over the title of highest average annual per-cow milk production from the Northwest. Cows in the Southwest produced an average of 22,846 pounds in 2010.

Midwest region

- Produced 61 billion pounds of milk
- Has 3 million dairy cows
- Produced 20,464 pounds of milk per cow
- Has 26,615 licensed dairy herds
- 111-cow average herd size

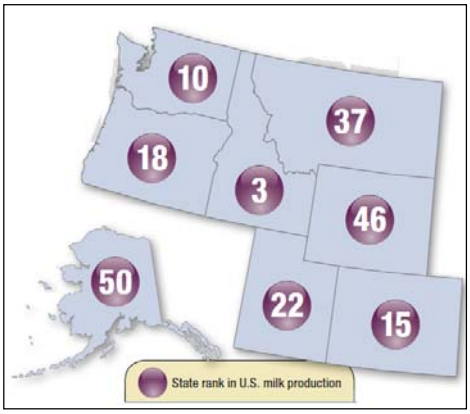
The Midwest region produces 32% of U.S. total dairy production



Northwest region

- Produced 26 billion pounds of milk
- Has 1.16 million dairy cows
- Produced 22,573 pounds of milk per cow
- Has 1,780 licensed dairy herds
- 650-cow average herd size

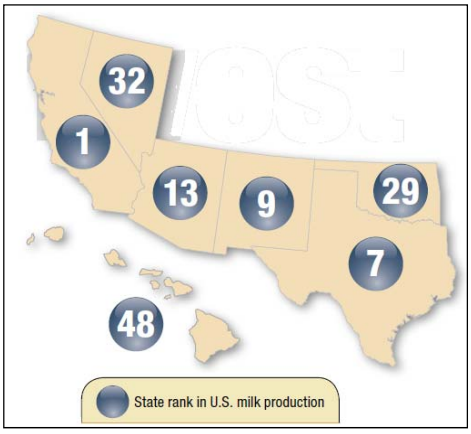
The Northwest region produces 12.5% of U.S. total dairy production



Southwest region

- Produced 62.8 billion pounds of milk
- Has 2.8 million dairy cows
- Produced 22,846 pounds of milk per cow
- Has 2,827 licensed dairy herds
- 973-cow average herd size

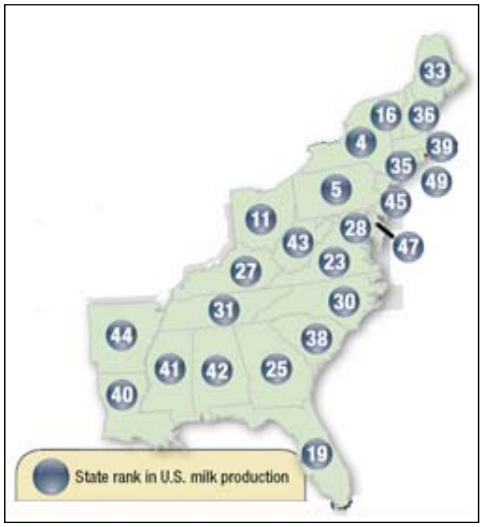
The Southwest region produces 30% of U.S. total dairy production



East Coast region

- Produced 43.3 billion pounds of milk
- Has 2.3 million dairy cows
- Produced 19,211 pounds of milk per cow
- Has 21,905 licensed dairy herds
- 103-cow average herd size

The East Coast region produces 25% of U.S. total dairy production



States

In 2010, California is ranked first by total milk production, with 40,385 million pounds produced. This is followed by Wisconsin with 26,035 million pounds and Idaho with 12,779 million pounds. See Table 5 for the number of dairy manufacturing plants in each U.S. State and Appendix 1 for the top 25 U.S. States by milk production.

AL	4	HI	7	MA	22	NM	6	SD	9
AK	2	ID	19	MI	41	NY	108	TN	11
AZ	6	IL	41	MN	63	NC	14	TX	58
AR	3	IN	20	MS	1	ND	9	UT	21
CA	106	IA	26	MO	16	OH	56	VT	25
CO	9	KS	5	MT	7	OK	9	VA	3
CT	23	KY	16	NE	8	OR	19	WA	10
DE	2	LA	5	NV	3	PA	75	WV	3
FL	59	ME	22	NH	8	RI	4	WI	210
GA	8	MD	9	NJ	60	SC	2	WY	0
US Total: 1,273									

Table 5. Number of Dairy Manufacturing Plants by U.S. State (2010 data) [358]

Development/ dynamics [359] [360] [361]

A number of trends and changes can be observed in the U.S. dairy industry currently. First, configurations of dairy firms have taken place and fewer firms are converting milk into fluid and manufactured products demanded by end-users such as retail supermarket consumers or hotel and restaurant purchasing agents. Second, the growing demand for milk and dairy products is also changing. Third, new uses for dairy components (such as individual proteins and lactose) and dairy-based products are emerging. Fourth, the dairy consuming population is becoming more diverse.

The U.S. dairy industry is under greater pressure to compete more aggressively both domestically and globally in order to secure a share of the consumer's food budget and for resources to keep the industry moving forward. Competition in the food industry is marked by offerings to consumers of a continuously expanding variety of products, including nutritious, high-quality, specialised and non-dairy substitutes. To remain competitive, the U.S. dairy industry needs to focus on assessing and responding to changing supply and demand trends. Efficient farm-level milk production and use of that milk in high-demand products are essential to providing both producers and investors adequate returns on their investments. Ensuring the development of well coordinated supply chains will also assist dairy firms and producers with competing in a global industry.

The operational structures of modern dairy firms and global supply chains are becoming a new source of competitive advantage for the U.S. dairy industry. Multinational firms are investing in the U.S. market and partnering with U.S. firms because of its sheer size, the steady and reliable supply of raw milk, and the dynamism of U.S. consumer demand. In addition, American foreign investment policies are considered to be more liberal than those in other developed markets. In the U.S. market, multinationals can take advantage of economies of scale in terms of production distribution and marketing. When companies have greater flexibility to procure inputs and sell outputs in a more liberal trading environment, returns to milk producers are improved. Companies adjust their production and marketing strategies because of market conditions and policy environment.

In a global sense, dairy product demand and the dynamics of international trade are changing, with milk supply becoming more constrained in some parts of the world and less so in other regions. This factor alone requires international dairy companies to reposition themselves in global markets. Blayney et al. (2006) suggest that the United States, as a low cost milk-producing country, is benefiting in the current environment where long-term growth is less certain due to domestic resource constraints. If subsidised exports from countries with heavily protected dairy industries and import barriers were reduced further, the U.S. dairy sector may benefit even more. On the other hand, the role and extent of U.S. dairy policy is less clear today than in the past. The efforts of U.S. milk suppliers, processors, and product marketers to improve competitiveness depends more on innovation, flexibility, and investment than on policy support.

US Dairy Opportunity in Overseas Markets [362]

Strong global demand growth is driving import buying in China, Russia, Southeast Asia, Mexico and the Middle East. According to the U.N. Food and Agriculture Organization's (FAO's) "Food Outlook", in 2010, world dairy trade rose nine percent to nearly 46 million tonnes milk equivalent.

Furthermore, FAO projects a further 4.5 percent gain to 48.2 million tonnes in 2011. For U.S. suppliers, the current global situation is different from 2008 and 2009 when milk shortages overseas created a supply opportunity for U.S. companies. Today, supply is strong in general through most of the world, though it is still insufficient to handle demand. The responsibility to develop and grow U.S. dairy export market share and expand the U.S. trade surplus falls on the U.S. industry. This needs to be achieved though cooperation between the dairy industry and government to create conditions that support U.S. participation in a globalised dairy market. Important initiatives include:

- Pursuing beneficial trade treaties.
- Reducing interference from non-tariff trade barriers by creating a better U.S. system to address such issues and pursuing tougher international guidelines to minimise instances before they occur.
- Reforming Federal Orders and price support programs to remove internal constraints to pursuing global markets and to position the U.S. industry to be as nimble and flexible as it needs to be to succeed.
- Improving forward contracts, futures markets and risk management tools to allow the U.S. industry to cope with the rising volatility inherent with a fine balance in global demand and supply.

Appendix 1.

Rank	State	Total milk production (in million lbs)	Number of cows (in 000s)	No. of licensed dairy herds	Average herd size
1	California	40,385	1,754	1,710	1,026
2	Wisconsin	26,035	1,262	12,710	99
3	Idaho	12,779	564	585	964
4	New York	12,713	611	5,380	114
5	Pennsylvania	10,734	541	7,340	74
6	Minnesota	9,102	470	4,540	104
7	Texas	8,828	413	590	700
8	Michigan	8,327	358	2,230	161
9	New Mexico	7,881	321	140	2,293
10	Washington	5,901	251	460	546
11	Ohio	5,270	271	3,250	83
12	Iowa	4,337	209	1,790	117
13	Arizona	4,149	177	110	1,609
14	Indiana	3,434	169	1,660	102
15	Colorado	2,816	119	130	915
16	Vermont	2,522	136	1,020	133
17	Kansas	2,499	119	390	305
18	Oregon	2,399	118	270	437
19	Florida	2,127	114	140	814
20	Illinois	1,917	100	860	116
21	South Dakota	1,884	92	375	245
22	Utah	1,819	85	240	354
23	Virginia	1,719	95	705	135
24	Missouri	1,445	99	1,630	61
25	Georgia	1,395	78	260	300

Top 25 U.S. Dairy States by Milk Production (2010) [363]

Indian Dairy Industry

Abstract

India is the world's largest producer of dairy products by volume, accounting for more than 13% of world's total milk production, and it also has the world's largest dairy herd. As the country consumes almost all of its own milk production, India was neither an active importer nor an exporter of dairy products prior to year 2000. However, since the implementation of Operation Flood Programme, the situation changed significantly and imports of dairy products reduced to very small quantities. From 2001, India has become a net exporter of dairy products and after 2003 India's dairy import has dipped while exports have increased at a fast rate. Yet the country's share in global dairy trade still remains at minor levels of 0.3 and 0.4 percent for exports and imports respectively. This is due to the direct consumption of liquid milk by the producer households as well as the demand for processed dairy products that has increased with the growth of income levels, which have left little dairy surpluses for export. Nevertheless, India consistently exports specialty products such as casein for food processing or pharmaceuticals. The Indian dairy sector is also different from other dairy producing countries as India places its emphasis on both cattle and buffalo milk. In 2010, the government and the National Dairy Development Board have drawn up a National Dairy Plan (NDP) that proposes to nearly double India's milk production by 2020. This plan will endeavour to increase the country's milk productivity, improve access to quality feeds and improve farmer access to the organised market. These goals will be achieved through activities that focus on increasing cooperative membership and growing the network of milk collection facilities throughout India.

Despite its huge production volume, India nevertheless faces a milk supply gap due to increasing demand from a growing middle class population. Estimation suggests that Indian dairy production is growing at a rate of about four percent per year, yet consumer demand is growing at approximately double that rate. Apart from the rapidly increasing demand for milk and dairy products, other reasons such as the increased cattle feed cost and low availability of dairy farm labour in the rural areas have also resulted in increase in the cost of production. On the other hand, the strong pressure from EU to open up its market as well as the proposed free trade agreement with Australia and New Zealand may also put India's dairy sector in the risk of being jeopardised. In order to maintain the development of its dairy industry, focus needs to be placed on several areas. First, cost of production has to be reduced through increasing productivity of animals, improve animal health care and breeding facilities and management of dairy animals. Second, Indian dairy industry needs to further develop proper dairy production, processing and marketing infrastructure, which is capable of meeting international quality requirements. Third, India can focus on buffalo milk based speciality products, such as Mozzarella cheese, in order to meet the needs of the target consumers.

Background Information

India is the world's largest producer of dairy products by volume and has the world's largest dairy herd. The country accounts for more than 13% of world's total milk production and is also the world's largest consumer of dairy products, consuming almost all of its own milk production. Dairying has been regarded as one of the activities that could contribute to alleviating the poverty and unemployment especially in the drought-prone and rain-fed areas. In India, about three-fourth of the population live in rural areas and about 38% of them are poor. Therefore among these people, as well as the large vegetarian segment of the country's population, dairy products provide a critical source of nutrition and animal protein to millions of people in India. [364] [365]

Prior to year 2000, India was not noticed by most international dairy companies, as the country was neither an active importer nor an exporter of dairy products. Although India has imported some milk powder and butter oils as aid between 1970 and 1990, exports from India were insignificantly small and it was not until 2000 onwards, when Indian dairy products started having more presence in global markets. [366]

Milk production in India has developed significantly in the past few decades from a low volume of 17 million tons in 1951 to 110 million tonnes in 2009. Currently, the Indian dairy market is growing at an annual rate of 7%. Despite the increase in production, a demand supply gap has become imminent in the dairy industry due to the changing consumption habits, dynamic demographic patterns, and the rapid urbanization of rural India. This means that there is an urgent need for the growth rate of the dairy sector to match the rapidly growing Indian economy. [367]

Below are some key statistics for India's dairy industry:

Key Statistics:

Annual Milk Production (2008-9)[368]	108.5 Million Tonnes
Annual Export Volume (2008-9)[369]	70,790 Tonnes
Share of world dairy production (2010)[370]	15%
Share of world trade in dairy products (2003)[371]	0.3%
Milking herd size [372]	115.5 million
Number of milk producers' cooperative unions	170
Number of local dairy cooperatives	96,000
Number of state cooperatives [373]	15
Per capita consumption (Drinking milk) [374]	250g/day
Estimated percentage of dairy farmers in organised sector [375]	40-50%
% of dairy produce consumed by unorganised sector [376]	65%
Dairy industry workforce [377]	75 million women/ 15 million men

Trade [378] [379] [380]

Despite having the world's largest milk production, India is a very minor player in the international market. Prior to the 1970s, India was primarily an import dependent country and anhydrous milk fat, butter and dry milk powders were imported to meet the needs of urban consumers. However, with the implementation of Operation Flood Programme in 1971 (see "Key Players and Ownership" section), the situation changed significantly and imports of dairy products reduced to very small quantities. In the 1990s imports and exports kept edging each other out, and from 2001, India has become a net exporter of dairy products. After 2003, India's dairy import has dipped while exports have increased at a fast rate, yet the country's share in global dairy trade still remains at minor levels of 0.3 and 0.4 percent for exports and imports respectively. This is due to the direct consumption of liquid milk by the producer households as well as the demand for processed dairy products that has increased with the growth of income levels, which have left little dairy surpluses for export. Nevertheless, India consistently exports specialty products such as casein for food processing or pharmaceuticals.

In 2009, around half of India's total dairy import by volume consist of butter and other dairy derived fats, followed by lactose (33 percent), and milk powder (eight percent). Import of milk and milk products is permitted without any quantitative limitations, although tariff rate quotas apply and import permits are required. On the other hand, in terms of exports, milk powders and baby food constituted more than 40 percent of India's total dairy exports by volume, followed by casein, milk and cream, butter and other fats, and other processed dairy products in 2009 (See Figure 1 for Indian dairy exports by product types). Almost all of India's dairy exports are meant for Asian and African countries. In Asia, neighbouring countries in South Asia and the Middle East are the main buyers. Around half of India's exported dairy products are shipped to Bangladesh, the United States, U.A.E, and Singapore (see Figures 2 and 3 for Indian dairy export volume and value by destination). Despite many efforts, India has not been able to breach the European markets, while the market in South America remains untapped. Export figures clearly illustrate that the Indian dairy export is still developing and the surpluses are not systemic nor consistent. However, there future outlook for export of Indian dairyt products is rather positive, as indigenous milk products and desserts are becoming popular with the ethnic population spread all over the world and there is a strong likelihood that the export demand for these products will grow.

