



**THE
WHITE
PAPER**

OCTOBER 2017

Dairy
UK

DAIRY UK

Dairy UK is the trade association for the British dairy supply chain. It brings together farmers, dairy co-operatives and processors, manufacturers and bottle milk buyers throughout the United Kingdom.

Between them, Dairy UK members collect, process and distribute almost 85% of UK milk production. Our role is to help create a positive platform for the future of dairy.

Our overarching goals are:

To help create an environment in which dairy foods are seen as safe, sustainable and integral to the UK nation's diet;

To help create an environment that allows the dairy sector to compete and grow without an undue burden of regulation.

Dairy UK represents its members interests with a variety of stakeholders including: parliamentarians, Government departments, policy and regulatory bodies, industry organisations and the media.

We offer our members and the stakeholders with whom we interact a wealth of knowledge and experience across areas such as policy and economics, supply chain integrity and technical issues, nutrition and health, environmental sustainability and occupational health and safety.

Dairy UK owns a number of successful subsidiaries and schemes including:

- The Dairy Council;
- The British Cheese Board (BCB);
- Dairy Energy Savings (DES);
- Dairy Transport Assurance Scheme (DTAS);
- Roll Container Repatriation Scheme. (Trolley Team)

We have a strong international role working through organisations such as the International Dairy Federation, European Dairy Association and the Global Dairy Platform. Our CEO, Dr Judith Bryans, was elected President of the International Dairy Federation in October 2016 an organisation representing 45 countries and 75% of the global milk supply which makes it the global voice for the dairy sector on issues along the entire dairy chain from farm to fridge.

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CHAIRMAN'S INTRODUCTION

Welcome to the 2017 edition of The White Paper, which records the performance and importance of the UK dairy industry, whilst calling on Government to support the dairy industry with the many challenges and opportunities that lie ahead.

We take great pride in our industry and understandably so. Dairy matters a great deal and, like any strategically important industry, we need to ensure we are meeting the challenges of today and are equipped to deal with what the future holds.

Every year is eventful for our industry, but 2017 has presented us with some of our greatest tests yet. Brexit looms large on the horizon and so there has never been a more important time for us to remind Government and decision makers of our significance.

In this year's White Paper we have been clear on what we think Government could do to help create an even more dynamic and successful dairy sector, highlighting the key policy challenges and opportunities we face. We look forward to working closely with the Government and key decision makers through these times of change, and are confident the dairy industry will emerge stronger than ever before.

I am glad to report there is great unity of purpose across the industry in sparing no effort to inform Government of how vital it is to have a thriving dairy industry and what

steps need to be taken to mitigate the threats and maximise the opportunities that Brexit presents, to ensure that we continue to be successful. We're calling on the Government to work with us and ensure that future trading arrangements can work for our industry, and include fundamentals such as access to labour, supporting our dairy farmers and ensuring we can continue to export to the EU and the world.

Our industry has to contend with a vast range of issues ranging from nutrition to the environment and animal welfare, and there is a continuing need for us to promote relentlessly the nutritional benefits of our foods. Of paramount importance is our ability to maintain the outstanding confidence consumers continue to show in our products. In this edition of the White Paper we have set out how we can work with the Government on these key issues so we can secure the resilient and effective dairy industry the future needs. Given the increase in global demand for dairy, prospects are good. We do, however, need to seize the moment – and that will require yet more of the innovation and inspiration that have been the hallmark of our industry for generations.

I hope you find this year's White Paper a helpful reference tool and a useful insight into a great UK industry.

Paul Vernon,
Chairman, Dairy UK.

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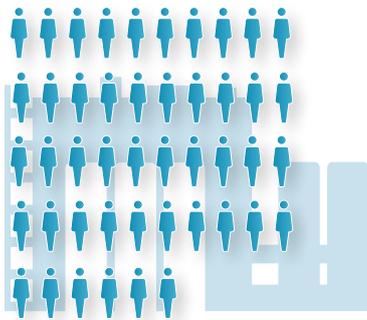
1 ● THE SIGNIFICANCE OF THE UK DAIRY SECTOR

THE IMPORTANCE OF THE DAIRY SECTOR IN THE UK

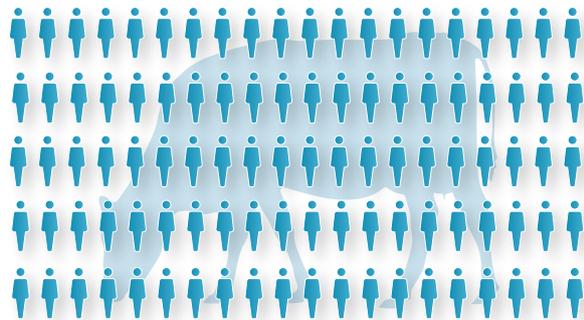
The dairy sector plays a significant positive role in the UK economy, the diets of consumers, rural communities, the environment and in food security.

Over 70,000 people are employed directly by the dairy sector in the UK on farm and in processing plants. Additional employment is provided within subsidiary industries whose own profitability relies on a strong dairy industry.

DAIRY INDUSTRY EMPLOYMENT



23,000
Employed by processors

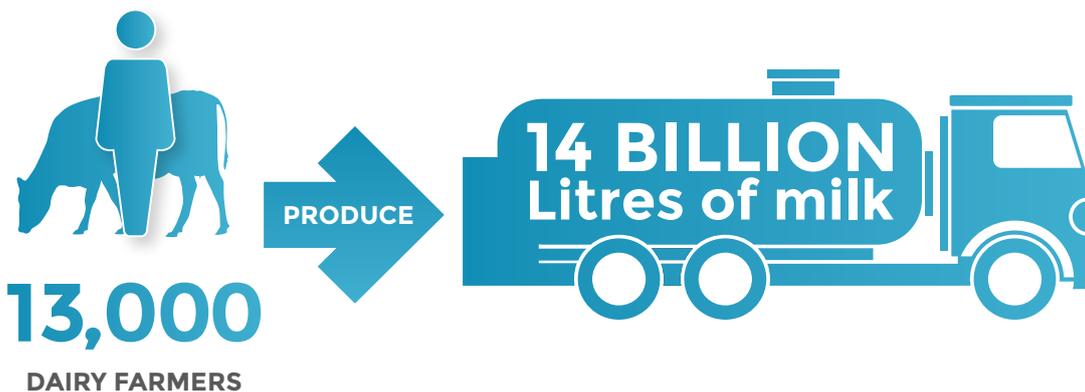


50,000
Employed on farms

With 13,000 dairy farmers producing over 14 billion litres of milk annually, dairy represents

14.8% of the value of agricultural produce in the UK and £8.8 billion of sales at wholesale level.