Figure 1. Indian Dairy Exports by Product Types (2008/9) [381]

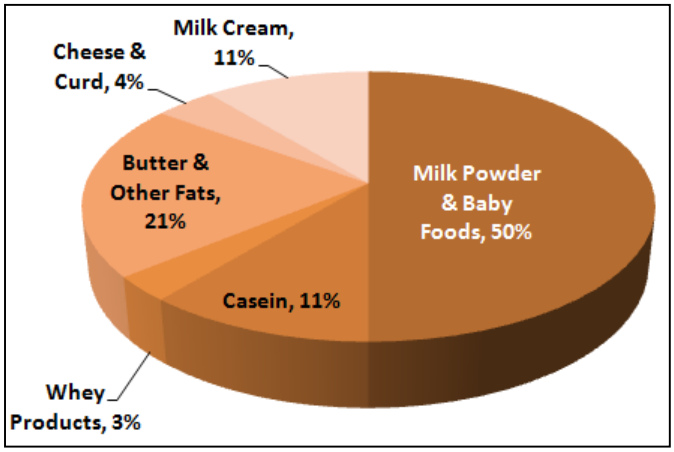


Figure 2. Exports of Indian Dairy Products by Country [382]

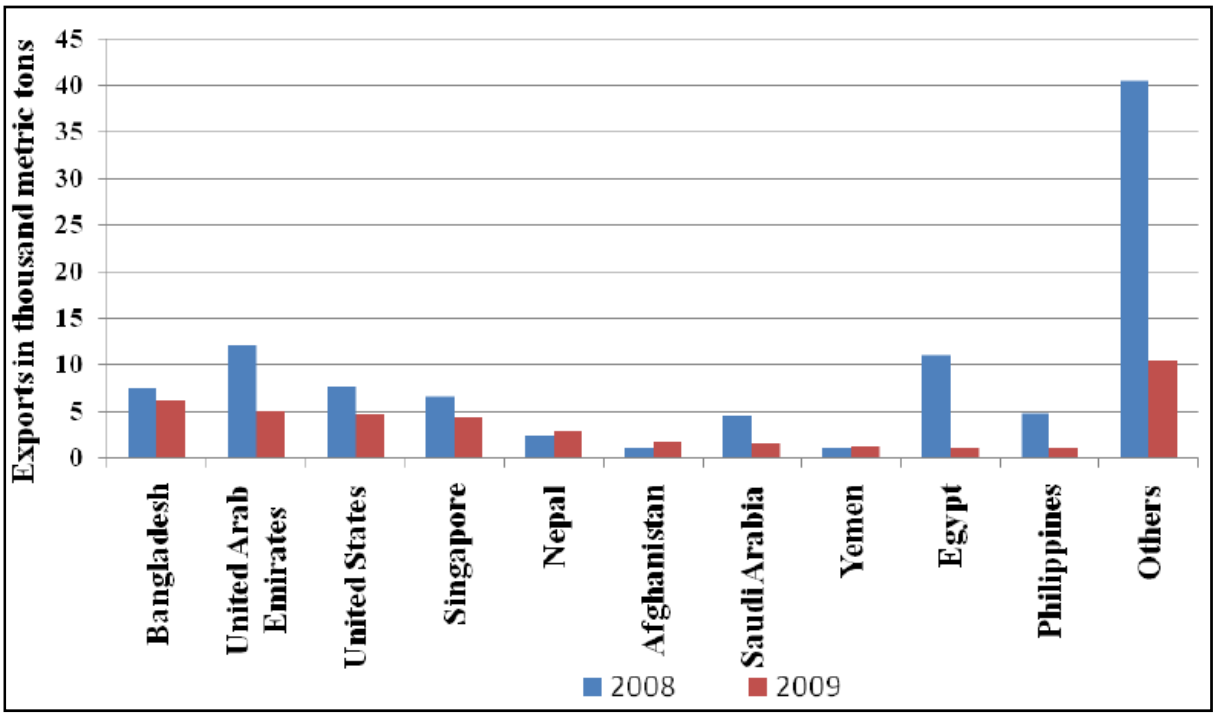
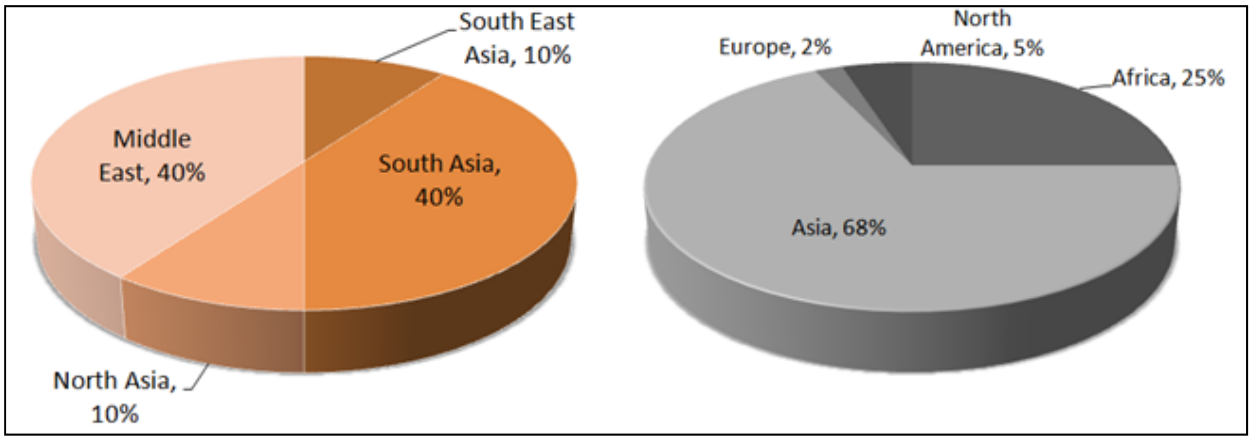


Figure 3. India's Dairy Export Destinations by Value and Dairy Exports in Asia by Value (2005/6) [383]



Key Players and Ownership

Production Policy and Regulation of Dairy Products [384]

Dairy production in India runs on a low input-low output system, in which individual producers typically own less than five cattle or buffalo and use locally available feeds. This has resulted in yield levels that are below international averages but also the world's lowest production costs. As dairy product prices and income from milk collection continue to increase, farmers are slowly growing herd sizes and increasing their specialisation. In addition, interests from private sector investors have also facilitated construction of larger dairies through partnering with dairy processors.

Through implementing various incentive schemes, Indian policy makers are aiming to increase the country's dairy output. Examples of these schemes include the Ministry of Agriculture's research programs, imports of bovine semen and embryos, the National Project for Cattle and Buffalo Breeding, which focuses on improving Indian indigenous breeds with an allocation of USD 255 million. On the other hand, support is also offered by the private sector through activities such as artificial insemination services, training for veterinary care and other livestock management skills.

In 2010, the government and the National Dairy Development Board have drawn up a National Dairy Plan (NDP) that proposed an expenditure of around USD 378 million to nearly double India's milk production by 2020. This plan will endeavour to increase the country's milk productivity, improve access to quality feeds and improve farmer access to the organised market. These goals will be achieved through activities that focus on increasing cooperative membership and growing the network of milk collection facilities throughout India.

In addition, the new Food Safety and Standards Authority of India has consolidated various previous policies that set the sanitary requirements for food safety, machinery, premises, quality control, certification, packing, marking and labelling standards for all food products, including milk and milk products and aims to regulating food safety in India through one overarching regulation. The forthcoming regulation, named The Food Safety and Standards Regulation, is implemented in 2011. Although the Food Safety and Standards Authority of India sets the safety standards for both domestically produced and imported milk and dairy products, the Ministry of Agriculture's Department of Animal Husbandry, Dairying and Fisheries is the entity that is responsible for issuing sanitary permits for the import of livestock and dairy products into India.

Cooperative Movement in Dairying [385]

Immediately after India gained independence in 1947, the Milk Control Board was established to control the dairy supply and distribution chains. However, a number of issues emerged. First, the middlemen got hold of the sales profit and the share of producers in the sales declined. Second, as processing units were set up in cities, it became difficult for the milk to be procured and transported the production centres in the rural areas. Consequently, the yield of milk declined and imports of milk powder went up.

While the government was trying to deal with these problems, a cooperative was set up in the village of Kaira in Gujarat to collect, process and market milk. Subsequently, the Kaira Cooperative Union established a marketing agency named Gujarat Cooperative Milk Marketing Federation, which follows a three-layer structure that collects, processes and markets dairy products at village, district and state levels. The district units also provide technical support to the milk producers and a range of services such as feed, veterinary care, artificial insemination, education and training. These milk cooperatives of Gujarat today own the GCMMF, the largest food products business in India. GCMMF is also the largest exporter of dairy products from India and owns the brand Amul. The foundation of Indian dairy industry's cooperative movement was thus set and federal and egalitarian structure of these cooperatives ensured social and economic equity. The government then set up the National Dairy Development Board (NDDB) in 1965, which prepared a blueprint for a dairy revolution across the country. The revolution was known as Operation Flood,

Operation Flood Era [386] [387] [388]

India's dairy sector witnessed a spectacular growth between 1971 and 1996; the period was known as the Operation Flood era. An integrated cooperative programme aimed at developing the dairy industry was implemented in three phases, with The National Dairy Development Board designated by the Government of India as the implementing agency. The major objective was to provide an assured market round the year to the rural milk producers and to establish linkage between rural milk production and urban market through modern technology and professional management. The Operation Flood was one of the world's largest rural development programmes which ran for 26 years and eventually helped India to emerge as the world's largest milk producer. As part of the programme, around ten million farmers were enrolled as members of about 73000 milk cooperative societies. Since the implementation of this programme, milk production increased from 21 million tonnes in 1970 to nearly 69 million tonnes in 1996, at the compound growth rate of 4.5 per cent. By 1996, milk cooperatives attained a dominating share of the Indian dairy market - butter 96%, pasteurized liquid milk over 90%, milk powder 59% and processed cheese 85%. India was reckoned as a major threat in the dairying world. In retrospect, it was by no means an easy task.

Industry Structure, Production and Consumption

Industry Structure[389] [390]

While it is estimated that around 40 to 50 percent of Indian dairy farmers are employed by the organised sector, approximately 65 percent of milk in India is consumed (in fluid or processed forms) on farm or by the unorganised sector including local milk vendors, wholesalers, retailers, and the producers themselves. Of the total milk distributed jointly by both the organised and unorganised sector, around 46 percent of the milk is consumed in fluid form and the rest is processed into various milk products such as butter, yogurt and milk powder.

India's milk processing industry is small compared to the large amount of raw milk produced every year. Almost 55 percent of the milk produced is consumed by the producer household. Of the remaining, two-third is sold in informal markets and 15-16 percent of the total milk produced in India is processed by the organised market, including dairy cooperatives and the private sector. During 1999-2000, there were around 770 dairy processing units in the organised sector. Vendors and milk dealers dominate the informal market where the former generally procures milk from producers and sells them to urban households, while the latter supplies to private processing units. Of the milk that enters the formal and informal market, almost 45 percent is consumed in the raw form while the remaining is processed to produce ghee, khoa, butter, curd, milk powders, cottage cheese, etc. Please see below (Table 1) for an overview of India's milk production volume by State.

Production [391]

The Indian dairy sector is different from other dairy producing countries as India places its emphasis on both cattle and buffalo milk. Out of all bovine population in India, 40 percent are indigenous cows, 46 percent are buffaloes and 14 percent are imported European or North American cattle crossbreeds. Out of the nation's total milk production, about 55 percent comes from buffaloes, and the remainder from dairy cows (See Table 2 for India's dairy product mix and Table 3 for dairy livestock population by species). Traditionally, buffalo milk has been preferred for its high milk fat content. However, as the organised sector procures more milk, dairy cattle becoming more popular due to their increased yields and shorter dry periods.

State	2008/9	State	2008/9	State	2008/9
All India	108,463	Madhya Pradesh	6,855	Uttar Pradesh	19,537
Andhra Pradesh	9,570	Maharashtra	7,455	West Bengal	4,176
Arunachal Pradesh	24	Manipur	78	A&N Islands	26
Assam	753	Meghalaya	77	Chandigarh	47
Bihar	5,934	Mizoram	17	D&N Haveli	4
Goa	59	Nagaland	53	Daman & Diu	1
Gujarat	8,386	Orissa	1,672	Delhi	285
Haryana	5,745	Punjab	9,387	Lakshadweep	2
Himachal Pradesh	884	Rajasthan	9,491	Pondicherry	46
J & K	1,498	Sikkim	49	Chhattisgarh	908
Karnataka	4,538	Tamil Nadu	5,673	Uttaranchal	1,230
Kerala	2,441	Tripura	96	Jharkhand	1,466

Table 1. Indian Milk Production by State (in thousand tonnes) [392]

Consumption growth and industry response [393]

Despite its huge production volume, India nevertheless faces a milk supply gap due to increasing demand from a growing middle class population. Estimation suggests that Indian dairy production is growing at a rate of about four percent per year, yet consumer demand is growing at approximately double that rate. In response to increasingly strong demand for milk products, the Indian dairy industry is growing its milk production in several ways. For example, dairy farmers have responded to increasing dairy prices by increasing herd sizes. In addition, those farmers working directly with buyers from the organised sector generally have access to modern extension services, which provide support for the dairy farmers to improve management, feeding, fertility and veterinary care. Many of these extension service providers offer artificial insemination services that aim to further improving milk yields with new dairy cattle genetics. Artificial insemination services are expected to grow in the future, as the government of India continues to develop protocols for imported genetics products. Finally, commercial dairies are also continuing with strengthening their presence in India.

Product	Percentage
Fluid Milk	46.0%
Ghee (clarified butter)	27.5%
Butter	6.5%
Yogurt	7.0%
Khoa (partially dehydrated condensed milk)	6.5%
Milk Powder	3.5%
Paneer (cottage cheese)	2.0%
Others, including Cream, Ice Cream	1.0%

Table 2. India's Dairy Product Mix (2009) [394]

Species	(In millions)
Cattle	185.2
Adult Female Cattle	64.5
Buffalo	97.9
Adult Female Buffalo	51
Total Bovines	**283.1**
Goat	124.4

Table 3. Dairy Livestock Population in India by Species (2003) [395]

Development and Future Outlook

Trade[396] [397]

While the decade of 2000-10 has seen positive level of dairy exports from India, the next decade is predicted to be different and signs of change are already visible. Due to low global dairy prices and high domestic costs, India is finding it difficult to sustain exports of dairy products. On the other hand, factors such as the reintroduction of subsidies by European Union, devaluation of currency of New Zealand (a major dairy exporting country), combined with continuing global economic downturn, have made dairy imports into India attractive. It is predicted that dairy commodities will be the first large-scale imports and will be used by Indian dairy cooperatives and companies to make reconstituted milk and other branded dairy products. This may be followed by Imports of branded dairy products.

In the past, India has not been permitting free import of dairy products. As the country's dairy sector employs 90 million people, India has advocated that milk and cheese be excluded from the scope of free trade agreement under negotiations with the European Union. However, despite Indian government's fear about how small dairy farmers could suffer from import liberalization, India is now facing strong pressure to open up its market to dairy products from Europe. There are arguments suggesting that removing such tariff would leave India's farmers unable to withstand competition from European imports. Often these imports have been highly subsidized and can be sold at lower prices than domestically produced goods.

Other than the strong pressure from EU to open up its market, India's dairy sector may also become jeopardized by the proposed free trade agreement with Australia and New Zealand. India had entered into a Free Trade Agreement with South Korea and ten other countries in 2009. Currently the plan is to also reduce the tariff rate for New Zealand and Australia to encourage trade. It is feared that entering into a free trade agreement with Australia and New Zealand would bring adverse effects to the dairy sector in India, as the cost of milk production in Australia and New Zealand is far lower than in India due to their pastoral system. In contrast, in India dairy animals are raised by concentrate feed and fodder, therefore the cost of production is much higher.

Supply and Demand [398] [399]

A recent survey has revealed that on average, an Indian family allocates 17 per cent of the household food expenditure on milk and milk products, with rural families allocating 15 per cent and families in the urban area allocating over 18 per cent. As income continues to increase, it is predicted that the demand for milk is going to rise faster than seen in the previous decade. Moreover, the overall demand is growing rapidly compared to milk production. The higher GDP growth rate, enhanced income of rural households and the farm debt waiver are influencing the demand for milk both in the rural and urban areas.

Apart from the rapidly increasing demand for milk and dairy products, other reasons such as the increased cattle feed cost and low availability of dairy farm labour in the rural areas have also resulted in increase in the cost of production. It is estimated that the demand for milk will grow at

7% per annum at current rate of income growth, while the growth in milk production is likely to continue at the present rate of 4.4% in the near future.

A number of suggestions to the future development of India's dairy industry have been proposed by Karmakar & Banerjee (2006):

1. **Production Cost Reduction:** In order to increase the competitiveness of Indian dairy industry, efforts should be made to reduce cost of production. This can be achieved through increasing productivity of animals, improve animal health care and breeding facilities and management of dairy animals. The Government and dairy industry will need to play a vital role in this direction.

2. **Strategy and Infrastructure Development:** Indian dairy industry should further develop proper dairy production, processing and marketing infrastructure, which is capable of meeting international quality requirements. A comprehensive strategy for producing quality and safe dairy products should also be formulated with suitable legal backup.

3. **Focus on Specialty Products:** Dairy industry in India is unique with regard to the availability of buffalo milk. In this case, India can focus on buffalo milk based speciality products, such as Mozzarella cheese, in order to meet the needs of the target consumers.

European Union Dairy Industry

Abstract

The EU dairy industry in 2010 was approximately 13% of the Food and Drink Sector turnover in the EU (€117 billion of €900 billion), 10% of employment in that sector (about 400,000 of 4 million), based on 24 million cows in approximately 1 million farms, and producing 150 billion litres of milk. Of that production, 34 billion litres went to liquid consumption, 2 billion litres went into butter, 9.5 billion litres went into cheese, 1 billion litres went into skim milk powder (SMP), 820 million litres went into whole milk powder, 1 billion litres went into condensed milk, and 4 billion litres to skim milk. Its exports are performing strongly.

The Food and Beverage sector in Europe is seeking to upgrade its performance substantially as a key element in the EU' overall economic performance. Dairy is seen as playing a major role in this upgrading.

The dairy industry is structured differently across different European countries, in terms of farm and herd size, and yield but less-well performing regions are thought to be catching up, in part as a result of capacity building and market pressures. With the expected end of the milk quota system, there is some concern about future lower prices and increased production, though there is a range of views about this.

The contemporary EU dairy sector has been described as an "oligopolistic market with fringes", meaning that a process of mergers and acquisitions has produced a core of large processing companies and "fringe" of smaller operations. Concentration has been greater in the Northern economies (with, interestingly, the exception of Germany). Returns to scale favour larger dairy processing operations, and there has been a tendency for company size to grow as a response to value-chain developments. There is evidence of high levels of innovation in the processing of dairy products, particularly by larger companies, suggesting a move up the value chain. The processing side of the sector seems, on the whole, to be performing soundly.

The sector recovered well after a sharp drop in milk prices in 2009, in part as an effect of EU support. Declining EU support and regulation is expected to bring European prices closer into alignment with global prices. In turn, it is expected that the European dairy industry, whilst a global player, will face competitive challenges, which may well lead to further consolidation within the sector.

Introduction: basic data

The EU dairy industry in 2010 was:

- Approximately 13% of the Food and Drink Sector turnover in the EU (€117 billion of €900 billion)
- Approximately 10% of employment in that sector (about 400,000 of 4 million)
- based on 24 million cows
- in approximately 1 million farms
- producing 150 billion litres of milk,
- of which 138 billion litres was delivered to dairies
- 34 billion litres went to liquid consumption
- 2 billion litres went into butter
- 9.5 billion litres went into cheese
- 1 billion litres went into skim milk powder (SMP)
- 820 million litres went into whole milk powder (WMP)
- 1 billion litres went into condensed milk
- 4 billion litres went into skim milk , used for Casein production

In 2010, EU dairy exports performed relatively strongly and included:

- 378,0000 tonnes of SMP
- 387,0000 tonnes of whey powder
- 669,000 tonnes of cheese
- 444,000 tonnes of WMP
- 150,000 tonnes of butter/butter oil
- 239,000 tonnes of condensed milk

In general terms, these production data have been even for the past five years, suggesting that the sector is in steady state at the moment. Whilst the rhetoric associated with the sector is broadly positive, it is a sector seen to face challenges on a number of fronts – for example, structure, competitiveness, trade and wider political issues, and R&D.

Background: Food and Drink industry

The food and drink industry is one of Europe's most important and dynamic industrial sectors. It is made up of about 310 000 companies, and provides jobs for more than 4 million people.

With an annual turnover in excess of €900 billion, this diverse sector is a strong exporter and is responsible for countless end products in extremely competitive domestic and international markets. But room for improvement still exists.

Excess red tape, finance shortages, a lack of R&D opportunities and difficulties to access raw materials are some of the main obstacles which must be cleared if the EU is to position itself more strongly in world markets.

Since 2009, the EU has been looking at 30 key initiatives to upgrade the Food and Drink Sector They cover[400]:

- a sector wide EU c-ordination, including improved and easier access to finances, greater integration into, and control of, the global supply chain, improved logistics, better "food education" for consumers,
- a market-driven CAP (but with provisos)
- competitive pricing of raw materials and reduced price volatility
- sustainability
- improved technology and R&D
- better impact assessments for changes that might have consequences for the sector
- better harmonization of sectoral regulation in the EU
- improved management of food safety issues and risks
- improved support for SMEs in the sector
- improved export strategy and support
- improve the sector's human capital, including amore developed social dialogue
- a successful (favourable) conclusion to the Doha Round of the WTO and any bilateral trade deals, including improved phyto-sanitray arrangements, improved customs practices nd rule of origin, and monitoring of other countries to see that stick to agreed rules
- a Europe-wide SWOT analysis of the sector

The general perspective is that the food and drink sector is vital for EU economic performance, performs well but can be improved in numerous ways, and must, in particular compete effectively in global markets, in part by controlling key elements of global value chains. Dairy plays an important role in the wider sector.

The Structure of the EU Dairy Industry[401] [402]

The overarching EU strategy for the diary sector has been to maintain stability in the sector by targeted interventions. This remains the case, even after the CAP reforms of 2003. Dairy farming is structured differently from Member State to Member State. Farm and dairy herd sizes vary enormously, as do yields (particularly following the May 2004 EU enlargement that brought ten new Member States into the EU). However, as the dairy sector develops throughout the EU, so variations in yield and other technical factors are being reduced – less developed dairy producers are rapidly catching up with those who had restructured and modernized. There is no 'typical' European dairy cow breed, though the Friesian-Holstein is the most prevalent.

The EU milk marketing system is complex. Milk is generally sold to dairy processors. Some milk goes direct to consumers, whilst, especially in the new EU members, farm consumption is still a significant factor. Processing varies between farmer-owned cooperatives and private sector operations. There has been a growth in trans-border farming and processing operations, but, equally many operations are still nationally-based. The value of milk production in total agricultural production varies. In southern countries, it tends to be lower (below 10%); in northern countries it is higher, reaching as much as 34%.

The driving factor behind milk production in Europe has been the milk quota system (first introduced in 1984). Under the system, farmers producing more than their quota could be penalized financially (by the payment of a "super levy". The quota system acted to limit milk production across Europe.

The milk quota system is to be removed. Quota prices are already low in many countries, zero in some and are destined to be zero everywhere by 2015. For example, they no longer determine production levels, especially in the new member states. The end of the quota system in 2015 does not find favour everywhere. For example, the European Milk Board[403] (representing particular dairy interests) argues for continuing supply controls as a protection against increased production and reduced prices. Against this there is a widely held view that these consequences will not follow, mainly because of the increasing impact of world dairy prices in EU producers and processors.[404]

Broad trends in the milk sector include:

- Declining butter consumption
- Increasing cheese consumption: 40% of EU milk is consumed as cheese, with 75% of cheese production concentrated in Germany, France, Italy and the Netherlands.
- Declining milk powder consumption
- Growth in other areas (e.g. cream, specialized milk proteins and dairy ingredients)

Milk prices are determined by market forces to a greater extent today as a result of changes to the CAP in 2003. Factors influencing milk prices include:

- Supply and demand in the EU
- World dairy prices
- Currency rate fluctuations
- Quality shifts

- Developments in the food chain
- Impact of the CAP and support systems for farmers

Business structure [405]

The contemporary EU dairy sector has been described as an "oligopolistic market with fringes", meaning that a process of mergers and acquisitions has produced a core of large processing companies and "fringe" of smaller operations. Concentration has been greater in the Northern economies (with, interestingly, the exception of Germany).

Studies of EU business demography in the dairy industry suggest in general: [406]

- Declining numbers of processing firms
- The mean age of firms is 26 years (higher for small and medium-sized companies)
- A steady rate of entry of new firms into the processing sector, with more new entrants in Italy and France, but bigger new entrants in the UK and Germany
- Exit rates are low in some countries (e.g. Netherlands and Germany) but higher in others (e.g. France, Italy, UK). Exits tend to be relatively small employers.
- High industry concentration is found in some countries (e.g. Netherlands is the highest, Germany and France follow, with Italy at the low end).
- Company size is high in the Netherlands and the UK, Italy has smaller firms, and France comes in between
- Measured against turnover, total assets, employment and value-added, micro-size operations are falling in size, small and medium-sized operations are growing marginally, whilst big companies display cyclical behavior, dependent on international market trends.
- In terms of employment micro-sized operations are employing fewer people at the mean, small and medium operations about the same, which is also true for big companies.

Tacken et al (2009, p.50) [407] provides an overall structure of the sector in Europe in 2005:

	No of Firms	% share National turnover 2005	Firm Entry 1996-2005	Firm Exit
France	579	41	159	30
Germany	92	48	13	
Italy	1427	41	458	99
Netherlands	50	94	14	
UK	299	91	18	27
Poland	188	66	144	16
Total	2635	N/A	806	172

Tacken et al (2009, p50) note the following:

……the population of firms is substantially declining for Italy, the UK, and Poland while the change for France is only slight. In contrast, the number of firms in the Netherlands is increasing. This is a surprising result, given the well-known dairy companies have gone through a series of mergers. Most

likely these Eurostat data reflect the development by some farmers and traders of new dairy or ice-cream companies (Heida zuivel, among others). For Germany, it is difficult to determine the trend but it is increasing if we smooth out the fluctuations.

Firm size

Tacken et al (2009, p.54) provides mean company data:

Variable (1000€)	France	Germany	Italy	Neth'lands	Poland	UK
Operating Revenues	40,641	213,27	9,471	2,084,139	21,240	210,231
Employees	94	370	24	996	215	870
Total Asset	17,561	67,369	8,128	92,121	8,934	119,760
Added Value	5,704	23,232	1,372	272,146	3,173	45,569

Generally, the larger scale of operations in the Netherlands (in particular), the UK, Poland and Germany compare markedly with France, Italy and Poland.

Profitability [408]

In general, the biggest companies are getting far more from assets than others in the sector, reflecting returns to scale. Looking at profitability in more detail:

- UK companies do well in terms of profit margin, return on total assets and on the EBITDA measure (which adjusts for tax and capital structure effects)
- France does well across all measures, but particularly the EBITDA measure, where it is very successful
- Italy does relatively poorly except on the EBITDA measure
- Germany performs better in terms of returns to total assets and EBITDA
- The Netherlands also performs better in the EBITDA measure

Overall, the UK seems to be the most profitable across all measures, France the second best performer, Germany the third, Netherlands fourth and Italy fifth (when looking at the major countries in the region).

In the major country players, debts to asset ratios are positive (that is, assets are greater than debts). Larger firms finance themselves more frequently from internal resources; smaller firms tend to have higher debts, as one might expect. Using the current asset ratio as assign of company resilience, Dutch companies are in the strongest position, with UK, Italian, German and French companies following. Financially, the sector in general seems to perform soundly, especially in the larger country players.

The Competiveness of the European Dairy Industry

There are major debates around the competitiveness of the EU dairy sector. One major study concludes as follows. These are summarized in Tacken et al (2009, p.7):

The local consumption of milk products is increasing slightly due to increased consumption of cheese and yoghurts. Milk consumption is slightly decreasing in most countries. In the EU-12 the dairy industry is growing in importance in the total food industry.

The EU dairy industry is very dominant in the world market. The EU-25 exports amount €21 bn worth to other countries, while Oceania exports amount to €3.8 bn and NAFTA to €1.1 bn. Although the export value is increasing the world market share of the EU is decreasing, since the world market is growing faster than the EU can meet. New Zealand profits most from the increasing world market demand. Brazil is still an unimportant player in the world market but in the local food industry the importance of the dairy industry is increasing very fast. Due to increasing competition of especially New Zealand in the milk powder market the EU specialises more in cheese.

Within the EU the companies innovate mostly on products and less in marketing, organisation and process. Product innovations are mostly done on varieties, but also very important are innovations on new ingredients (in functional foods). SMEs as well as large companies, including the packaging and ingredients industry, all contribute to innovation. In north-western Europe the dairy industry is dominated by large firms. In the Netherlands the dairy industry is most concentrated. France and Germany have a small number of large firms and quite a large number of medium and small firms. Italy has a high number of medium and small firms and the highest number of new entrants. The turnover of the top 10 dairy companies has increased between 2004 and 2006. In the large majority of countries labour productivity has improved. In conclusion, the EU dairy industry can be characterised as innovative and a global player, but it is losing market share. The competitive position is just below average, mainly due to the loss in world market share. The world market is growing faster than European exports…….the improvement in labour productivity and the growth in value added compensate for the loss in market share. New Zealand performs well because of the high increase in world market share.

Looking at Tacken et al (2009) in more detail, they note the following:

- Key areas of innovation include:

- milk, non-dairy milk and yoghurt drinks had the largest share (one third) in product releases in 2006, more than other dairy categories;

- new product development in milk concentrated on healthier milks addressing fat and cholesterol; organic milk with low fat varieties, new flavourings and single-serve products were also important;

- for cheese the orientation of innovation was on health and convenience (functional cheese, individually wrapped portions, new blends, long-life packaging, table-ready packaging);

- new yoghurt products comprise mainly new flavours (wintery flavours such as plum, cinnamon, American heritage flavours and exotic fruits); there is also intense competition to differentiate between health benefits;

- the most innovative category of 2006 was margarine, butter and spreads with new flavourings, more convenient packaging, long-life and healthier butters; strawberry remains the most common flavour, mango the fastest growing;

- the role of functional foods is increasing, now that they have also become incorporated in more indulgent categories; the three key trends of ethical, health and indulgence are increasingly combined in one product;

- emphasis on brain health is gaining momentum (omega-3);

- 'natural' is an important trend for the future with lower tolerance for artificial preservatives, sweeteners and flavourings;

- low-fat and wellbeing products are becoming an up-market trend; - premium trends are on the rise, particularly foods which have a strong regional or local identity;

- gourmet is becoming a mass market with real gourmet producers introducing even more unusual flavourings (Italian/French cooking flavours such as truffles, spicy Indian or Hispanic flavours);

- the convenience trend is likely to expand with several innovations in the area of portability, based on new technology that allows for extendend, unrefrigerated storage.

(Tacken et al, 2009, p.38)

- The UK, France, Denmark, Netherlands Germany and Sweden are the most innovative countries in terms of the dairy sector, with the UK's dramatically better performance driven by the retail sector;
- Some European firms are high performers in terms of innovation – Arla, Danone, Nestle, Valio, for example – but onlt Arla is seen as having any superior innovative qualities over Fonterra;

Tacken et al (2009) also offer a GTAP assessment of the competiveness of the EU dairy industry across a range of scenarios. That assessment impinges on a number of related and important factors. Its key conclusions are:

- abolition of the EU milk quota effect has appositive impact on the EU dairy sector output, but full liberalization would have a negative effect. In other words, the EU dairy sector would face serious competition from elsewhere in a liberalized environment. New Zealand and Australia benefit under the full liberalization model;
- Higher productivity in the EU sector brings competitive advantage, including developments in the processing sector;
- All scenarios modelled give the EU an important role in processed foods, but challenges arise in terms of relative position, unless, for example, productivity improvements are achieved;
- Again, for EU food exports, full liberalisation is disadvantageous because of its impact inter alia on dairy exports;
- Full liberalization will have adverse employment effects in the dairy industry. It would, for example lead to a 3.2% employment decrease in milk processing, whilst competitors see significant rises in employment (up to 44% in New Zealand);
- Increased productivity in the dairy sector will, as might be expected also lead to a small decline in dairy sector employment;
- Value added in the sector remains stable across all scenarios, that is, although there may be declining employment, productivity increases couple to produce development and innovation, maintains the level of value added

Tacken et al (2009) concludes its analysis as follows:

Europe is the largest exporter of dairy products in the world, even excluding intra-EU trade. World trade in dairy products is concentrated in cheese, butter and milk powder. In growth of exports New Zealand surpasses the EU. Within the New Zealand food industry dairy is much more important than in the EU, Australia and the USA. The world market growth in combination with the CAP quota restrictions, mainly benefits New Zealand. Over the last years the European Union has quickly lost market share in the world trade.