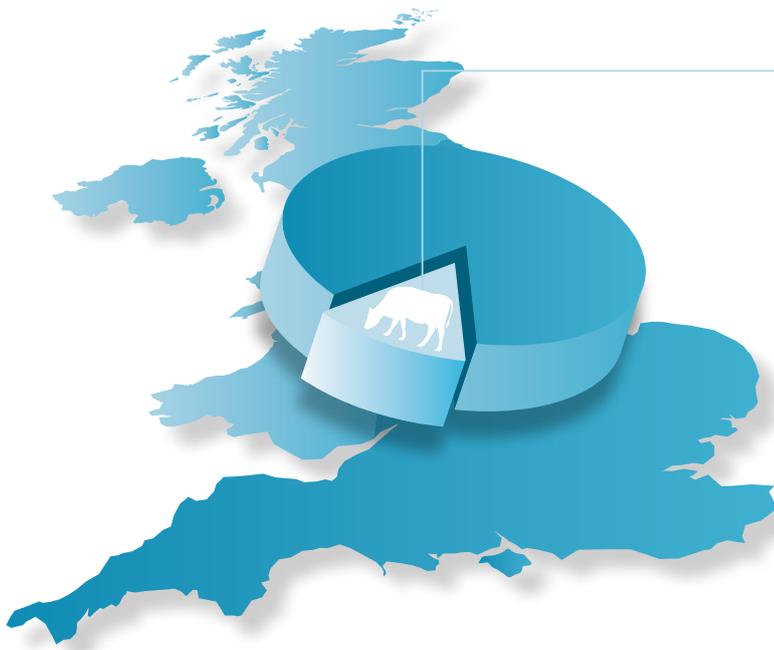
ANNUAL MILK PRODUCTION



The estimated value of the industry is an aggregate of £27.8 billion once indirect and

induced multiplier impacts are taken into account.

VALUE OF OUR INDUSTRY



14.8%

of the value of
agriculture produce
at farm level.

£8.8bn

of sales at wholesale.

£27.8bn

aggregate turnover impact
estimated once indirect and induced
multiplier impacts are considered.

The dairy industry helps to feed the UK. It's therefore an important part of the nation's food security.

Dairy farmers are key to stewardship of the land and the dairy sector plays a key role in the prosperity of rural communities.

RURAL IMPACT OF DAIRY

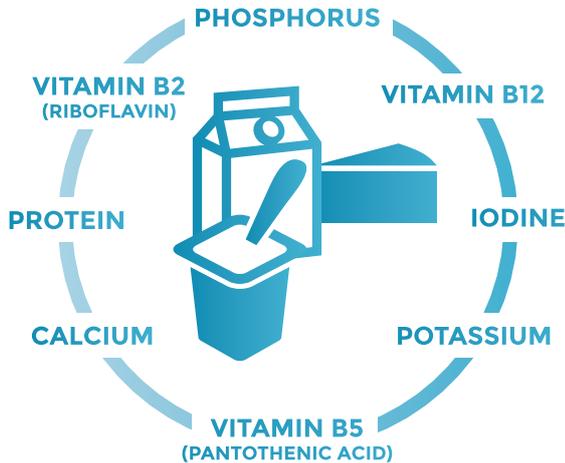
Dairy is the bedrock of local communities.



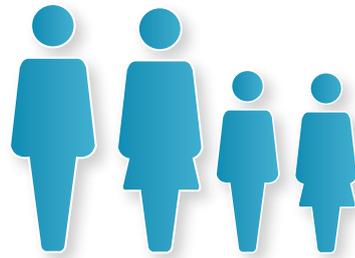
Our processors deliver high quality, safe and nutritious foods to the UK consumer and both

farmers and processors are committed to producing dairy foods sustainably.

DAIRY AND A SUSTAINABLE DIET



The dairy food group plays an important role in providing **key nutrients** to the diets of children and adults.



DAIRY'S GLOBAL STORY

The UK dairy industry is part of a larger global dairy story. It is part of a one billion strong community of people whose economic livelihoods rely on the dairy sector. Around six billion people enjoy dairy foods and ingredients worldwide.

With 20% of the world's agricultural land being cared for by the dairy sector, and accounting for 14% of global agricultural trade, milk is the top agricultural commodity in value terms the world over.

DAIRY UK AND ITS MEMBERS: COMMITTED TO THE FUTURE OF THE UK DAIRY SECTOR

At Dairy UK we are proud to represent a vibrant dairy sector which plays its part nationally and internationally in enriching peoples lives economically, nutritionally and environmentally.

Our members produce some of the most loved and enjoyed foods found in UK fridges, and are continually striving to drive the industry forward.

The areas in which we represent our members touch the length of the supply chain and are covered in this report. Our overriding goal is to build a positive platform for the future of dairy.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Acknowledge the importance of the dairy sector to the economy, the countryside and the nation's diet and the key role it plays in food security and in rural communities;
- Listen closely to the views of the sector when formulating policy on food and farming issues;
- Demonstrate its support for the importance of dairy in the diet to consumers;
- Work collaboratively with the dairy industry to facilitate the growth of the sector.

2. BREXIT

The decision by the UK to leave the European Union presents the UK dairy industry with one of its most significant challenges in generations.

After 40 years of membership of the EU, the UK dairy industry is deeply enmeshed in the European dairy market.

As the sector's aggregate turnover is calculated at £27.8bn, the industry is clearly a key component in the UK economy. Therefore, it is in the national interest for dairy to be given due prominence during the Brexit process and for the industry to emerge as an effective, dynamic sector equipped to continue to feed the nation for generations to come.

The EU is our biggest export market and Brexit can be a success for the sector if impediments to the existing pattern of trade with the EU are minimised.

Stability is of paramount importance. The UK Government recently published a position paper on the continuity of the availability of goods for the EU and the UK and highlighted the importance of agri-foods. Dairy UK supports the UK Government's stated aim of reaching agreement with the EU in order to secure frictionless trade in goods and services and welcomes the priority given to agri-foods.

Minimising disruption to consumers and dairy businesses will help the UK dairy industry take

advantage of the opportunities that Brexit may yield.

Dairy UK is committed to working closely with the Government to ensure that the needs of the sector are taken into account.

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IMPORTANCE OF THE UK DAIRY SECTOR

UK dairy processors currently process 14 billion litres of milk supplied by 13 thousand dairy farmers. UK dairy processors directly employ 23 thousand staff in dairy operations and cheese making. A total of 50 thousand individuals are employed on dairy farms in the UK.

Dairy farmers are responsible for the management of around 8% of UK land area and the welfare of 1.9 million cows.

The sector provides a range of safe, nutritious and value for money foods that are consumed in 98% of UK households. Dairy products account for 9% of a UK adult's calorie intake of which two-thirds is from domestically sourced production.

BREXIT AND TRADE

FUTURE RELATIONSHIP WITH THE EU

The absolute priority for the UK Government should be the earliest possible conclusion of a Free Trade Agreement with the EU that ensures the greatest possible continuity of existing arrangements. The worst outcome to the Brexit negotiations would be for trade with the EU to be based only on WTO rules.

The tariffs for dairy products in the EU's WTO MFN tariff schedule are prohibitively high in order to prevent the import of dairy products into the EU. Imposition of the WTO schedule by the UK would make EU imports into the UK much more expensive which would impact on UK wholesale prices.

UK sales to the EU, which account for the overwhelming majority of UK dairy exports, would have to surmount the EU tariff wall. Given that UK exports account for a small portion of EU total consumption, then they would become immediately uncompetitive.

The UK's position on third country markets would also be eroded. A rise in UK wholesale prices would lift the price of raw milk. This would pull UK input costs out of line with the world market.

A rise in domestic prices would also be destructive of domestic demand and result in the increased consumption of dairy substitutes.

The impact of WTO tariffs on the UK dairy market was modelled in a study commissioned from the Centre of Economics and Business Research (CEBR) using econometric analysis. The results are summarised below. They include a forecast increase in wholesale cheddar prices of 51% compared to the average price prevailing over the past four years.