For milk products the EU has met more competition from Oceania and Asia since 1999. Milk powder production in New Zealand already approaches the total EU production. The EU reacts to this development by specialising on cheese, another strong product in international trade. Of total world trade in cheese 45% originates from France, the Netherlands and Germany. The USA and Canada choose to maintain their position on all products. In world trade this strategy is reflected by a detoriating position for Canada.

On the basis of the publicly available sources, like the e-newsletter Food Navigator and the professional magazine Dairy Innovation, insight has been gained into innovation in the dairy industry. Most innovations are product innovations and marketing innovations. The product innovations are mainly line extensions:

- *new sizes or flavors in the existing product category. But innovations in*
- *new ingredients are also very numerous.*

The main innovators in the European dairy industry are the large dairy companies (e.g. Arla, Danone, Müller, BSA Lactalis, Dairy Crest or Campina), suppliers of ingredients (Danisco, Chr Hansen, DSM) and packaging (Tetra Pack) in Europe. The large firms have a share of over 60% in the industry's total turnover and employment and a share of over 50% in innovations. This implies that innovations are proportionally distributed over smaller and larger companies. Arla presented the highest number of innovations, Fonterra (New Zealand) ranks number 2.

A fair amount of the mainly large corporations works closely together in innovation with research institutes. This cooperation turns out to be a major part of organisational innovations. This suggests an open innovation model where promoting innovation benefits from the promotion of cooperation between partners in the food chain (Tacken et al, 2009, p.90).

The 2009 Crisis and Recovery

In 2009, there was a severe drop in milk prices across the EU, primarily as an effect of the 2007 global crisis. Things improved:

The German butter price is now back to the level of 2002 before the cuts in intervention prices. The recovery in SMP prices has not been as strong, but even so these are now comfortably above intervention levels. EU dairy farmers also benefit from an additional €5 billion per year in the form of direct payments (3.5c/kg milk) to compensate for the reductions in intervention prices.

Farm prices are responding to the better prices for dairy products, although with some lag. The average EU price for standardised 4.2% fat milk has risen to €27.06/100kg in October 2009 from its lowest point of €23.74/100kg in April. It is now back at the levels of Spring 2007, before the big run-up in prices in 2008.[409]

The EU responded as follows:

- *Export refunds for dairy products were introduced in January 2009.*
- *The intervention period has been extended until February 2010. Normally, intervention buying is limited to 30,000 tonnes of butter and 109,000 tonnes of SMP and is only open between 1 March and 31 August each year. The Commission has already bought butter and SMP well beyond these limits (approximately 83,000 tonnes of butter and 283,000 tonnes of SMP).*
- *Adjustments to the quota/superlevy system to exclude quota bought-in by member States and kept in the national reserve from the superlevy calculation.*
- *Incorporation of the dairy sector into Article 186 of the Single Common Market Organisation (the so-called disturbance clause), which allows the Commission to take temporary action quickly, under its own powers, during times of market disturbance.*
- *Reinforcement of the School Milk Programme by extending the range of products and the age groups of children covered by the scheme. A new round of promotional measures for dairy products was also opened by the Commission.*

In total, the Commission expects to spend up to €600 million on market measures this year.
Among the income support measures were:

- *70 percent of direct payments could be paid 6 weeks earlier than usual (from 16 October).*
- *An additional aid package of €280 million for dairy farmers was agreed in October 2009, under pressure from the Group of 21. The division of these payments between Member States was agreed in November, and the money must be paid out by June 2010. For the record, the agreed aid allocation is: Belgium, €7.21m, Bulgaria €1.84m, Czech Republic €5.79m, Denmark €9.86m, Germany €61.20m, Estonia €1.30m, Ireland €11.50m, Greece*

€1.58m, Spain €12.79m, France €51.13m, Italy €23.03m, Cyprus €0.32m, Latvia €1.45m, Lithuania €3.10m, Luxembourg €0.60m, Hungry €3.57m, Malta €0.08m, Netherlands €24.59m, Austria €6.05m, Poland €20.21m, Portugal €4.08m, Romania €5.01m, Slovenia €1.14m, Slovakia, €2.03m, Finland €4.83m, Sweden €6.43m, UK €29.26m.

- *Under the Health Check and the Economic Recovery Package, an extra €4.2 billion is available to address 'new challenges', including dairy restructuring, although the outgoing Commissioner has tartly noted that some of the most vocal advocates of EU aid have made relatively little use of their own allocations to help dairy farmers.*

- *Member States were allowed to make a one-off payment to farmers of up to €15,000 in state aid until the end of 2010 under the Temporary Crisis Framework, adopted by the Commission in January 2009. While aid schemes put in place under this instrument had to be open to all primary producers, the primary intention was to provide assistance to dairy farmers.*[410]

Recovery was helped, of course by the global recovery in commodity prices, including that of milk.

Current EU Sectoral Assessment (2010-2011)

Key contextual factors include:

- Expected continuing strong milk prices
- Continuing high milk production (deliveries up 1% between 2010 and 2011)
- Greater impact of market pricing on the volume of outputs since EU regulatory changes in the early 2000s
- Existing milk quotas will hamper some countries in a rising market
- Improvements in the fresh product market
- Cheese exports are expected to continue very high performance (cheese production up 100,000 tonnes 2009-2010, and exports passing 600,000 tonnes for the first time in 2010)
- High process may cause an adverse shift to vegetable oil products in the butter market
- Expectations of improved milk powder exports, and a consequent reduction in SMP stocks

Overall:

In 2011, it is likely that milk prices will remain stable or increases lightly. At the end of 2010, both producers and users had only small stocks of dairy products. Orders for exports in the first few months of 2011 are looking positive, particularly for milk powder. For most products, longer-term contracts contain higher prices than last year. There is no reason to believe that demand on the international market for dairy products will fall away. It is also thought that demand on markets which are important for the European Union, such as Russia and Algeria, will remain stable. The additional quantities of milk which are expected this year will most probably be able to be exported. Many milk-producing regions of the world were faced with unfavourable weather conditions in 2010 which curbed production. At the same time, demand was stimulated by economic recovery in many countries. China's increasing need for imports, which was a result of the melamine crisis and which will probably continue, also contributed to this trend. However, export opportunities are key to market development, as consumption.[411]

Conclusion

A recent study, talking about an era of unprecedented change for the EU dairy sector concludes as follows:

While the policy environment facing EU dairy farmers is uncertain at present, it appears reasonable to assume that the level of market support and management in particular will be significantly reduced. It is anticipated that in turn EU dairy prices will more closely align with world prices. World prices are both lower and more volatile than EU prices and it is further assumed that this increased volatility will also be transmitted to EU prices. Increased price volatility is a concern for a number of reasons as it adds major new challenges for farm business planning, debt repayment, and, in some cases, solvency. Lower prices will require dairy farmers to increase scale in order to maintain income. In many instances this increase in scale will need to be swift and dramatic thus creating the potential for increased risk as farm enterprises specialize. While it is currently possible for EU farmers to manage some of their input price risks through energy and feed price futures and options, they may be more inclined to hedge their output price risk…….the potential for increased risk is acknowledged by the European Commission which now has an opportunity to put in place and facilitate instruments which will help ensure the long run competitiveness of this most important agricultural sector.[412]

Such changes will, inevitably, play long-term into the hands of the larger private sector businesses in the processing sector. They are likely to have the dominant power in the global supply chains, and will seek to maximize their commercial advantage from increased market-based pricing of milk, and accompanying price volatility, across the EU.

References

[1] International Dairy Federation (2010). The world dairy situation. *Bulletin of the IDF, 446/2010*. Retrieved from http://www.svenskmjolk.se/Global/Dokument/Dokumentarkiv/Marknadsrapporter/World%20Dairy%20Situation/World%20Dairy%20Situation%202010.pdf

Note that there are major discrepancies across publications in the 2010 data for global cow milk production (by a factor of up to 120 million tonnes. See this figure in comparison to the 440 million tonnes for 2010 given at the reference in Reference 5.

[2] Economic and Social Development Department, FAO. (2009). Milk and milk products. *Food Outlook: Global Market Analysis, December 2009.* Retrieved from http://www.fao.org/docrep/012/ak341e/ak341e10.htm

[3] Commonwealth Bank. (2010). Commodities: Agri-Update, Global markets research, November, retrieved from: http://www.commbank.com.au/corporate/research/publications/commodities/agricultural-insights/121110-Agri_Updates_Global_Dairy.pdf

[4] IFCN. (2010). Status and Trends in Milk Production World Wide. Retrieved from http://www.verantwoordeveehouderij.nl/producten/PZprojecten/Kostprijsvergelijkingmethetbuitenland/Info%20IFCN%20results%202010.pdf

[5] Knips, V. (2005). Developing countries and the global dairy sector. Part 1: global overview. *Working Paper- A Living from Livestock: Pro-Poor Livestock Policy Initiative.* Retrieved from http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/execsumm_wp30.pdf

[6] Beldman, A., Daatselaar, C., Galama, P., & Prins, B. (2010). *Trends and Challenges in World Dairy Farming: Impressions from the 2009 Global Dairy Farmers Congress in China*. Report financed by Global Dairy Farmers. Retrieved from www.lei.dlo.nl/publicaties/PDF/2010/2010-015.pdf

[7] FAO. (2010). *Food Outlook: Global Market Analysis, June 2010.* Retrieved from http://www.fao.org/docrep/012/ak349e/ak349e00.pdf

[8] Beldman, A., Daatselaar, C., Galama, P., & Prins, B. (2010). *Trends and Challenges in World Dairy Farming: Impressions from the 2009 Global Dairy Farmers Congress in China*. Report financed by Global Dairy Farmers. Retrieved from www.lei.dlo.nl/publicaties/PDF/2010/2010-015.pdf

[9] FAO. (2009). Milk and milk products. *Food Outlook: Global Market Analysis, December 2009.* Retrieved from http://www.fao.org/docrep/012/ak341e/ak341e10.htm

[10] Reference for Business. (2010). *Fonterra Co-Operative Group Ltd Company Profile, Information, Business Description, History, Background Information on Fonterra Co-Operative Group Ltd.* Retrieved 15 Jan 2011, from http://www.referenceforbusiness.com/history2/48/Fonterra-Co-Operative-Group-Ltd.html

[11] IFCN Dairy Research Center (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 2 July 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[12] Reference for Business. (2010). *Fonterra Co-Operative Group Ltd Company Profile, Information, Business Description, History, Background Information on Fonterra Co-Operative Group Ltd*. Retrieved 15 Jan 2011, from http://www.referenceforbusiness.com/history2/48/Fonterra-Co-Operative-Group-Ltd.html

[13] Fonterra. (n.d.). *Key Facts.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/key+facts

[14]Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[15] Fonterra. (n.d.). *Key Facts.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/key+facts

[16] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[17] Ferrier, A. (CEO) & Mason, J. (CFO), Fonterra. (2010). *2010 Annual Results- Market Briefing*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/15e1be00445a53fc9793b711d78cc080/18+Oct+Wellington+Investor+Presentation+Final.pdf?MOD=AJPERES

[18] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[19] Fonterra. (n.d.). *Ingredients.* Retrieved 27 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Products/Fonterra+Ingredients/

[20] Ferrier, A. (CEO) & Mason, J. (CFO), Fonterra. (2010). *2010 Annual Results- Market Briefing*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/15e1be00445a53fc9793b711d78cc080/18+Oct+Wellington+Investor+Presentation+Final.pdf?MOD=AJPERES

[21] Fonterra. (n.d.). *Ingredients.* Retrieved 27 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Products/Fonterra+Ingredients/

[22] Ferrier, A. (CEO) & Mason, J. (CFO), Fonterra. (2010). *2010 Annual Results- Market Briefing*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/15e1be00445a53fc9793b711d78cc080/18+Oct+Wellington+Investor+Presentation+Final.pdf?MOD=AJPERES

[23] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[24] Fonterra. (n.d.). *About Consumer Brands*. Retrieved 15 Jan 2011 from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+products/consumer+brands/about+consumer+brands/about+consumer+brands

[25] Fonterra. (n.d.). *About Foodservice.* Retrieved 27 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Products/Foodservices/About+Foodservice/

[26] van der Heyden, H. (Chairman), Ferrier, A. (CEO) & Mason, J. (CFO). (2010). *Interim Results Briefing*. Retrieved 27 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/8bdf2900440bfa89836c9f9906727cef/MASTER%2BFY10%2BIn

terim%2BAnalyst%2BMedia%2Bpresentation%2BFinal.pdf?MOD=AJPERES&CACHEID=8bdf2900440bfa89836c9f9906727cef

[27] Fonterra. (n.d.). *Fonterra World Map.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/home/fonterra+world+map?contentIDR=ea30a0004445e5029d3dbd48734495a8&useDefaultText=0&useDefaultDesc=0

[28] Fonterra. (n.d.). *Our Structure*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/our+structure

[29] Fonterra. (n.d.). *Fonterra World Map.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/home/fonterra+world+map?contentIDR=ea30a0004445e5029d3dbd48734495a8&useDefaultText=0&useDefaultDesc=0

[30] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[31] Fonterra. (n.d.). *Business Units.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/business+units

[32] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[33] Fonterra. (n.d.). *Fonterra in Australia*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+australia

[34] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[35] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[36] Fonterra. (n.d.). *Fonterra World Map.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/home/fonterra+world+map?contentIDR=ea30a0004445e5029d3dbd48734495a8&useDefaultText=0&useDefaultDesc=0

[37] Fonterra. (n.d.). *Business Units*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/business+units

[38] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[39] Fonterra. (n.d.). *Business Units*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/business+units

[40] Fonterra Co-operative Group Limited. (2010). *Fonterra Interim Report 2010.* Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/68fc3880440bf9e7835c9f9906727cef/Fonterra%2BInterim%2BReport%2B2010.pdf?MOD=AJPERES&CACHEID=68fc3880440bf9e7835c9f9906727cef

[41] Ferrier, A. (CEO) & Mason, J. (CFO), Fonterra. (2010). *2010 Annual Results- Market Briefing*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/15e1be00445a53fc9793b711d78cc080/18+Oct+Wellington+Investor+Presentation+Final.pdf?MOD=AJPERES

[42] Fonterra. (n.d.). *Fonterra in Australia*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+australia

[43] Fonterra. (n.d.). *Fonterra in Asia and the Middle East.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+asia+and+the+middle+east

[44] Fonterra. (n.d.). *Fonterra in Indonesia*. Retrieved 29 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+indonesia

[45] Fonterra. (n.d.). *Fonterra in Asia and the Middle East*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+asia+and+the+middle+east

[46] Fonterra. (n.d.). *Fonterra World Map.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/home/fonterra+world+map?contentIDR=ea30a0004445e5029d3dbd48734495a8&useDefaultText=0&useDefaultDesc=0

[47] Fonterra. (n.d.). *Fonterra in the Philippines*. Retrieved 29 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+the+philippines

[48] Fonterra. (n.d.). *Fonterra in Asia and the Middle East*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+asia+and+the+middle+east

[49] Fonterra. (n.d.). *Fonterra in Sri Lanka.* Retrieved 29 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+sri+lanka

[50] Fonterra. (n.d.). *Fonterra in Asia and the Middle East*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/fonterra+in+asia+and+the+middle+east

[51] Swann, A. (2009, April 08). Fonterra cracks Egypt. *The National Business Review.* Retrieved 30 Jan 2011, from http://www.nbr.co.nz/article/fonterra-cracks-egypt-100170