Whilst UK milk production could be expected to rise to meet rising domestic prices, growth beyond immediate spare capacity would be constrained by the delay in bringing on new capacity. Calves take time to reach maturity. There is limited spare capacity in the processing sector and it takes at least two years to commission and build a new plant.

Moving outside the EU Customs Union would have a costly impact on export administration procedures which will inevitably become more complex for UK exports to the EU.

Table 1. WTO Tariff Implications for Dairy Prices in the UK

	Average 2013-17	Average WTO EU tariff	Ad valorem equivalent %	% impact on prices	Monetary impact on prices	Post-tariff price
Retail milk (p/litre)	46.00	15.97	35%	Uncertain	Uncertain	Uncertain
Wholesale cheddar (£/100kg)	278.50	142.00	51%	+33%	+91.91	370.40
Retail cheddar (£/kg)	5.58	1.42	25%	+20%	+1.12	6.70
Retail butter (£/kg)	5.60	1.61	29%	+2%	+0.11	5.70

NORTHERN IRELAND

Ensuring greatest possible continuity of existing arrangements is particularly important for the dairy industry in Northern Ireland which is heavily reliant on exports to the EU, of both raw milk to the Republic and sales of product to the rest of the EU.

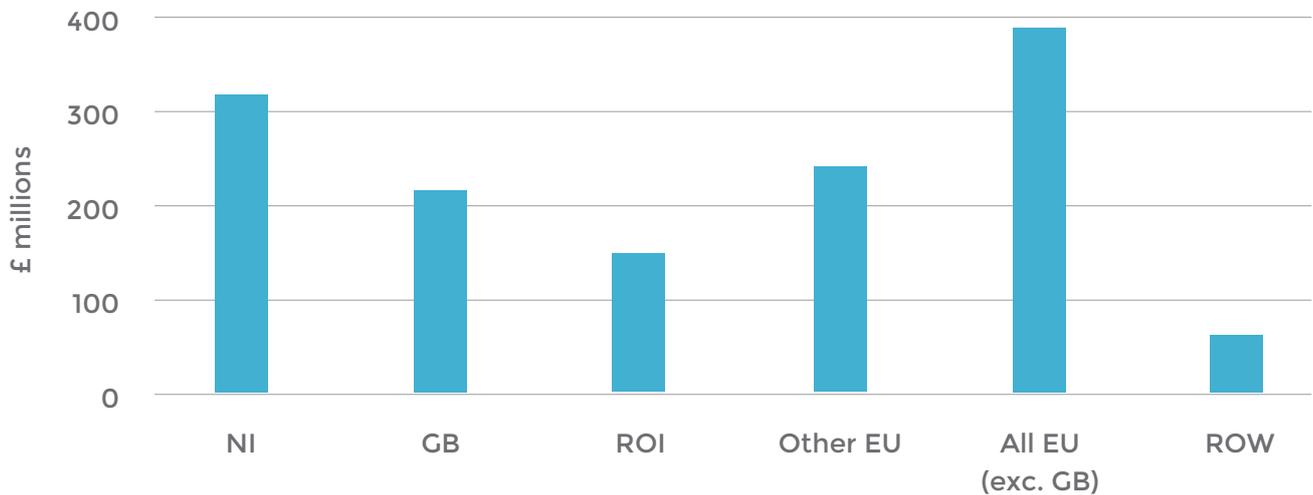
The relationship between Northern Ireland and the Republic is particularly significant. In 2015 dairy exports from Northern Ireland were estimated to be £154m (second in market value only to GB) representing approximately 15% of total sales of the NI dairy industry. The value of exports from ROI to NI during the same year was estimated at £61.6m. However the relationship between NI and ROI dairy industries goes beyond just the volume and value of trade alone, ROI dairy co-operatives

own approximately 60% of the processing capacity in NI.

It is therefore essential that when the UK leaves the EU two-way access between NI and ROI of raw milk, dairy products for further processing, and finished goods are maintained, without tariffs and free from burdensome non-tariff administrative measures.

A hard border between the ROI and NI would be the least desirable option for the dairy industry. Failure to achieve a soft border will create uncertainty around the ability of the dairy industry in NI to continue to operate as it does currently, and in a way that minimises cost and maximises efficiency, to the benefit of all its stakeholders.

Graph 1: Northern Ireland Milk and Milk Product Sales by Destination in 2014



STANDARDS

It is also important that the UK does not create non-tariff barriers with the EU through divergence in standards. Issues that could arise include;

- Adoption by the UK of mandatory front of pack traffic-light labelling system, currently applied on a voluntary basis in the UK, could become mandatory following Brexit. At the moment, concerns for the free movement of goods within the EU are stopping it from becoming compulsory;

- Introduction of nutrient profiles by Public Health England according to which products would not be able to bear claims on pack if they exceeded certain thresholds for salt, saturated fat and sugar;
- Introduction of mandatory country of origin labelling which is currently voluntary in the UK.

This would create a divergence in the regulatory environment between the UK and the EU which would also have a bearing on UK trade relations with non-EU countries which is currently conducted on the basis of UK adherence to EU standards.

AGRICULTURAL POLICY

Another major aspect of future relations with the EU will be the development of the UK's independent agricultural policy outside the Common Agricultural Policy.

Assuming a tariff free deal with the EU can be reached, the UK dairy sector will continue to have to compete with subsidised EU farmers. Therefore, it will be important for UK dairy farmers to have a level playing field with their EU counterparts, by maintaining similar levels of public support.

Support under the EU's Common Agricultural Policy ensures that EU milk production is higher than would be the case

without subsidies, which acts to reduce the overall level of EU prices. In this price environment, direct payments become central to the viability of UK dairy farming.

Removing basic payments in the UK would therefore have a significant impact on the productive potential of the sector.

Should the financial resources allocated to direct payments be reduced, these reductions should be compensated by resources being moved to schemes that improve the competitiveness of the sector in order to offset the loss of direct payments.

Table 2: Average Direct Payment to Dairy Farmers by UK Country 2015

	Single Farm Payment	Farm Business Income	Percentage
England	23,400	83,800	28%
Wales	18,500	70,200	26%
Scotland	33,611	68,471	49%
Northern Ireland	20,486	45,728	45%

TRADE WITH NON-EU COUNTRIES

CREATION OF A WTO SCHEDULE

In respect of non-EU countries the UK's priority should be establishing an independent tariff scheduled in the WTO. The UK should replicate the EU's import tariff schedule to create negotiating leverage for free trade agreements. The UK would then be at liberty to operate Most Favoured Nation tariffs below the limits set by its schedule if it chose to do so.

Agreement would also be required on the UK's share of the EU's Tariff Rate Quotas (TRQs) for dairy products. However none of these quotas play a significant role in meeting UK domestic demand for dairy products. New Zealand no longer utilises its butter quota and utilisation rates for the remaining TRQs are highly dependent on short term market developments. This is because the tariffs associated with each quota are still significant, consequently exporters only have an incentive to utilise the TRQ when there is a sufficient divergence between the EU or UK market and the world market price to make payment of the tariff commercially viable. This can occur at different points in the price cycle but not with sufficient consistency to ensure full utilisation from year to year. Consequently the trade under these TRQs is short term and price driven.

The UK will also have to negotiate its share of WTO restrictions on EU domestic support although this is not expected to be a major issue.