[52] Fonterra enters Egypt with new partnership with Arab Dairy. (2009, April 08). *Fonterra Media Releases.* Retrieved 30 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/news/media+releases/fonterra+enters+egypt+with+new+partnership+with+arab+dairy

[53] Fonterra. (n.d.). *Our Partnerships*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/our+partnerships

[54] Fonterra. (n.d.). *Our Structure.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/our+structure

[55] Edward, G. (2009, September 18). Fonterra offers farmers more shares in new capital structure. *The New Zealand Herald* (APN). Retrieved 28 Jan 2011, from http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10598184

[56] Three-step process to strengthen Fonterra's capital structure that retains 100% farmer control and ownership. (n.d.). *Fonterra Media Releases.* Retrieved 28 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/news/media+releases/three-step+process+to+strengthen+fonterras+capital+structure+that+retains+100pc+farmer+control+and+ownership

[57] Farmers give Fonterra green light. (2010, June 30). *The New Zealand Herald* (APN). Retrieved 28 Jan 2011, from http://www.nzherald.co.nz/property/news/article.cfm?c_id=8&objectid=10655487

[58] Farmers give Fonterra green light. (2010, June 30). *The New Zealand Herald* (APN). Retrieved 28 Jan 2011, from http://www.nzherald.co.nz/property/news/article.cfm?c_id=8&objectid=10655487

[59] Three-step process to strengthen Fonterra's capital structure that retains 100% farmer control and ownership. (n.d.). *Fonterra Media Releases.* Retrieved 28 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/news/media+releases/three-step+process+to+strengthen+fonterras+capital+structure+that+retains+100pc+farmer+control+and+ownership

[60] Three-step process to strengthen Fonterra's capital structure that retains 100% farmer control and ownership. (n.d.). *Fonterra Media Releases.* Retrieved 28 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/news/media+releases/three-step+process+to+strengthen+fonterras+capital+structure+that+retains+100pc+farmer+control+and+ownership

[61] Ferrier, A. (CEO) & Mason, J. (CFO), Fonterra. (2010). *2010 Annual Results- Market Briefing*. Retrieved 15 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/15e1be00445a53fc9793b711d78cc080/18+Oct+Wellington+Investor+Presentation+Final.pdf?MOD=AJPERES

[62] Fonterra. (n.d.). *Fonterra World Map.* Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/home/fonterra+world+map?contentIDR=ea30a0004445e5029d3dbd48734495a8&useDefaultText=0&useDefaultDesc=0

[63] Fonterra. (n.d.). *Innovation and technology processes*. Retrieved 30 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Business/Innovation+and+Technology/Processes/

[64] Fonterra. (n.d.). *Taking the Lead.* Retrieved 30 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Business/Innovation+and+Technology/Taking+the+Lead/

[65] Fonterra. (n.d.). *Innovation and technology products.* Retrieved 30 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Business/Innovation+and+Technology/Products/

[66] Gray, S. & Le Heron, R. (2010). Globalising New Zealand: Fonterra Co-operative Group, and shaping the future. *New Zealand Geographer, 66*, 1-13.

[67] Bolling, C., & Gehlhar, M. (2005). Global food manufacturing reorients to meet new demands. In A. Regmi and M. Gehlhar (Eds.). *New Directions in Global Food Markets.* Agriculture Information Bulletin No. 794. Retrieved 7 Feb, 2011, from http://www.ers.usda.gov/publications/aib794/aib794g.pdf

[68] Successful product differentiation strategies. (2010). *Strategic Direction, 26*(1), 17-20.

[69] Gray, S. & Le Heron, R. (2010). Globalising New Zealand: Fonterra Co-operative Group, and shaping the future. *New Zealand Geographer, 66*, 1-13.

[70] Oram, R. (2009, January 1). ROD ORAM: Brave new Fonterra. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/sunday-star-times/business/business-columnists/125109/ROD-ORAM-Brave-new-Fonterra

[71] Gaynor, B. (2009, August 1). Brian Gaynor: Fonterra's plan critical for farmers' future. *New Zealand Herald.* Retrieved 1 Feb 2011, from http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10587914

[72] Oram, R. (2010, April 11). Farmers win from move to liquid market. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/business/3569674/Farmers-win-from-move-to-liquid-market

[73] Oram, R. (2008, September 20). Rod Oram: Scandal taints Fonterra. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/sunday-star-times/business/637351

[74] Oram, R. (2008, September 26). Rod Oram: Fonterra's milk spill runs deep. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/sunday-star-times/business/647024

[75] Oram, R. (2009, September 27). Rod Oram: The way forward for farmers and Fonterra. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/sunday-star-times/business/2904758/Rod-Oram-The-way-forward-for-farmers-and-Fonterra

[76] Oram, R. (2008, September 20). Rod Oram: Scandal taints Fonterra. *Sunday Star Times.* Retrieved 1 Feb 2011, from http://www.stuff.co.nz/sunday-star-times/business/637351

[77] Gray, S. & Le Heron, R. (2010). Globalising New Zealand: Fonterra Co-operative Group, and shaping the future. *New Zealand Geographer, 66*, 1-13.

[78] IFCN Dairy Research Center (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 2 July 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[79] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[80] Nestlé (n.d.). *History.* Retrieved 3 Mar 2011, from http://www.nestle.com/AboutUs/History/Pages/History.aspx?pageId=1

[82] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[83] International Farm Comparison Network (2009). *10th IFCN Dairy Conference 2009, Press material.* Retrieved 3 Mar 2011, from http://www.ifcnnetwork.org/media/pdf/Press-rele-changed.pdf

[84] Nestlé. (n.d.) *Our Brands.* Retrieved 4 Mar 2011, from http://www.nestle.com/AboutUs/OurBrands/Pages/OurBrands.aspx

[85] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[86] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[87] Nestlé S.A Press Release (2011). *2010 Full Year Results.* Retrieved 9 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Events/2010-full-year-results/Press_Release_EN.pdf

[88] IUF Dairy Division. (2010). *The Largest Global Dairy Companies and Co-operatives (ranked by 2009 dairy sales in EUR billion).* Retrieved 22 July 2011, from http://cms.iuf.org/sites/cms.iuf.org/files/Dairy%20companies%20chart%202010-e.pdf

[89] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[90] Nestlé S.A Press Release (2011). *2010 Full Year Results.* Retrieved 9 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Events/2010-full-year-results/Press_Release_EN.pdf

[91] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[92] Nestlé S.A Press Release (2011). *2010 Full Year Results.* Retrieved 9 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Events/2010-full-year-results/Press_Release_EN.pdf

[93] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[94] Nestlé. (n.d.). *Working with dairy farmers.* Retrieved 7 June 2011, from http://www.nestle.com/Brands/Dairy/Pages/DairyCSV.aspx

[95] Fonterra and Nestle Proposal to extend DPA to Chile. (2010, November 27). *Fonterra Media Releases.* Retrieved 9 Mar 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/news/media+releases/fonterra+and+nestle+proposal+to+extend+dpa+to+chile

[96] Coca-Cola, Nestle refocus joint venture. (2007, March 27). *ABCmoney.* Retrieved 9 Mar 2011, from http://www.abcmoney.co.uk/news/27200746503.htm

[97] Nestlé. (2010) *Partnerships on Climate Change.* Retrieved 7 Mar 2011, from http://www.nestle.com/CSV/WaterAndEnvironmentalSustainability/ClimateChange/Pages/Partnerships.aspx

[98] Nestlé. (n.d.) *MDG 8: Develop a global partnership for development in Kenya.* Retrieved 7 Mar 2011, from http://www.community.nestle.com/partnership/africa/kenya/Pages/eadd-dairy-project.aspx

[99] Fonterra. (n.d.). *Our Partnerships*. Retrieved 17 Jan 2011, from http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/our+partnerships

[100] Cereal Partners Worldwide (n.d.). *Company Overview.* Retrieved 11 Mar 2011, from http://www.nestle-cereals.com/cpw/company.html

[101] Beverage Partners Worldwide (n.d.). *Company*. Retrieved 11 Mar 2011, from http://www.beveragepartnersworldwide.com/

[102] The Coca-Cola Company and Nestlé Further Refine Beverage Partners Worldwide Joint Venture. (2007, March 27). *Coca-Cola News Release.* Retrieved 8 Mar 2011, from http://www.thecoca-colacompany.com/presscenter/nr_20070327_bpw_refine_joint_venture.html

[103] Joelving, R. F. (2010, July 26). What "clinically proven" means for a beauty product. *Calgaryherald.* Retrieved 8 Mar 2011, from http://www.calgaryherald.com/story_print.html?id=3315519&sponsor=curriebarracks

[104] L'Oreal (n.d.). The Laboratoires INNEOV are targeting the pharmacy channel in order to develop the cosmetic nutritional supplements market. Retrieved 11 Mar 2011, from http://www.loreal-finance.com/eng/news/active-cosmetics-40.htm

[105] Nestlé and IFRC sign a new partnership renewing their collaboration until 2013. (2010, November 22). *Nestlé News & Features.* Retrieved 8 Mar 2011, from http://www.nestle.com/Media/NewsAndFeatures/Pages/Nestle-and-IFRC-sign-a-new-partnership-renewing-their-collaboration-until-2013.aspx

[106] Nestlé (2010). *Partnerships on climate change.* Retrieved 11 Mar 2011, from http://www.nestle.com/CSV/WaterAndEnvironmentalSustainability/ClimateChange/Pages/Partnerships.aspx

[107] Nestlé. (2011). *Management.* Retrieved 9 Mar 2011, from http://www.nestle.com/AboutUs/Management/Pages/Management-landing.aspx

[108] Nestlé. (2011). *General Organization.* Retrieved 9 Mar 2011, from http://www.nestle.com/AboutUs/Management/Pages/Management-landing.aspx

[109] Nestlé. (n.d.). *Strategy - Nestlé Roadmap to Good Food, Good Life.* Retrieved 11 Mar 2011, from http://www.nestle.com/AboutUs/Strategy/Pages/Strategy.aspx

[110] Nestlé S.A., Cham and Vevey (Switzerland). (2010). *Annual Report 2009.* Retrieved 3 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Documents/Annual_Reports/2009-Annual-Report-EN.pdf

[111] Bauer, W. (n.d.). *Our Vision.* Retrieved 12 Mar 2011, from http://www.nestle.com/RandD/OurVision/Pages/OurVision.aspx

[112] Nestlé. (n.d.). *Innovating with Nestlé.* Retrieved 12 Mar 2011, from http://www.research.nestle.com/OpenInnovations/

[113] Nestlé. (n.d.). *Innovations.* Retrieved 12 Mar 2011, from http://www.nestle.com/RandD/Innovations/Pages/Innovation.aspx

[114] Nestlé. (n.d.). *Global Network.* Retrieved 12 Mar 2011, from http://www.nestle.com/RandD/GlobalNetwork/Pages/GlobalNetworkPage.aspx

[115] Nestlé S.A Press Release (2011). *2010 Full Year Results.* Retrieved 9 Mar 2011, from http://www.nestle.com/Common/NestleDocuments/Documents/Library/Events/2010-full-year-results/Press_Release_EN.pdf

[116] Nestle Insight: Business Principles. (n.d.). *International Labour Organisation: Corporate Codes of Conduct.* Retrieved 16 Mar 2011, from http://actrav.itcilo.org/actrav-english/telearn/global/ilo/code/nestle.htm

[117] Mijuk, G. (2010, September 27). Is Nestlé Move Too Good to Be True? *The Wall Street Journal.* Retrieved 15 Mar 2011, from http://blogs.wsj.com/source/2010/09/27/is-nestles-health-move-too-good-to-be-true/

[118] Nestle emerging markets offset cost rises. (2011, February 18). *Business Spectator.* Retrieved 16 Mar 2011, from http://www.businessspectator.com.au/bs.nsf/Article/UPDATE-5-Nestle-emerging-market-growth-to-offset-c-E6H9J?OpenDocument&src=srch

[119] Rind, C. (2010). Nestlé SWOT Analysis. Retrieved 15 Mar 2011, from http://www.freeswotanalysis.com/consumer-goods-swot/125-nestle-swot-analysis.html

[120] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[121] Heasman, M., & Mellentin, J. (2001). Adieu, Go- Nestlé Bottles out. *Just-Food.* Retrieved 17 Mar 2011, from http://www.just-food.com/analysis/adieu-go-nestl%C3%A9-bottles-out_id93941.aspx

[122] Nestlé. (n.d.). *Creating Shared Value.* Retrieved 17 Mar 2011, from http://www.nestle.com/CSV/Pages/CSV.aspx

[123] World Cocoa Foundation (n.d.). *Who We Are.* Retrieved 17 Mar 2011, from http://www.worldcocoafoundation.org/who-we-are/

[124] International Cocoa Initiative (n.d.). Working towards responsible labour standards for cocoa growing. Retrieved 18 Mar 2011, from http://www.cocoainitiative.org/

[125] Blas, J. (2010, May 28). Falling cocoa yields in Ivory Coast. *Financial Times.* Retrieved 18 Mar 2011, from http://www.ft.com/cms/s/2/28e00036-67a0-11df-a932-00144feab49a.html#axzz1GtLdSfVW

[126] McCarthy, C. (2010, May 17). After Facebook backlash, Nestle steps up sustainability. *Cnet News.* Retrieved 17 Mar 2011, from http://news.cnet.com/8301-13577_3-20005101-36.html

[127] Hills, S. (2008, December 2). Nestle accused of greenwashing water. Food Navigator USA. Retrieved 15 Mar 2011, from http://www.foodnavigator-usa.com/Financial-Industry/Nestle-accused-of-greenwashing-water

[128] Anderson, S. (2008, December 1). Nestle water ads misleading: Canada green groups. Reuters. Retrieved 15 Mar 2011, from http://www.reuters.com/article/2008/12/01/us-water-protest-idUSTRE4B06UJ20081201

[129] Arena, C. (2009, November 2). Nestle Waters' Hit and Miss. *3BL Media's Commentary and News.* Retrieved 18 Mar 2011, from http://threeblmedia.wordpress.com/2009/11/02/nestle-waters-hit-and-miss/

[130] Bell, D. (2010, May 25). Nestle battles greens over water. *The Wall Street Journal.* Retrieved 18 Mar 2011, from http://www.theaustralian.com.au/business/news/nestle-battles-greens-over-water/story-e6frg90x-1225871177518

[131] Greenpeace. (2010). *Ask Nestlé to give rainforests a break*. Retrieved 18 Mar 2011, from http://www.greenpeace.org/international/campaigns/climate-change/kitkat/

[132] Bowen Craggs & Co. Ltd (2010, April 7). Why Nestlé deserves some real fans. Retrieved 15 Mar 2011, from http://www.bowencraggs.com/best-practice/commentaries/252

[133] Steel, E. (2010, March 29). Nestlé takes a beating on social-media sites. The Wall Street Journal. Retrieved 18 Mar 2011, from http://online.wsj.com/article/SB10001424052702304434404575149883850508158.html?KEYWORDS=nestle+facebook

[134] Hickman, M. (2010, May 19). Online protest drives Nestlé to environmentally friendly palm oil. *The Independent.* Retrieved 18 Mar 2011, from http://www.independent.co.uk/environment/green-living/online-protest-drives-nestl-to-environmentally-friendly-palm-oil-1976443.html

[135] Tabacek, K. (2010, May 17). Nestlé uses NGO to clean up palm oil supply chain. *The Guardian*. Retrieved 18 Mar 2011, from http://www.guardian.co.uk/sustainable-business/nestl-ngo-clean-up-palm-oil-supply-chain

[136] Bowen Craggs & Co. Ltd (2010, April 7). Why Nestlé deserves some real fans. Retrieved 15 Mar 2011, from http://www.bowencraggs.com/best-practice/commentaries/252

[137] IUF. (2011, March 31). *Settlement at Nestlé Indonesia brings Nespressure campaign to successful conclusion.* Retrieved 1 August 2011, from http://cms.iuf.org/?q=node/851

[138] IUF (2009, July 14). *Stop Nespressure: UNIA and IUF Demand Global Rights for Nestlé Workers World-wide.* Retrieved 1 August 2011, from http://www.iuf.org/cgi-bin/dbman/db.cgi?db=default&uid=default&ID=6060&view_records=1&ww=1&en=1

[139] Nesspressure.org. (n.d.). *Nestlé's Corporate Social Irresponsibility C.S.I.* Retrieved 1 August 2011, from www.iuf.org/nespressure/en/Nestle_CSI.pdf

[140] The outline above is adapted from official company sources.

[141] Note that the Lactalis website is not comprehensive in this area and should not be relied on for comprehensive coverage of Lactalis activities. The following report is a more reliable source of up-to date data.
Parmalat S.P.A. (2011). *Documento di Offerta.* Retrieved from http://www.parmalat.com/en/investor_relations/tender_to_offer_lactalis/takeover_bid_document/doc/Documento%20di%20Offerta%20Sofil%20Sas%20su%20azioni%20Parmalat%20SpA.pdf

[142] Note that Pp. 39-44 of the following document also provide some detailed financial data for Lactalis that merit more detailed study.
Parmalat S.P.A. (2011). *Documento di Offerta.* Retrieved from http://www.parmalat.com/en/investor_relations/tender_to_offer_lactalis/takeover_bid_document/doc/Documento%20di%20Offerta%20Sofil%20Sas%20su%20azioni%20Parmalat%20SpA.pdf

[143] Lactalis International has a separate webpage at http://www.lactalis-international.com/

[144] This document merits further detailed technical analysis see the following document for details.
Parmalat S.P.A. (2011). *Documento di Offerta.* Retrieved from http://www.parmalat.com/en/investor_relations/tender_to_offer_lactalis/takeover_bid_document/doc/Documento%20di%20Offerta%20Sofil%20Sas%20su%20azioni%20Parmalat%20SpA.pdf

[145] Lactalis Group. (n.d.). *Sustainable Development.* Retrieved from http://www.lactalis.fr/english/groupe/valeurs/developpement.htm

[146] Danone (2010). *Our company- Introduction.* Retrieved 15 April 2011, from http://www.danone.com/en/company/introduction.html

[147] IFCN Dairy Research Center (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 2 July 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[148] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[149] Danone (1996). *Building Danone – 30 years of passion.* Retrieved 15 April 2011, from http://www.danone.com/en/company/history.html

[150] Danone (2010). *Our company- Introduction.* Retrieved 15 April 2011, from http://www.danone.com/en/company/introduction.html

[151] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[152] Danone (2009) *Economic and Social Report 2009.* Retrieved 15 April 2011, from http://danone09.danone.com/en/#/key-figures/key-figures2

[153] Danone (2010). *Fresh Dairy Products.* Retrieved 18 April 2011, from http://www.danone.com/en/brands/business/fresh-dairy-products.html

[154] Danone (2010). *Danone in the World.* Retrieved 16 April 2011, from http://www.danone.com/en/company/global-presence.html

[155] Danone (2010). *Fresh Dairy Products.* Retrieved 18 April 2011, from http://www.danone.com/en/brands/business/fresh-dairy-products.html

[156] Danone (2009) *Economic and Social Report 2009.* Retrieved 15 April 2011, from http://danone09.danone.com/en/#/key-figures/key-figures2

[157] Danone (2010). Global Presence. Retrieved 18 April 2011, from http://www.danone.com/en/company/global-presence.html

[158] Danone (2009). *Sustainability Report.* Retrieved 15 April 2011, from http://www.danone.de/danone-media/docs/pdfs/Danone_Sustainabilty_Report_09.pdf

[159] Danone (2009). *Sustainability Report.* Retrieved 15 April 2011, from http://www.danone.de/danone-media/docs/pdfs/Danone_Sustainabilty_Report_09.pdf

[160] Danone (2009). *Sustainability Report.* Retrieved 15 April 2011, from http://www.danone.de/danone-media/docs/pdfs/Danone_Sustainabilty_Report_09.pdf

[161] Danone (2009) *Economic and Social Report 2009.* Retrieved 15 April 2011, from http://danone09.danone.com/en/#/key-figures/key-figures2

[162] Danone (2009). *Sustainability Report.* Retrieved 15 April 2011, from http://www.danone.de/danone-media/docs/pdfs/Danone_Sustainabilty_Report_09.pdf

[163] Danone (2010). *Fresh Dairy Products.* Retrieved 18 April 2011, from http://www.danone.com/en/brands/business/fresh-dairy-products.html

[164] Danone (n.d.). *Research and Innovation*. Retrieved 20 April 2011, from http://www.danone.com/en/research-innovations/organisation/roles.html

[165] Danone. (n.d.). *Health Governance*. Retrieved 20 April 2011, from http://www.danone.com/en/company/health-governance.html

[166] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[167] Danone (2009) *Economic and Social Report 2009.* Retrieved 15 April 2011, from http://danone09.danone.com/en/#/key-figures/key-figures2

[168] Meleway, T. C., Badal, E., & Small, J. (2006). Danone branding strategy in China. *Journal of Brand Management, 13* (6), 407-417.

[169] ZacksResearch Analyst Blog (2011). *Danone Chooses IBM's Network.* Retrieved 27 April 2011, from http://www.traderplanet.com/commentaries/view/89263-danone_chooses_ibm_s_network_analyst_blog

[170] Savvas, A. (2011, April 16). IBM to provide Danone's new transaction network. *Computer World.* Retrieved 27 April 2011, from http://computerworld.co.nz/news.nsf/telecommunications/ibm-to-provide-danones-new-transaction-network

[171] Danone (2009). *Sustainability Report.* Retrieved 15 April 2011, from http://www.danone.de/danone-media/docs/pdfs/Danone_Sustainabilty_Report_09.pdf

[172] Vilanova, M., & Dettoni, P. (2011). *Sustainable Innovation Strategies: Exploring the cases of Danone and Interface.* Spain: ESADE Institute for Social Innovation.

[173] Danone (2009) *Economic and Social Report 2009.* Retrieved 15 April 2011, from http://danone09.danone.com/en/#/key-figures/key-figures2

[174] IUF (2009, October 28). *IUF/Danone Group Launch International Union/Management Meetings.* Retrieved 27 April 2011, from http://www.iuf.org/cgi-bin/dbman/db.cgi?db=default&uid=default&ID=6288&view_records=1&en=1

[175] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[176] The Dairy Blog....(2011, February 27). Global Dairy Top 10. Retrieved 22 July 2011, from http://kevinbellamy.wordpress.com/2011/02/27/global-dairy-top-10/

[177] Unilever. (2011). *Our History.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/aboutus/ourhistory/?WT.GNAV=Our_history

[178]Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[179] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[180]Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[181] Unilever. (2011). *Unilever Facts.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/aboutus/introductiontounilever/unileverataglance/?WT.LHNAV=Unilever_facts

[182] IFCN Dairy Research Center. (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 20 June 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[183] Unilever. (n.d.). *Unilever Procurement.* Retrieved 22 July 2011, from http://unilever.com/aboutus/supplier/unileverprocurement/index.aspx

[184] Unilever. (2011). *Introduction to Unilever.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/aboutus/introductiontounilever/?WT.GNAV=Introduction_to_Unilever

[185] Unilever. (2011). *Our Brands.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/brands/

[186] Unilever. (2011). *Unilever Facts.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/aboutus/introductiontounilever/unileverataglance/?WT.LHNAV=Unilever_facts

[187] Unilever. (2011). *Introduction to Unilever.* Retrieved 19 July 2011, from http://www.unileverbestfoods.com/aboutus/introductiontounilever/?WT.GNAV=Introduction_to_Unilever

[188] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[189] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[190] Unilever. (n.d.). *Country Selector.* Retrieved 21 July 2011, from http://www.unilever.co.id/resource/countryselector.aspx

[191] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[192] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[193] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[194] Unilever. (2007, September 14). *Unilever & Pepsico to Expand Ready-to-Drink Tea Joint Venture.* Retrieved 22 July 2011, from http://www.unilever.com/mediacentre/pressreleases/2007/UnileverPepsicotoexpand.aspx

[195] Unilever. (2006, April 11). *Unilever & World Heart Federation Continue Global Partnership to Improve Heart Health.* Retrieved 22 July 2011, from

http://www.unilever.com/mediacentre/pressreleases/2006/UnileverandWorldHeartFederationcontinueglobal200641401017.aspx

[196] Unilever. (n.d.). *Unilever Renews FDI World Dental Federation Partnership.* Retrieved 22 July 2011, from http://www.unilever.com/brands/hygieneandwelbeing/unileverrenewsFDIworlddentalfederationpartnership.aspx

[197] Unilever Sustainable Living Plan Advances With Recyclebank Partnership. (2011, May 3). *The Wall Street Journal.* Retrieved 22 July 2011, from http://online.wsj.com/article/PR-CO-20110503-912524.html

[198] Unilever. (n.d.). *Working With Others.* Retrieved 22 July 2011, from http://www.unileverbestfoods.com/sustainability/wellbeing/nutrition/others/index.aspx

[199] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[200] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[201] Unilever. (n.d.). *Employees shape up.* Retrieved 22 July 2011, from http://unilever.com/mediacentre/news/employeesshapeup.aspx

[202] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[203] Unilever. (n.d.). *Our Principles.* Retrieved 22 July 2011, from http://unilever.com/aboutus/purposeandprinciples/ourprinciples/?WT.LHNAV=Our_principles

[204] Unilever. (n.d.). *Overview of Research & Development in Unilever.* Retrieved 26 July 2011, from http://www.unilever.com/innovation/innovationinunilever/Overviewofresearchanddevelopmentinunilever/

[205] Unilever. (n.d.). *Our Nutrition Network.* Retrieved 22 July 2011, from http://unilever.com/innovation/researchanddevelopment/ournutritionnetwork/index.aspx

[206] Unilever. (n.d.). *Our R&D Centres- On The Map.* Retrieved 22 July 2011, from http://unilever.com/innovation/researchanddevelopment/onthemap/index.aspx

[207] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[208] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[209] Smith, W. S. (2009). Vitality in business: executing a new strategy at Unilever. *Journal of Business Strategy. 30*(4), 31-41.

[210] Rumyantseva, M., Enkel, E., & Pos, A. (2007). Supporting growth through innovation networks in Unilever. In A. Back, E. Enkel & G. Von Krogh (Eds.). *Knowledge Networks for Business Growth.* Heidelberg: Springer. 77-97.

[211] Smith, W. S. (2009). Vitality in business: executing a new strategy at Unilever. *Journal of Business Strategy. 30*(4), 31-41.

[212] Mostert, N. M. (2007). Diversity of the mind as the key to successful creativity at Unilever. *Creativity and Innovation Management, 16*(1), 93-100.

[213] Unilever. (2011). *Annual Report and Accounts 2010.* Retrieved 19 July 2011, from http://unilever.com/investorrelations/annual_reports/AnnualReportandAccounts2010/Downloadcentre.aspx

[214] OECD Final Statement. (2010, July 7). Complaint from the International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations against Unilever plc (Doom Dooma factory- Assam- India). Retrieved 26 July 2011, from http://www.bis.gov.uk/assets/biscore/business-sectors/docs/f/10-1228-final-statement-ncp-iuf-unilever-doom-dooma.pdf

[215] Unilever. (n.d.). *A More Detailed Description of the Four Cases Relating to Our Operations at Rahim Yar Khan and Khanewal in Pakistan and Sweri and Doom Dooma in India.* Retrieved 26 July 2011, from http://www.unilever.com/sustainability/employees/rights/

[216] IUF. (2011, June 10). *Four Years After Punishing Lockout, Unilever Assam Workers Still Waiting for Their Union to be Recognized.* Retrieved 26 July 2011, from http://cms.iuf.org/?q=node/951

[217] Pakistan- IUF. (2008, September 02). *Unilever: Combating Hunger or Destroying Jobs?* Retrieved 26 July 2011, from http://cal.icem.org/index.php/en/news-from-other-sectors/34-iuf-unilever

[218] IUF. (2009, October 27). *Unilever, IUF Settlement Resolves Conflict Over Precarious Work at Lipton Pakistan.* Retrieved 26 July 2011, from http://www.iuf.org/cgi-bin/dbman/db.cgi?db=default&uid=default&ID= 6281&view_records=1&en=1

[219] Unilever. (n.d.). *A More Detailed Description of the Four Cases Relating to Our Operations at Rahim Yar Khan and Khanewal in Pakistan and Sweri and Doom Dooma in India.* Retrieved 26 July 2011, from http://www.unilever.com/sustainability/employees/rights/

[220] Gaither, T. K., & Curtin, P. A. (2008). Examining the heuristic value of models of International public relations practice: a case study of the Arla foods crisis. *Journal of Public Relations Research, 20*(1), 115-137.

[221] IFCN Dairy Research Center (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 2 July 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[222] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[223] Arla Foods (n.d.). *History.* Retrieved 9 May 2011, from http://www.arla.com/about-us/history/company-history-2000-/

[224] Arla Foods (n.d.). *Our Company.* Retrieved 8 May 2011, from http://www.arla.com/about-us/our-company/

[225] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[226] Arla Foods (n.d.). *Facts and Figures.* Retrieved 9 May 2011, from http://www.arla.com/about-us/our-company/facts-figures/highlights/

[227] Arla Foods. (n.d.). *Lurpak.* Retrieved 9 May 2011, from http://www.arla.com/products/butter/lurpak/lurpak-butter/

[228] Arla Foods. (n.d.). *Castello.* Retrieved 9 May 2011, from http://www.arla.com/products/cheese/castello/castello-blue-cheese-black/

[229] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[230] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[231] Arla Foods (n.d.). *Market Strategy.* Retrieved 9 May 2011, from http://www.arla.com/about-us/our-company/strategy/markets/

[232] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[233] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[234] Arla Foods (n.d.). *Find us on the Map.* Retrieved 10 May 2011, from http://www.arla.com/contact/

[235] Arla Foods (2010). *CSR Report 2010.* Retrieved 9 May 2011, from http://www.arla.com/Upload/Global/Publications/PDF/arlacsr2010UK.pdf

[236] Arla Foods (n.d.). *Cooperative Democracy.* Retrieved 19 Mar 2011, from http://www.arla.com/about-us/our-company/co-operative-democracy1/

[237] Arla Foods (2010). *Annual Report 2010.* Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[238] Arla Foods (n.d.). *Organisation.* Retrieved 9 May 2011, from http://www.arla.com/about-us/our-company/organisation1/

[239] Arla Foods (n.d.). *Research & Innovation.* Retrieved 9 May 2011, from http://www.arla.com/about-us/research-and-innovation/

[240] Arla Foods (n.d.). *Research Adds Value- Research Strategy 2012.* Retrieved 1 June 2011, from http://www.arla.com/upload/arla%20dk/group/publications/research_strategy_2012.pdf

[241] Arla Foods (n.d.). *Research & Innovation.* Retrieved 9 May 2011, from http://www.arla.com/about-us/research-and-innovation/

[242] Arla Foods (n.d.). *Innovation.* Retrieved 9 May 2011, from http://www.arla.com/about-us/our-company/strategy/innovation/

[243] Arla Foods (n.d.). *Research & Innovation.* Retrieved 9 May 2011, from http://www.arla.com/about-us/research-and-innovation/

[244] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[245] Arla Foods (2010). *Annual Report 2010*. Retrieved 8 May 2011, from http://www.arlafoods.dk/upload/global/publications/pdf/arla2010uk_web.pdf

[246] Arla Foods (n.d.). *Business Intelligence.* Retrieved 1 June 2011, from http://www.platon.net/files/PDFs/Arla_BI_US.pdf

[247] Wonderware Southern Africa (2007). Archestrating 'One Arla' global strategy. *SA Instrumentation & Control- The Official Journal of the SAIMC, May 2007.* Retrieved 1 June 2011, from http://www.instrumentation.co.za/article.aspx?pklarticleid=4432

[248] IBM. (2009). *Arla Foods: Going Global with Insight and Technology.* Retrieved 1 June 2011, from http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=ODC03145USEN

[249] Best, D. (2008, November 25). *The just-food interview - Peder Tuborgh, Arla Foods.* Retrieved 12 June 2011, from http://www.just-food.com/interview/the-just-food-interview-peder-tuborgh-arla-foods_id104574.aspx

[250] Expansion plans for upbeat Arla. (2010, September 3). *Yorkshire Post.* Retrieved 12 June 2011, from http://www.yorkshirepost.co.uk/business/business-news/expansion_plans_for_upbeat_arla_1_2587369

[251] Arla UK to consolidate butter production at Westbury Dairies. (2010, November 4). *Arla News Press.* Retrievd 12 June 2011, from http://www.arla.com/press/arla-uk-to-consolidate-butter-production-at-westbury-dairies/

[252] Arla expands production in America. (2010, July 21). *Arla News Press.* Retrieved 12 June 2011, from http://www.arla.com/press/arla-expands-production-in-america/

[253] Arla to invest DKK 615 million in cheese production. (2011, April 13). *Arla News Press.* Retrieved 12 June 2011, from http://www.arla.com/press/arla-to-invest-dkk-615-million-in-cheese-production/

[254] Members vote in favour: Hansa-Milch and Arla Foods to merge. (2011, March 2). *Arla News Press.* Retrieved 12 June 2011, from http://www.arla.com/press/members-vote-in-favour-hansa-milch-and-arla-foods-to-merge/

[255] DMK and Arla Foods in whey processing partnership. (2011, March 18). *Arla News Press.* Retrieved 12 June 2011, from http://www.arla.com/press/dmk-and-arla-foods-in-whey-processing-partnership/

[256] Milko and Arla to discuss merger. (2011, June 9). *Arla News Press.* Retrieved 12 June 2011, from http://www.arla.com/press/milko-and-arla-to-discuss-merger/

[257] Informa Economics. (2010). *An International Comparison of Milk Supply Control Programs and Their Impacts.* Paper prepared for International Dairy Foods Association. Retrieved 4 June 2011, from http://www.keepdairystrong.com/files/Informa_International_Comparison_Supply_Control_Impacts_0910.pdp

[258] Gaither, T. K., & Curtin, P. A. (2008). Examining the heuristic value of models of international public relations practice: a case study of the Arla Foods crisis. *Journal of Public Relations Research, 20,*115-137.