UK SHARE OF EU EXPORT TARIFF RATE QUOTAS

Under a range of trade agreements the EU has a number of TRQs for dairy exports to non-EU countries. They include USA, Dominican Republic, Switzerland, Norway and South Korea. TRQs for exports to Canada and Japan will become available before Britain leaves the EU.

The most important export TRQ for the UK dairy industry is with the USA. Trade outside this TRQ for high value cheeses is often undertaken. However these TRQs are important to UK cheese exporters. The UK Government should seek to negotiate a continuing share of these TRQs based on historic utilisation.

FUTURE FREE TRADE AGREEMENTS WITH NON-EU COUNTRIES

Dairy UK supports the Government seeking expanded trade opportunities outside the EU for the UK dairy sector. If the dairy sector is to realise its full potential then it needs to find greater market opportunities outside the UK. However, any future agreements should be balanced and not prejudice the UK dairy industry's position in its home market or its existing export markets, particularly the EU.

To benefit the sector trade agreements must provide greater market access for dairy products. Agreements should promote offensive dairy interests through improved market access in terms of zero tariffs and no TRQs. Another prerequisite to achieving

market access is to solve any barriers to trade and to promote agreements covering Sanitary and Phytosanitary issues and to achieve equivalence agreements.

Defra needs to ensure adequate resources to support and overcome administrative issues in relation to increased export. This includes working on improvements to the export health certificate administration system.

TARGET MARKETS

For the UK dairy industry the ideal candidates for FTAs would be countries that provided a combination of:

- * An existing trade deficit in dairy products. This would clearly help to ensure that any FTA would work to close the UK's trade deficit in dairy products.
- * Rapidly expanding demand. Achieving market share in a rising market is easier than in a stable market. Globally rapid urbanisation, rising disposable income and change in dietary preferences is generating significant growth opportunities for dairy.

These two factors would tend towards seeking FTAs with countries in the far-east and China in particular. Other target countries would be in the middle-east.

Further criteria would be affluent countries with a food culture close to the UK. This would enable exporters to exploit their existing product range. This would include Canada,

USA and Australia. In combination these five target countries/regions are those identified in Dairy UK's export strategy as providing the greatest commonality in the export strategies being pursued by Dairy UK members.

The UK Government will be under strong pressure to conclude early FTAs with the UK's traditional trading partners. Care needs to be taken to ensure that the industry pricing structure in these countries do not allow them to utilise below cost pricing to obtain and sustain market share in the UK market. In addition the Government must ensure that the production practices in these countries do not undermine UK consumer confidence in the wholesomeness and safety of dairy products.

A number of UK dairy products have been granted protected status under the EU's PDO/PGI scheme. The benefits accrued to these products should be recognised in any FTA negotiated by the UK.

UK FOOD SAFETY

A prerequisite to the UK dairy industry maintaining and expanding exports is confidence in the safety of UK dairy products. The UK Government has a vital role to play in demonstrating to other countries the effectiveness of the food safety systems operated by UK authorities and by the industry. This requires the Government to invest in the resources and expertise to communicate on this issue to foreign Governments, particularly during and after inspection visits.

BREXIT AND THE DAIRY INDUSTRY: RISKS Vs. OPPORTUNITIES

Ensure trading arrangements with the EU continue without tariff and non-tariff barriers

THE RISKS

Significant tariff barriers would undermine exports, reduce domestic demand for dairy, provide an incentive for the growth in sales of dairy substitutes and disrupt the operation of the Northern Ireland industry. Imports from the EU would become prohibitively expensive, impacting wholesale prices negatively- with wholesale cheddar prices potentially increasing 51% in the event of no deal being reached with the EU.

Non-tariff barriers would result in disruption of trade and imposition of additional costs on the industry.

THE OPPORTUNITIES

Minimising disruption to trade would ensure continued access to one of the largest most solvent dairy markets in the world, which presents the UK with considerable potential for sales growth in the future.

Ensure there is continued access to skilled and unskilled labour

THE RISKS

Unlike other areas of agriculture, dairy farming requires a steady level of labour throughout the year, as opposed to seasonal fluctuations. With over 70,000 employees currently working in the dairy sector, producing over 14 billion litres of milk a year, it is an important cornerstone of the UK economy.

So any inability to recruit trained or untrained EU labour would have a big impact on the dairy sector, driving up operating costs, with a consequential impact on margins.

For many individual dairy farmers, the absence of an alternative domestic source of labour would threaten the viability of their businesses.

THE OPPORTUNITIES

Solutions could be found to access non-EU labour that would enable the industry to maintain its current scale of operation.

Ensure any review of existing regulations or the introduction of new regulations will not create non-tariff barriers

THE RISKS

Any divergence in the UK's regulatory environment could create de-facto barriers to trade that would inhibit export growth.

THE OPPORTUNITIES

A recognition of the need for equivalence of standards between the EU and UK would facilitate that continuation of existing trade at minimum cost.

Take steps to ensure UK farmers are not disadvantaged compared to their European neighbours, and that any future schemes put in place by government reward continual improvements in efficiency and farming best practice

THE RISKS

Giving excessive emphasis in agricultural policy to environmental pillars of sustainability would undermine the competitiveness of the sector. This would happen especially in a regional dairy market, where EU farmers would be receiving continued high levels of income support.

THE OPPORTUNITIES

Policy solutions could be found which allow public support to be more effective in enhancing the sustainability of the sector, whilst permitting a reconfiguration of policy objectives.

Allow for an adequate transition period to stabilise the trading environment and allow companies adequate time to overcome any hurdles associated with Brexit and to take advantage of the opportunities Brexit gives rise to

THE RISKS

A rushed transition would disrupt supply chains and undermine the presence of UK companies in the EU market.

THE OPPORTUNITIES

Allowing adequate time for planning and implementation of all changes would ensure optimum use of industry resources.

Work to address the border issues in Northern Ireland

THE RISKS

The Republic is a significant export market for Northern Ireland, accounting for 15% of entire industry sales, with imports from the Republic also playing a key role. Any hard border would impact deeply embedded supply chain relationships would be undermined, resulting in a significant displacement of product onto the domestic UK market with a consequentially negative impact on producer prices and processors profitability.

THE OPPORTUNITIES

The creation of a frictionless and seamless border regime could provide a future template for trade relations with the rest of the EU after Brexit.

Ensure that companies across the UK have ongoing access to third countries based on existing EU FTAs, until the UK can negotiate alternatives

THE RISKS

The UK dairy industry could lose established positions in valuable exports.

THE OPPORTUNITIES

Maintaining pathways to market will enable the industry to realise growth opportunities from established positions whilst providing the scale of operation in exports to exploit market opportunities from FTAs negotiated by the UK.



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3. ANIMAL HEALTH AND WELFARE

The UK dairy industry takes the health and welfare of dairy cows and related stock extremely seriously. The industry has a variety of initiatives underway to maintain and improve standards, overseen by an overarching strategy. Measurable improvements are being achieved at farm level and the industry can be confident that tackling animal health and welfare is one of its defining characteristics.

FARM ASSURANCE

Dairy farmers have a vested interest in maintaining the health and welfare of their dairy cows. There are powerful moral as well as economic reasons for keeping livestock healthy and productive for as long as possible.