[259] Holmström, S., Falkheimer, J., & Gade Nielsen, A. (2007). Arla Foods in globalisation: the cartoon crisis and other legitimacy conflicts. *Euprera-Loke.*

[260] Strange, C. (2008, October 31). *The Milk Scandal in China and its Implications for Arla.* Retrieved 1 June 2011, from http://news.asianstudies.dk/2008/10/the-milk-scandal-in-china-and-its-implications-for-arla/

[261] Xinhua News (2011, March 15). China says milk products safe, but restoring consumer confidence takes time. *Global Times.* Retrieved 4 June 2011, from http://business.globaltimes.cn/industries/2011-04/632935.html

[262] Arla Foods (2010). CSR Report 2010. Retrieved 9 May 2011, from http://www.arla.com/Upload/Global/Publications/PDF/arlacsr2010UK.pdf

[263] Dairy Farmers of America. (n.d.). *Our Cooperative.* Retrieved 03 July 2011, from http://www.dfamilk.com/our-cooperative

[264] IFCN Dairy Research Center (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 2 July 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[265] Dairy Farmers of America. (n.d.). *Our History.* Retrieved 03 July 2011, from http://www.dfamilk.com/our-cooperative/history

[266]Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[267] Dairy Farmers of America. (n.d.). *DFA by the Numbers.* Retrieved 2 July 2011, from http://www.dfainfo.com/dfamilk/DFA_By_the_Numbers.pdf

[268] IFCN Dairy Research Center. (2011). *Key Findings of the 12th IFCN Dairy Conference 2011 in Kiel.* Retrieved 20 June 2011, from http://www.ifcnnetwork.org/media/bilder/inhalt/News/Press-release-DC-2011-14-06-2.pdf

[269] Dairy Farmers of America. (n.d.). *Our Products.* Retrieved 6 July 2011, from http://www.dfamilk.com/our-products

[270] The Dairy Blog....(2011, February 27). Global Dairy Top 10. Retrieved 22 July 2011, from http://kevinbellamy.wordpress.com/2011/02/27/global-dairy-top-10/

[271] Dairy Farmers of America. (n.d.). *Contract Manufacturing.* Retrieved 15 July 2011, from http://www.dfamilk.com/our-products/contract-manufacturing

[272] Dairy Farmers of America. (n.d.). *Areas.* Retrieved 11 July 2011, from http://www.dfamilk.com/our-cooperative/areas

[273] Dairy Farmers of America. (n.d.). *Central.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/CentralAreaFS_Updated2010_HR.pdf

[274] Dairy Farmers of America. (n.d.). *Southeast.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/SoutheastAreaFS_Updated2010_hr.pdf

[275] Dairy Farmers of America. (n.d.). *Mideast.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/MideastAreaFS_Updated2010_HR.pdf

[276] Dairy Farmers of America. (n.d.). *Southwest.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/SouthwestAreaFS_Updated2010_HR.pdf

[277] Dairy Farmers of America. (n.d.). *Western.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/WesternAreaFS_Updated2010_HR.pdf

[278] Dairy Farmers of America. (n.d.). *Mountain.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/MountainAreaFS_Updated2010_hr.pdf

[279] Dairy Farmers of America. (n.d.). *Northeast.* Retrieved 11 July 2011, from http://www.dfainfo.com/dfamilk/NortheastAreaFS_Updated2010_hr.pdf

[280] Fonterra And Dairy Farmers of America Partnership. (2003, July 8). *Scoop Independent News.* Retrieved 12 July 2011, from http://www.scoop.co.nz/stories/BU0307/S00086.htm

[281] DairiConcepts. (n.d.). *About Us.* Retrieved 15 July 2011, from http://www.dairiconcepts.com/index.html

[282] DairiConcepts. (n.d.). *Locations.* Retrieved 15 July 2011, from http://www.dairiconcepts.com/locations.htm

[283] Dairy Farmers of America. (n.d.). *Leadership.* Retrieved 11 July 2011, from http://www.dfamilk.com/our-cooperative/leadership

[284] Dairy Farmers of America. (2007, March 30). *DFA Farmer Delegates Elect 2007 Board of Directors.* Retrieved 14 Jul7 2011, from http://www.dfamilk.com/newsroom/press-releases/dfa-farmer-delegates-elect-2007-board-directors

[285] The Official Board.com. (2011, May 13). *Dairy Farmers of America.* Retrieved 15 July 2011, from http://www.theofficialboard.com/org-chart/dairy-farmers-of-america

[286] Dairy Farmers of America. (n.d.). *Our Values.* Retrieved 12 July 2011, from http://www.dfamilk.com/our-values

[287] Dairy Farmers of America. (n.d.). *Membership.* Retrieved 12 July 2011, from http://www.dfamilk.com/membership

[288] Voorbergen, M. (2010, June). *Global Dairy Top-20.* Rabobank International. The Netherlands. Retrieved 01 Mar 2011, from http://www.rabobank.com/content/news/news_archive/037_Asian_companies_on_the_rise_in_Global_Dairy_Top20.jsp

[289] Dairy Farmers of America. (n.d.). DFA by the Numbers. Retrieved 2 July 2011, from http://www.dfainfo.com/dfamilk/DFA_By_the_Numbers.pdf

[290] The Dairy Blog....(2011, February 27). *Global Dairy Top 10.* Retrieved 22 July 2011, from http://kevinbellamy.wordpress.com/2011/02/27/global-dairy-top-10/

[291] Martin, A. (2008, May 18). Yes, it's a cooperative. But for whom? *The New York Times.* Retrieved 15 July 2011, from http://www.nytimes.com/2008/05/18/business/18feed.html?scp=1&sq=%22Dairy%20Farmers%20of%20America%22&st=cse

[292] Burnett, J. (2009, August 20). Independent farmers feel squeezed by milk cartel. *National Public Radio.* Retrieved 15 July 2011, from http://www.npr.org/templates/story/story.php?storyId=112002639

[293] U.S. Commodity Futures Trading Commission. (2008, December 16). *Dairy Farmers of America (DFA) and Two Former Executives to Pay $12 Million Penalty to Settle CFTC Charges of Attempted Manipulation and Speculative Position Limit Violations.* Retrieved 20 July 2011, from http://www.cftc.gov/PressRoom/PressReleases/pr5584-08.html

[294] Armstrong International. (n.d.). *Partnership Profile- Dairy Farmers of America.* Retrieved 12 July 2011, from

http://www.armstronginternational.com/files/common/Partnership%20Profiles/Food/Dairy%20Farmers%20of%20America.pdf

[295] Bernstein-Rein Advertising. (2010, Jan 19). *Dairy Farmers of America Selects Bernstein-Rein.* Retrieved 12 July 2011, from http://www.bernstein-rein.com/news/show/83

[296] New Zealand Trade and Enterprise. (2010, June). *New Zealand Dairy Industry.* Retrieved 23 Mar 2011, from http://business.newzealand.com/common/files/Dairy-industry-in-New-Zealand.pdf

[297] International Dairy Federation. (2010, March). *NZ Dairy Statistics.* Retrieved 24 Mar 2011, from http://www.wds2010.com/dairystats.html

[298] Dairy New Zealand. (2009, April). *Strategy for New Zealand Dairy Farming.* Retrieved 23 Mar 2011, from http://www.dairynz.co.nz/file/fileid/28814

[299] Ministry for the Environment. (2007). *Number of dairy farms in New Zealand.* Retrieved 29 Mar 2011, from http://www.mfe.govt.nz/environmental-reporting/land/use/dairy-farms.html

[300] The Agribusiness Research and Education Network. (2008, December). *The Key Elements of Success and Failure in the NZ Dairy Industry.* Retrieved 23 Mar 2011, from http://www.aren.org.nz/docs/dairy-technical-report.pdf

[301] New Zealand Trade and Enterprise. (2010, June). *New Zealand Dairy Industry.* Retrieved 23 Mar 2011, from http://business.newzealand.com/common/files/Dairy-industry-in-New-Zealand.pdf

[302] The Agribusiness Research and Education Network (2008, December). *The Key Elements of Success and Failure in the NZ Dairy Industry.* Retrieved 23 Mar 2011, from http://www.aren.org.nz/docs/dairy-technical-report.pdf

[303] International Dairy Federation. (2010, March). *NZ Dairy Statistics.* Retrieved 24 Mar 2011, from http://www.wds2010.com/dairystats.html

[304] The Agribusiness Research and Education Network. (2008, December). *The Key Elements of Success and Failure in the NZ Dairy Industry.* Retrieved 23 Mar 2011, from http://www.aren.org.nz/docs/dairy-technical-report.pdf

[305] Edwards, C., & DeHaven, T. (2002, March 3). Save the farms- end the subsidies. (Originally published in the *Washington Post*). Retrieved 24 Mar 2011, from http://www.cato.org/pub_display.php?pub_id=3411

[306] New Zealand Trade and Enterprise. (2010, June). *New Zealand Dairy Industry.* Retrieved 23 Mar 2011, from http://business.newzealand.com/common/files/Dairy-industry-in-New-Zealand.pdf

[307] Mackle, T. (2010, November 8-11). *New Zealand Dairy Farming on the Global Stage.* Presentation at the IDF World Dairy Summit, Auckland, New Zealand. Retrieved 21 Mar 2011, from http://www.wds2010.com/programplus.html

[308] Commerce Commission (n.d.). *The Dairy Industry Restructuring Act.* Retrieved 23 Mar 2011, from http://www.comcom.govt.nz/the-dairy-industry-restructuring-act/

[309] New Zealand Trade and Enterprise. (2010, June). *New Zealand Dairy Industry.* Retrieved 23 Mar 2011, from http://business.newzealand.com/common/files/Dairy-industry-in-New-Zealand.pdf

[310] Dairy New Zealand. (2009, April). *Strategy for New Zealand Dairy Farming.* Retrieved 23 Mar 2011, from http://www.dairynz.co.nz/file/fileid/28814

[311] Mackle, T. (2010, November 8-11). *New Zealand Dairy Farming on the Global Stage.* Presentation at the IDF World Dairy Summit, Auckland, New Zealand. Retrieved 21 Mar 2011, from http://www.wds2010.com/programplus.html

[312] New Zealand Trade and Enterprise (2010, June). *New Zealand Dairy Industry.* Retrieved 23 Mar 2011, from http://business.newzealand.com/common/files/Dairy-industry-in-New-Zealand.pdf

[313] The Agribusiness Research and Education Network. (2008, December). *The Key Elements of Success and Failure in the NZ Dairy Industry.* Retrieved 23 Mar 2011, from http://www.aren.org.nz/docs/dairy-technical-report.pdf

[314] Dairy New Zealand. (2009, April). *Strategy for New Zealand Dairy Farming*. Retrieved 23 Mar 2011, from http://www.dairynz.co.nz/file/fileid/28814

[315] Dairy Australia (n.d.). *The Australia Dairy Industry.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/The-Australian-Dairy-Industry.aspx

[316] Dairy Australia. (2010). *Australian Dairy Industry In Focus 2010.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/~/media/Publications/Australian%20Dairy%20Industry%20in%20Focus/2010/Australian%20Dairy%20Industry%20In%20Focus%202010.ashx

[317] Dairy Australia (n.d.). *The Australia Dairy Industry.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/The-Australian-Dairy-Industry.aspx

[318] Dairy Australia. (n.d.). *Export Summary.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/Industry-Statistics/Export-Summary.aspx

[319] Dairy Australia. (n.d.). *Deregulation.* Retriever 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/The-Australian-Dairy-Industry/Deregulation.aspx

[320] Harris, D. (2008, November 17-20). *Industry plans and dairy support policies in Australia.* Paper presented at the FAO Workshop: Designing Effective Country-Level Dairy Development Strategies, Bangkok, Thailand. Retrieved 27 April 2011, from http://www.aphca.org/workshops/Dairy_Workshop/Documents/Policy%20support%20to%20the%20Australian%20dairy%20sector.pdf

[321] Dairy Australia. (n.d.). *Industry Levies.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/The-Australian-Dairy-Industry/Industry-Levies.aspx

[322] Goode, P. (2010, August 21). *Australia and World Dairy Trends.* Paper presented at the China Dairy Industry Association Conference, Yinchuan, Ningxia Autonomous Region, China. Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/~/media/Documents/Our%20Dairy%20Industry/Dairy%20Markets/CDIA%20Australia%20and%20World%20Dairy%20Trends%20August%20%202010%20Phill%20Goode%20English.ashx

[323] Dairy Australia. (2010). *A snapshot of the Southern, Central and Coastal NSW dairy industry.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/DairyNSW%20SO%20factsheet%20August%202010.ashx

[324] Gippsland Official Website. (n.d.). *Gippsland Regional Profile 2002/2003.* Retrieved 30 April 2011, from http://gippsland.com/AboutUs/

[325] Dairy Australia. (2010). *A snapshot of the Gippsland dairy industry.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-

Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/GippsDairy%20SO%20factsheet%20September%202010.ashx

[326] Dairy Australia. (2010). *A snapshot of the dairy industry in Western Victoria.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/WestVic%20SO%20factsheet%20July%202010.ashx

[327] Dairy Australia. (2010). *A snapshot of the Murray Dairy region.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/Murray%20Dairy%20SO%20August%202010.ashx

[328] Dairy Australia. (2010). *A snapshot of the South Australian dairy industry.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/DairySA%20SO%20August%202010.ashx

[329] Dairy Australia. (2010). *A snapshot of the Tasmanian dairy industry.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/DairyTas%20SO%20August%202010.ashx

[330] Dairy Australia. (2010). *A snapshot of the Western Australia dairy industry.* Retrieved 29 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/~/media/Documents/Our%20Dairy%20Industry/Situation%20and%20Outlook/WesternDairy%20SO%20August%202010.ashx

[331] Goode, P. (2010, August 21). *Australia and World Dairy Trends.* Paper presented at the China Dairy Industry Association Conference, Yinchuan, Ningxia Autonomous Region, China. Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/~/media/Documents/Our%20Dairy%20Industry/Dairy%20Markets/CDIA%20Australia%20and%20World%20Dairy%20Trends%20August%20%202010%20Phill%20Goode%20English.ashx

[332] Dairy Australia. (n.d.). *Partners in the Dairy Industry.* Retrieved 23 April 2011, from http://www.dairyaustralia.com.au/Our-Dairy-Industry/Partners%20in%20the%20Dairy%20Industry.aspx

[333] Ginnivan, M. (2009, March 3-4). *Future Direction and Issues for the Australian Dairy Industry.* Paper presented at the National Outlook Conference, Canberra, ACT, Australia.