In order to ensure dairy farmers meet benchmark standards of animal welfare and product quality, the industry supports The Red Tractor Farm Assurance Dairy Scheme (www.redtractor.org.uk). The scheme is part of Assured Food Standards (AFS), and is overseen by a board nominated by Dairy UK, the farming unions, AHDB, British Cattle Veterinary Association and the British Retail Consortium.

These farm assurance standards set a high bar for animal welfare so that consumers can be confident that their milk and dairy products are produced responsibly and respectfully. Under the scheme, farms are inspected every 18 months and the quality of the assessor is further verified by a compliance and integrity programme consisting of regular training and witnessed assessments.

At the end of the October 2015 to September 2016 year, the scheme covered 64 milk purchasers, 11,158 milk producers and the 14 billion litres of milk that they produce.

The scheme is being continuously developed with standards being subject to a regular process of review. From October 2013, assessors were required to score a sample of cattle against welfare indicators and discuss the results with farmers. From October 2017 amongst a range of changes, industry standards on medicines and veterinary engagement will be tightened. Medicine records must provide an annual collation of total antibiotic used for the unit, either by a vet from prescription data or completed by a farmer from medicine records, and an annual review of antibiotics used must be undertaken by a vet.

Under the EU Hygiene Regulation, the FSA is required to inspect dairy farms. Because of the robustness of the Red Tractor Scheme, dairy farms in England, Wales and Northern Ireland

have had the frequency of inspection by the FSA reduced from once a year to once every 10 years, in recognition of the lower level of risk associated with farms complying with the farm assurance scheme.

The industry also runs an initiative to manage and reduce the incidence of Johne's Disease in the dairy herd. The initiative is overseen by the Action Group on Johne's which has developed the National Johne's Management Plan. The plan requires farmers to implement one of the six control strategies developed by the Action Group and for compliance to be certified externally by vets. The initiative has been successful in raising farmer awareness and engagement with the issue.

Other significant initiatives include the programme to eliminate BVD (Bovine Viral Diarrhoea) and improvements in cow genetics.

The future development of welfare standards for dairy cows is set out in the industry's Dairy Cow Welfare Strategy which has been jointly

developed by the National Farmers' Union in conjunction with AHDB, the Royal Association of British Dairy Farmers, British Veterinary Association, British Cattle Veterinary Association and Dairy UK.

In combination, this range of initiatives is producing improvements in dairy cow longevity and cow fertility. Industry progress is recorded as the regular reports compiled by CHAWG with the latest being published in November 2016.



DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Recognise the achievements of the industry in driving forward improvements in animal health and welfare;
- Give due acknowledgement to Red Tractor standards in public procurement decisions;
- Support the sector's initiatives to tackle specific animal disease issues.



4. DAIRY FARMING

UK dairy farmers are professional, dedicated and efficient. UK dairy farming is internationally competitive with a considerable latent capacity for growth. This puts the industry in a strong position to exploit growing export opportunities and to make a major contribution to global food security. Dairy farming is constantly restructuring and relocating to optimise efficiency. In response to the globalised price environment, the industry has developed unique contractual relationships. The strength of UK dairy farming is the UK dairy industry’s foundation for the future.

DAIRY FARMER NUMBERS

The process of farm restructuring is continuous in the dairy sector. Historically this generates an annual rate of decline in farm numbers of around 4%, but with some variation depending on price levels. In 2012 there were a significant number of new entrants into the industry which reduced the rate of exit.

been falling, but an offsetting rise in average milk yield per cow has eliminated any impact on production. The average farm size has also been rising.

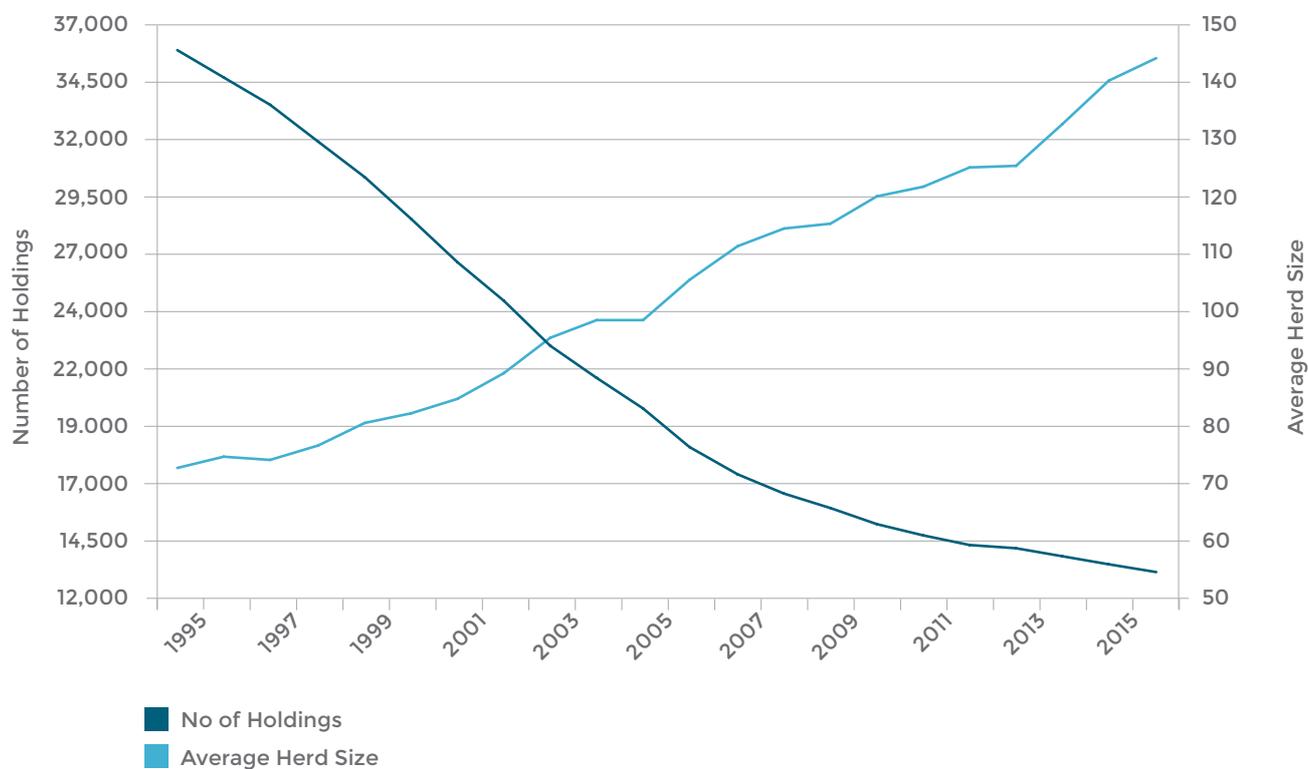
The trend towards fewer, larger farms is almost universal throughout the developed world, but the rate of exit in the UK (-3.2%) is low compared to the EU27 average (-6.5%).

The number of animals in the national herd has

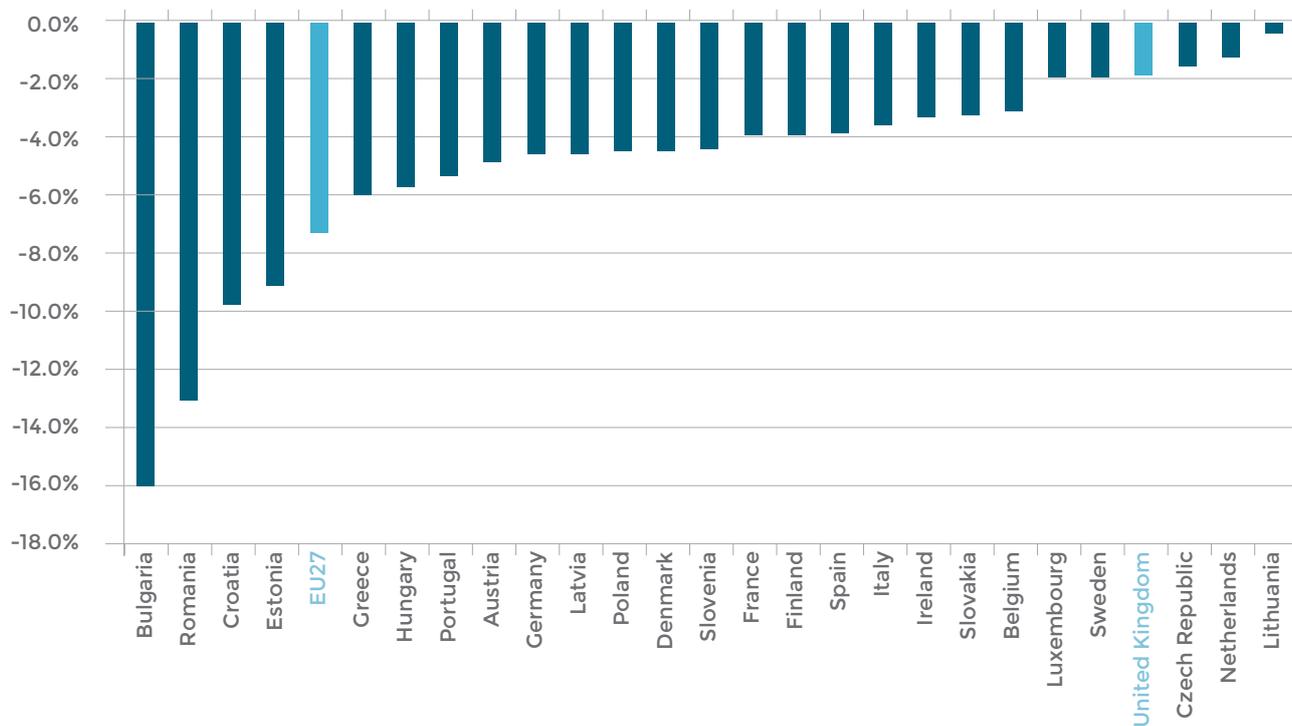
Table 3 - Average Herd Size in the UK - as at June

	Holdings	Dairy Herd (000 Head)	Average Herd Size
2010	15,300	1,830	120
2011	14,793	1,796	121
2012	14,413	1,796	125
2013	14,276	1,782	125
2014	13,922	1,841	132
2015	13,570	1,895	140
2016	13,227	1,897	143

Graph 2 - National Herd Size and Number of Holdings (new series from 2006)



Graph 3 - % Decline in EU Producer Numbers (2013/14 to 2014/15)

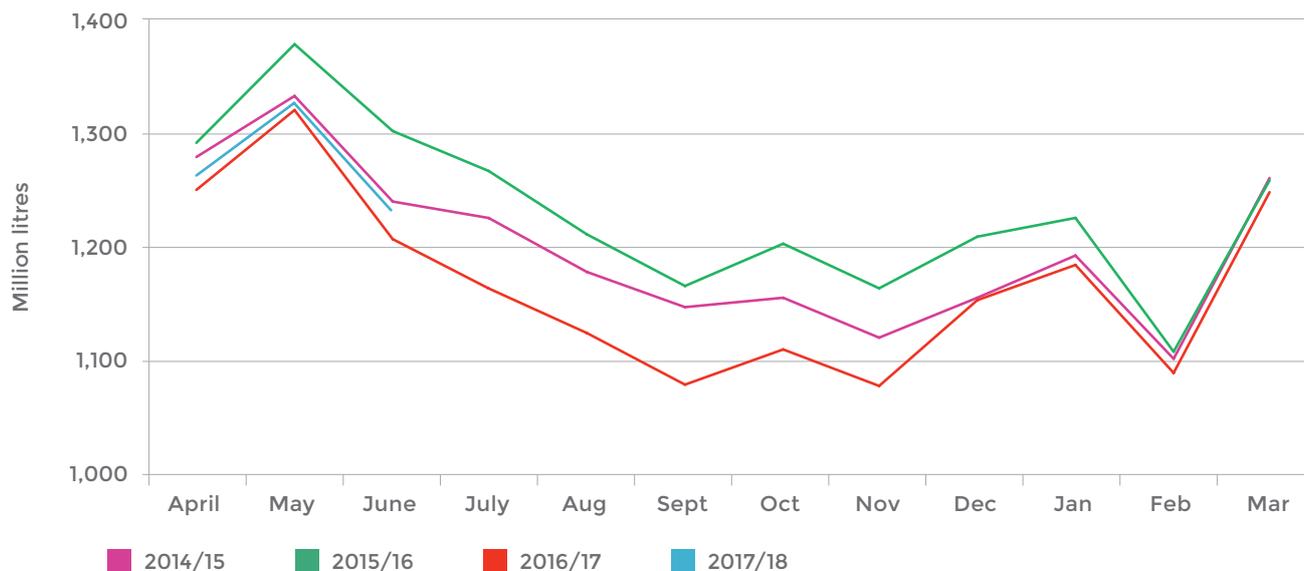


MILK OUTPUT

Milk production in the UK responds rapidly to market circumstance. Milk production reached historically high levels in March 2015 due to

high prices but fell quickly when the market situation reversed. It has since started to recover as prices have risen.