[334] Business Wire. (2011). *Research and Markets: The US Milk and Dairy Products Market Outlook to 2016-Introduction.* Retrieved 30 July 2011, from http://www.businesswire.com/news/home/20110531006633/en/Research-Markets-Milk-Dairy-Products-Market-Outlook

[335] USDA. (2006). *Dairy Backgrounder.* Retrieved 28 July 2011, from http://www.ers.usda.gov/publications/ldp/2006/07Jul/ldpm14501/ldpm14501.pdf

[336] USDA. (2010). *Overview of the United States Dairy Industry.* Retrieved 28 July 2011, from http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1831

[337] U.S. Dairy Export Council. (2011). *Export Trade Data.* Retrieved 28 July 2011, from http://www.usdec.org/Why/content.cfm?ItemNumber=82452

[338] USDA. (2011). *Milk Production, Disposition, and Income 2010 Summary.* Retrieved 30 July 2011, from http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1105

[339] U.S. Dairy Export Council. (2011). *Export Trade Data.* Retrieved 28 July 2011, from http://www.usdec.org/Why/content.cfm?ItemNumber=82452

[340] Progressive Dairyman. (2011). *2010 U.S. Dairy Stats.* Retrieved 28 July 2011, from http://www.progressivedairy.com/downloads/2011/general/2011_pd_stats_lowres.pdf

[341] Wisconsin Cheese. (2010). *Dairy Statistics.* Retrieved 28 July 2011, from http://media.eatwisconsincheese.com/dairyimpact/statistics/dairyStatistics.aspx

[342] Coppock, C. E. (2000). *Selected Features of the U.S. Dairy Industry from 1900 to 2000.* Retrieved 28 July 2011, from http://www.coppock.com/carl/writings/History_of_Dairy_Production_From_1900_to_2000.htm

[343] Fairvue Farms. (n.d.). *The History of U.S. Dairy Farming- Then and Now.* Retrieved 2 July 2011, from http://www.fairvuefarms.com/historydairy.htm

[344] Special Collections of the National Agricultural Library. (2002). *Early Developments in the American Dairy Industry.* Retrieved 28 July 2011, from http://www.nalusda.gov/speccoll/images1/dairy.htm

[345] U.S. Dairy Export Council. (2011).*Export Overview.* Retrieved 28 July 2011, from http://www.usdec.org/Why/content.cfm?ItemNumber=82367&navItemNumber=82213

[346] U.S. Dairy Export Council. (2011). *Export Trade Data.* Retrieved 28 July 2011, from http://www.usdec.org/Why/content.cfm?ItemNumber=82452

[347] USDA. (2010). *Cooperative Statistics 2009.* Retrieved 1 August 2011, from http://www.rurdev.usda.gov/Reports/2009StatisticalReport.pdf

[348] U.S. Dairy Export Council. (2011).*Export Overview.* Retrieved 28 July 2011, from http://www.usdec.org/Why/content.cfm?ItemNumber=82367&navItemNumber=82213

[349] U.S. Dairy Export Council. (2011). *U.S. Export of Dairy Products- Value- Mixed Units.* Retrieved 28 July 2011, from http://usdec.files.cms-plus.com/TradeData/PDFs/AllExports-Value.pdf

[350] Shields, D. A. (2010). Previewing Dairy Policy Options for the Next Farm Bill. Retrieved 28 July 201, from http://farmpolicy.typepad.com/files/dairyoptionsfarmbilldec10.pdf

[351] Morgan, N. (2008). *Dairy Policies in North America.* Presentation made at APHCA Meeting, Bangkok, Thailand. Retrieved 28 July 2011, from http://www.aphca.org/workshops/Dairy_Workshop/Presentations/North%20American%20dairy%20policies.pdf

[352] Environmental Working Group. (2011). *Dairy Program Subsidies in the United States.* Retrieved 28 July 2011, from http://farm.ewg.org/progdetail.php?fips=00000&progcode=dairy

[353] Yonkers, B. (2011). *A Look at Dairy Market Price Volatility and Options for Dairy Policy Reform.* Retrieved 1 August 2011, from http://keepdairystrong.com/files/A_Look_at_Dairy_Market_Price_Volatility_and_Options_for_Dairy_Policy_Reform_5-26-11.pdf

[354] Ling, C. (2011). Dairy Co-ops: what they are and what they do. *Rural Cooperatives, Mar/Apr 2011.* Retrieved 1 August 2011, from http://www.rurdev.usda.gov/rbs/pub/mar11/dairy.htm

[355] USDA. (2005). Cooperatives in the dairy industry. Cooperative Information Report 1, section 16. Retrieved 28 July 2011, from http://www.rurdev.usda.gov/rbs/pub/cir116.pdf

[356] USDA. (2010). *Cooperative Statistics 2009.* Retrieved 1 August 2011, from http://www.rurdev.usda.gov/Reports/2009StatisticalReport.pdf

[357] Progressive Dairyman. (2011). *2010 U.S. Dairy Stats.* Retrieved 28 July 2011, from http://www.progressivedairy.com/index.php?option=com_content&view=article&id=6103&Itemid=232

[358] USDA. (2011). *Dairy Products 2010 Summary.* Retrieved 30 July 2011, from http://usda.mannlib.cornell.edu/usda/current/DairProdSu/DairProdSu-04-27-2011.pdf

[359] USDA. (2006). *Dairy Backgrounder.* Retrieved 28 July 2011, from http://www.ers.usda.gov/publications/ldp/2006/07Jul/ldpm14501/ldpm14501.pdf

[360] Gould, B.W. (2011). Consolidation and concentration in the U.S. dairy industry. Choices- The Magazine of Food, Farm, and Resource Issues, 25(2). Retrieved 28 July 2011, from http://www.choicesmagazine.org/magazine/article.php?article=123

[361] Blayney, D., Gehlhar, M., Bolling, C. H., Jones, K., Langley, S., Normile, M. A., & Somwaru, A. (2006). U.S. Dairy at a global crossroads. *Economic Research Report, 28.* Retrieved 28 July 2011, from www.ers.usda.gov/publications/err28/err28.pdf

[362] USDEC. (2011). Export profile, 22(3). Retrieved 28 July 2011, from http://www.usdec.org/files/ExportProfile/ExportProfileJuly2011.pdf

[363] Progressive Dairyman. (2011). *2010 U.S. Dairy Stats.* Retrieved 28 July 2011, from http://www.progressivedairy.com/index.php?option=com_content&view=article&id=6103&Itemid=232

[364] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[365] Karmakar, K. G., & Banerjee, G. D. (2006). Opportunities and challenges in the Indian dairy industry. *Technical Digest, 2006:9*, 24-27. Retrieved 17 June 2011, from http://www.nabard.org/fileupload/DataBank/TechnicalDigest/ContentEnglish/issue9td-6.pdf

[366] Chawla, A., Chawla, N., & Pant, Y. (2009). *Milk and Dairy Products in India- Production, Consumption and Exports: Introduction.* India: Hindustan Studies & Services Ltd. Retrieved 17 June 2011, http://www.hindustanstudies.com/files/dairysept09tocintro.pdf

[367] Chand, S., Saraiya, A., & Sridhar, V. (2010). *Public Private Partnership in Indian Dairy Industry.* Retrieved 17 June 2011, from http://www.technopak.com/resources/Food/PPP%20in%20Indian%20Dairy%20Industry_Technopak_CII_Background%20Paper_May08,2010%20pdf%20ver.pdf

[368] National Dairy Development Board (2010). *National Statistics.* Retrieved 16 Jun 2011, from http://www.nddb.org/statistics/milkproduction.html

[369] Technopak. (2010). *Public Private Partnership in Indian Dairy Industry 2010.* Retrieved 17 June 2011, from http://www.technopak.com/resources/Food/PPP%20in%20Indian%20Dairy%20Industry_Technopak_CII_Background%20Paper_May08,2010%20pdf%20ver.pdf

[370] Chand, S., Saraiya, A., & Sridhar, V. (2010). *Public Private Partnership in Indian Dairy Industry.* Retrieved 17 June 2011, from

http://www.technopak.com/resources/Food/PPP%20in%20Indian%20Dairy%20Industry_Technopak_CII_Background%20Paper_May08,2010%20pdf%20ver.pdf

[371] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[372] Chand, S., Saraiya, A., & Sridhar, V. (2010). *Public Private Partnership in Indian Dairy Industry.* Retrieved 17 June 2011, from http://www.technopak.com/resources/Food/PPP%20in%20Indian%20Dairy%20Industry_Technopak_CII_Background%20Paper_May08,2010%20pdf%20ver.pdf

[373] Indian Mirror. (2011). *Indian Dairy Industry.* Retrieved 17 June 2011, from http://www.indianmirror.com/indian-industries/dairy.html

[374] Chawla, A., Chawla, N., & Pant, Y. (2009). *Milk and Dairy Products in India- Production, Consumption and Exports: Introduction.* India: Hindustan Studies & Services Ltd. Retrieved 17 June 2011, http://www.hindustanstudies.com/files/dairysept09tocintro.pdf

[375] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[376] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[377] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[378] Karmakar, K. G., & Banerjee, G. D. (2006). Opportunities and challenges in the Indian dairy industry. *Technical Digest, 2006:9*, 24-27. Retrieved 17 June 2011, from http://www.nabard.org/fileupload/DataBank/TechnicalDigest/ContentEnglish/issue9td-6.pdf

[379] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[380] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[381] Chand, S., Saraiya, A., & Sridhar, V. (2010). *Public Private Partnership in Indian Dairy Industry.* Retrieved 17 June 2011, from http://www.technopak.com/resources/Food/PPP%20in%20Indian%20Dairy%20Industry_Technopak_CII_Background%20Paper_May08,2010%20pdf%20ver.pdf

[382] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[383] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[384] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[385] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[386] Tikku, D. (2003, November). *Indian Dairy Sector and the National Dairy Development Board: An Overview.* Address made at the International Workshop of Livestock and Livelihoods: Challenges and Opportunities for Asia in the Emerging Market Environment, Anand, India. Retrieved 16 June 2011, from http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/LL05.pdf

[387] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[388] Karmakar, K. G., & Banerjee, G. D. (2006). Opportunities and challenges in the Indian dairy industry. *Technical Digest, 2006:9*, 24-27. Retrieved 17 June 2011, from http://www.nabard.org/fileupload/DataBank/TechnicalDigest/ContentEnglish/issue9td-6.pdf

[389] Karmakar, K. G., & Banerjee, G. D. (2006). Opportunities and challenges in the Indian dairy industry. Technical Digest, 2006:9, 24-27. Retrieved 17 June 2011, from http://www.nabard.org/fileupload/DataBank/TechnicalDigest/ContentEnglish/issue9td-6.pdf

[390] Goswami, B. (2007, October 4-5). *Can Indian Dairy Cooperatives Survive in the New Economic Order?* Paper presented at the WTO Public Forum "How Can the WTO Help Harness Globalization", Geneva, Switzerland. Retrieved 16 June 2011, from http://www.wto.org/english/forums_e/public_forum2007_e/session11_goswami_e.pdf

[391] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[392] National Dairy Development Board (2010). *National Statistics.* Retrieved 16 Jun 2011, from http://www.nddb.org/statistics.html

[393] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[394] Singh, R. (2011). *India Dairy and Products Annual Report 2010.* USDA Foreign Agricultural Service: Global Agricultural Information Network. Retrieved 16 June 2011, from static.globaltrade.net/files/pdf/20110226231255627.pdf

[395] National Dairy Development Board (2010). *National Statistics.* Retrieved 16 Jun 2011, from http://www.nddb.org/statistics.html

[396] Chawla, A., Chawla, N., & Pant, Y. (2009). *Milk and Dairy Products in India- Production, Consumption and Exports: Introduction.* India: Hindustan Studies & Services Ltd. Retrieved 17 June 2011, http://www.hindustanstudies.com/files/dairysept09tocintro.pdf

[397] Thakur, S. (2010, October 12). Indian Dairy Industry. *Indian Industry Tracker.* Retrieved 17 June 2011, from http://industrytracker.wordpress.com/2010/10/12/indian-dairy-industry/

[398] Karmakar, K. G., & Banerjee, G. D. (2006). Opportunities and challenges in the Indian dairy industry. *Technical Digest, 2006:9*, 24-27. Retrieved 17 June 2011, from http://www.nabard.org/fileupload/DataBank/TechnicalDigest/ContentEnglish/issue9td-6.pdf

[399] Thakur, S. (2010, October 12). Indian Dairy Industry. *Indian Industry Tracker.* Retrieved 17 June 2011, from http://industrytracker.wordpress.com/2010/10/12/indian-dairy-industry/

[400] High Level Group on the Competitiveness of the Agro-Food Industry. (2009). *Report on the Competitiveness of the European Agro-Food Industry.* European Commission Enterprise and Industry Directorate General Food Industry Unit. Retrieved from http://ec.europa.eu/enterprise/sectors/food/files/high_level_group_2008/documents_hlg/final_report_hlg_17_03_09_en.pdf

[401] European Communities. (2006). *Milk and Milk Products in the European Union.* Retrieved from http://biblio.ucv.ro/bib_web/bib_pdf/EU_books/0035.pdf

[402] Matthews, A. (2010, December 23). Milk market on track for soft landing following quota removal. *Capreform.eu.* Retrieved from http://capreform.eu/milk-market-on-track-for-soft-landing-following-quota-removal/

[403] European Milk Board. (n.d.). Retrieved from http://www.europeanmilkboard.eu/

[404] European Commission. (2010, December 8). *Report from the European Commission to the European Parliament and the Council.* Retrieved from http://ec.europa.eu/agriculture/milk/quota-report/com-2010-727_en.pdf

[405] Gradebroek, C., Turi, K. N., & Wijnands, J. H. M. (2009, August 16-22). Growth Dynamics of Dairy Processing Firms in the European Union. Paper presented at the International Association of Agricultural Economists' 2009 Conference. Beijing, China. Retrieved from http://ageconsearch.umn.edu/bitstream/51473/2/Dynamics%20of%20EU%20Dairy%20Processing%20Firms%20IAAE%20Beijing%20paper%20271.pdf

[406] Tacken, G.M. L., et al. (2009, March). *Competitiveness of the EU Dairy Industry Report 2009-11, March,* LEI Wageningen UR, The Hague. Retrieved from http://www.lei.dlo.nl/publicaties/PDF/2009/2009-011.pdf

[407] Tacken, G.M. L., et al. (2009, March). *Competitiveness of the EU Dairy Industry Report 2009-11, March,* LEI Wageningen UR, The Hague. Retrieved from http://www.lei.dlo.nl/publicaties/PDF/2009/2009-011.pdf

[408] Tacken, G.M. L., et al. (2009, March). *Competitiveness of the EU Dairy Industry Report 2009-11, March,* LEI Wageningen UR, The Hague. Retrieved from http://www.lei.dlo.nl/publicaties/PDF/2009/2009-011.pdf

[409] Matthews, A. (2010, January 6*).* Lessons from the 2009 EU dairy market crisis. Capreform.eu. Retrieved from http://capreform.eu/lessons-from-the-2009-eu-dairy-market-crisis/

[410] Matthews, A. (2010, January 6*).* Lessons from the 2009 EU dairy market crisis. Capreform.eu. Retrieved from http://capreform.eu/lessons-from-the-2009-eu-dairy-market-crisis/

[411] European Dairy Association. (2010). *Major Issues.* Retrieved from http://www.euromilk.org/upload/docs/EDA/EDA_MI_22_Website.pdf

[412] O'Connor, D., Keane, M., & Barnes, E. (2009, April 1*). The Policy and Trade Challenges of Managing Price Risk in the EU Dairy Industry.* Paper presented at Agricultural Economics Society Conference. United Kingdom. Retrieved from http://aesi.ie/aes2009/s6d.pdf