Graph 4 - UK Wholesale Milk Deliveries



Source: Rural Payments Agency

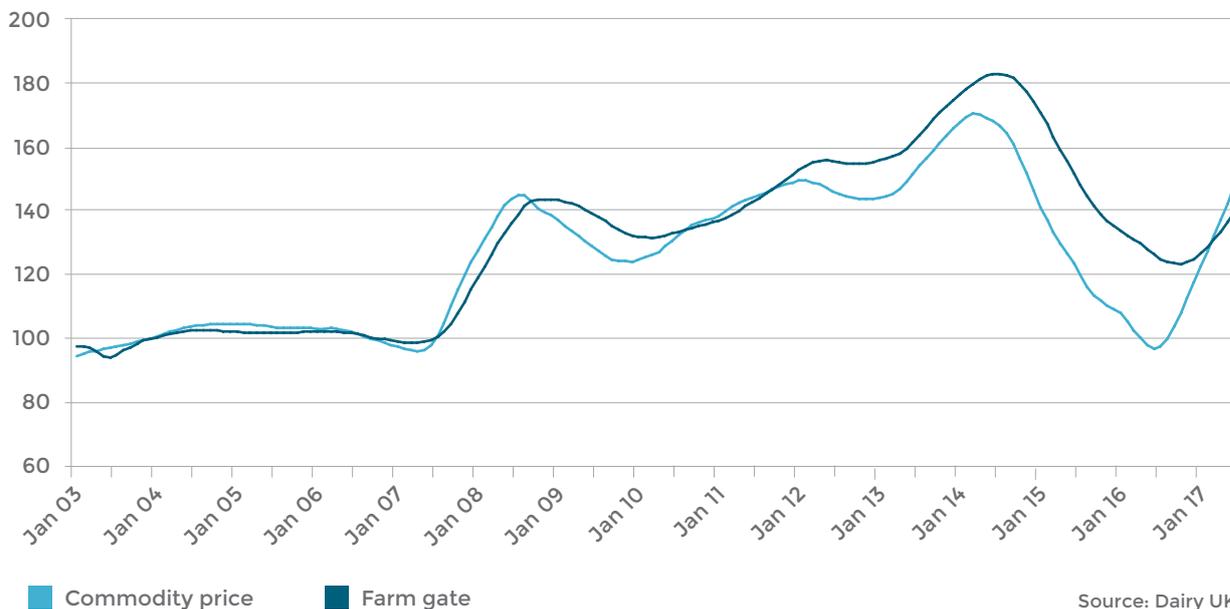
MILK PRICES

The price of raw milk in the UK is driven by the world market for dairy products. The deregulation of the raw milk market means that prices are set by commercial negotiations between individuals, or groups of farmers, and milk buyers in a free and competitive market. This has given internationally traded commodities a prominent role in the determination of milk price trends, along with movements in the value of sterling. Commodity products such as butter, powder, and mild Cheddar set the underlying trend in the farm gate price of raw milk in the UK.

When commodity prices fall, operators selling raw milk for commodities have an incentive to offer this milk into higher returning markets, so the price of raw milk used in other products then falls to remain competitive. Likewise, when commodity prices rise, milk buyers have to raise the premiums they pay over commodity milk in order to secure their supply of milk.

The inherent volatility of global milk supply means that commodity prices are cyclical. Short-term price cycles can mask the long term price trends upon which the industry needs to base investment decisions.

Graph 5 - Farm Gate Price Versus Commodity Price (butter/SMP/mild Cheddar) - Moving annual mean



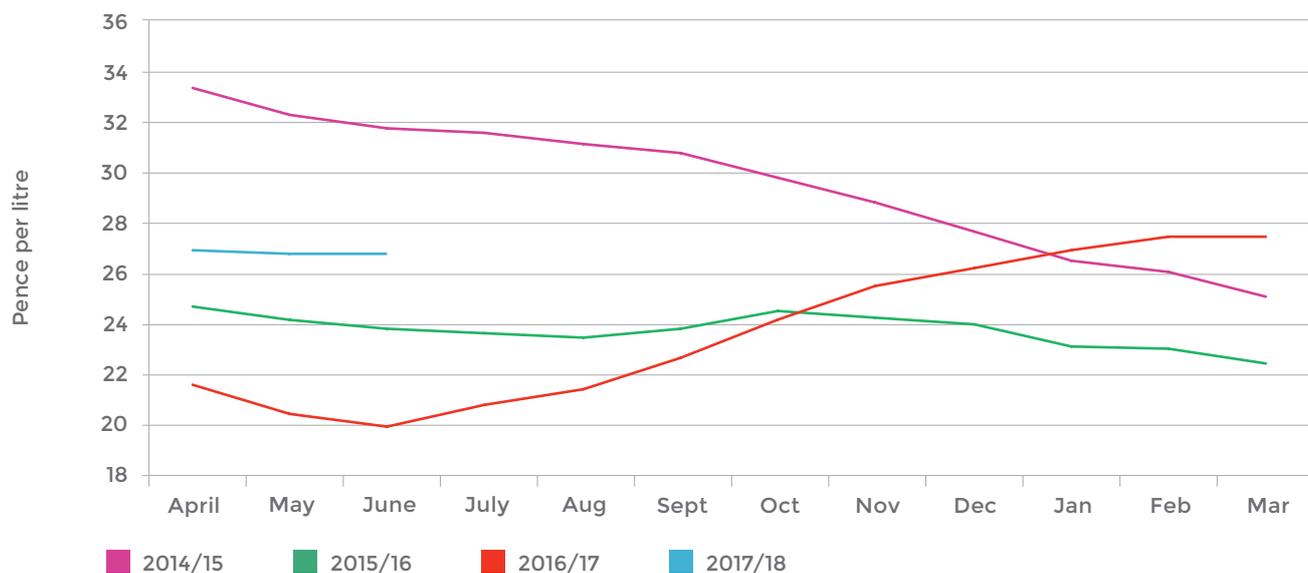
Source: Dairy UK

CURRENT MILK PRICES

Currently prices, as of August 2017 are on an upward trend. Prices weakened in 2014 due to rising global milk supplies, particularly in Europe following the abolition of quotas, a slow-down in purchasing by China due to the build-up of stocks in that country and the

import ban on EU products imposed by Russia. This generated a prolonged price slump. However markets subsequently re-balanced through the curtailment of production growth and the underlying upward trend in global demand.

Graph 5 - UK Farm Gate Price



Source: Defra

CONTRACTUAL ARRANGEMENTS IN THE DAIRY INDUSTRY

Contractual relationships in the UK dairy industry are highly developed and, in many ways, unique across the world.

INTEGRATED SUPPLY ARRANGEMENTS

Over the past few years, several major retailers have put in place ‘integrated supply arrangements’. In many respects these arrangements are unique to the British dairy industry.

Farmers generally receive a higher price under these arrangements, which vary from retailer to retailer (see table below). As such, farmers on supermarket contracts are partially insulated from the price trends in commodity markets.

Under these systems, a retailer obtains their supply of liquid milk exclusively from a specific group of farmers. The raw milk from these farms is processed under segregated arrangements and delivered to the retailer as liquid drinking milk.

In exchange for participating in integrated supply arrangements, farmers may be required to deliver different welfare requirements, meet particular environmental standards set by the retailer, or share detailed information on farm performance data.

Table 4 – Integrated Supply Chain Relationships for the Liquid Market

Retailer	No of Farmers	Pricing System
Marks & Spencer	40	Formula taking account of costs and market returns
Waitrose	60	Negotiation taking account of capital investment requirements
Asda	250	Farmers engage as Asda pathfinder group to improve on farm efficiency
Sainsbury's	290	Quarterly review of key farm input costs
Co-op	200+	Market related prices reviewed quarterly
Tesco	800	Formula taking account of costs
Morrisons	300	Compensation to cover costs incurred to achieve standards over and above Red Tractor
Booths	-	Guaranteed ‘Fair Milk’ price

FINANCIAL POSITION

On average, UK dairy farmers are profitable even in challenging market situations but with a high degree of variation between years. The variation in profitability creates enormous challenges for dairy farmers not least in deciding

long term investment decisions. Profitability peaked in the two years to February 2014 and 2015 but subsequently fell back as milk prices fell. The situation for the year to February 2018 is expected to improve considerably.

Table 5 - Average Farm Business Income per Dairy Farm (£)

	2011/12	2013/13	2013/14	2014/15	2015/16	2016/17(prov)
England	86,500	52,500	88,000*	84,000*	44,000*	22,500*
Wales	68,000	45,000	77,000*	70,000*	33,000*	24,500*
Scotland	82,000	45,500	78,000	69,000	2,000*	n.a.
N. Ireland	58,000	28,000	61,500*	45,500*	12,000*	14,000*

*New series | Source: Defra

EFFICIENCY

The diversity of farming systems and the range of efficiency being achieved is highlighted by the evidence collected by AHDB Dairy from 328 farm accounts with year ends falling between December 2015 and June 2016. The key findings of this analysis are;

- Full investment costs of production were 20% lower in the top quartile compared with the bottom quartile of GB dairy farms;
- The top quartile of GB producers achieved a positive net margin of 4ppl in 2015/16. In contrast, the bottom quartile made a loss after all costs of 7.6ppl, a range of over 11ppl, similar to 2014/15.

This shows the significant latent potential for production increases available to the industry through improving efficiency.

The key findings from the more extensive Milkbench+ report in 2013 was that;

- The key determinant of profit is total cost of production;
- Average yield per cow is not the main driver of profit;
- The right balance between input use and milk output (herd size and average yield) is essential for high net margin;
- Milk can be produced efficiently from any of the systems identified and at almost any scale of production.

Table 6 - Analysis by Production System

	Full investment net margin: Pence Per Litre
Top 5%	7.3
Top 25%	4.0
Bottom 25%	-7.6
Bottom 5%	-12.0

The key conclusions drawn by DairyCo (now AHDB Dairy) were;

- There is no silver bullet which ensures profitability; cost control through effective management is the key;
- Achieving the most cost-effective performance levels in terms of milk yield and feed use and in the resulting total costs of production, requires regular recording, monitoring of performance and effective use of the resulting data;
- There is no ideal herd replacement rate, understanding the reasons for replacements are more important than the number. Realistic targets should be set as a part of strategic management of individual dairy enterprises;
- It is important to maintain a level of fixed costs appropriate to the level of output. Investment should be aimed at improving production efficiency and decreasing unit cost of production.

RESTRUCTURING AND EFFICIENCY

Once dairy farmers have maximised their efficiency for any given scale of production, they need the opportunity to expand their businesses to continue to improve efficiency through achieving economies of scale by spreading fixed costs over a larger scale of production. This means that there is a strong correlation between farm size and efficiency.

Table 7 - Analysis of Efficiency by Herd Size

Herd size (cows)	<80	80-130	>130
Lowland Herds (£ per cow)			
Total Dairy Output	1,541	1,734	1,973
Total Variable Costs	777	823	950
Total Gross Margin	765	911	1,023

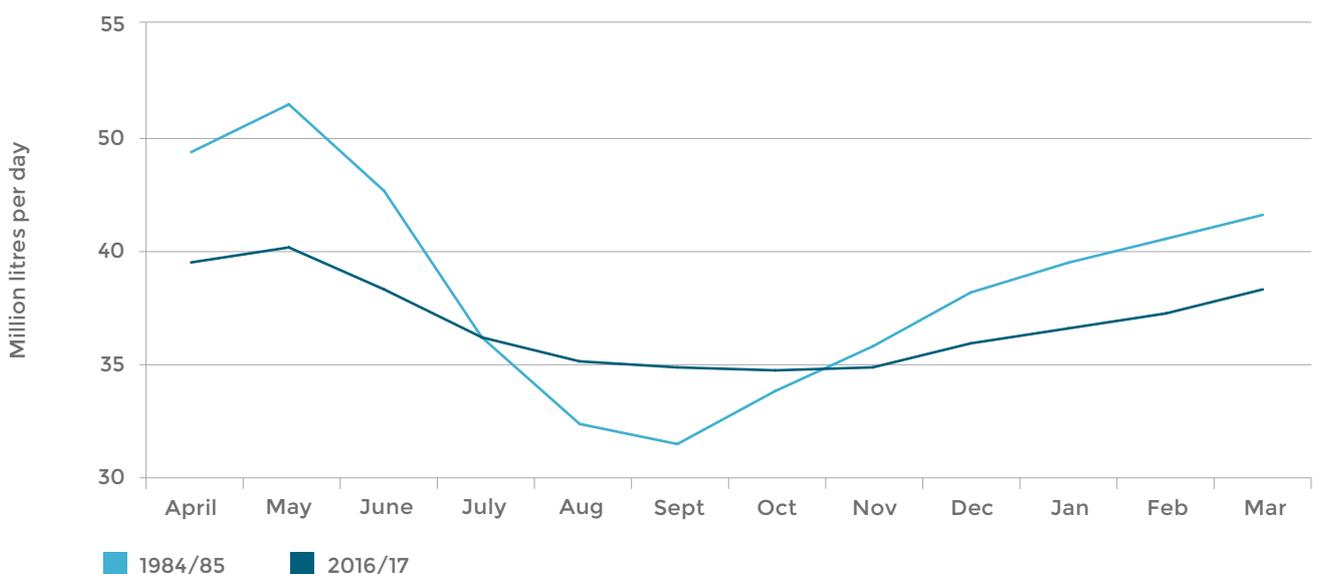
Source: University of Nottingham
 "Farm Business Survey 2015/2016- Dairy Farming in England"

SEASONALITY OF MILK PRODUCTION

Milk production follows a seasonal trend, with a traditional peak production in May after the calving season and a trough in October/November as grass becomes poorer. Weather conditions can have a big impact, and the level of butterfat and protein in milk also varies seasonally.

The seasonality of milk production has significantly improved since the 1980s, which reflects a sustained effort by the industry to incentivise a flatter profile of production. This reflects the importance of maintaining a continuous supply of milk for the UK fresh product markets, particularly liquid milk, which accounts for half of milk utilisation.

Graph 7 - Seasonality of milk production



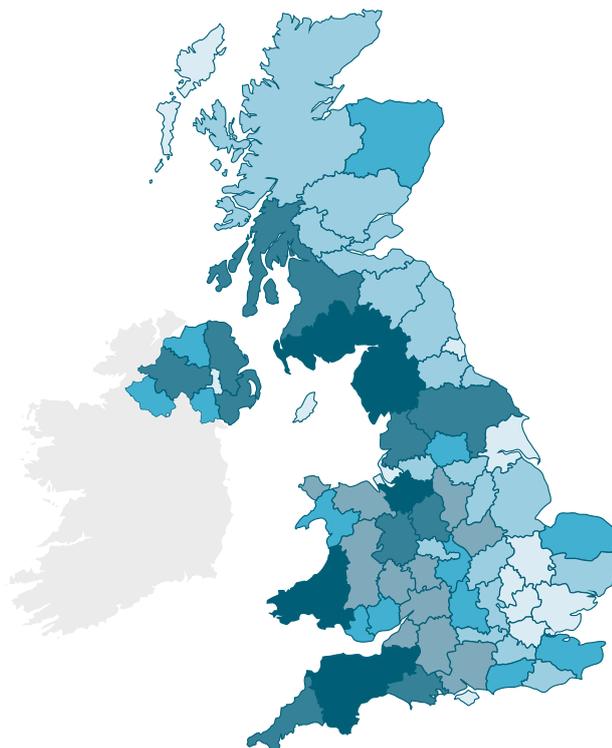
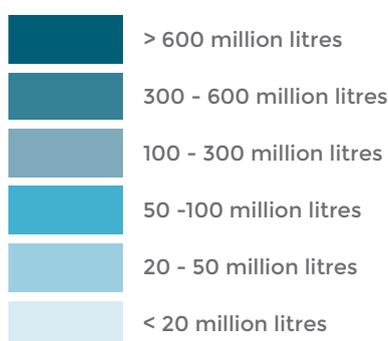
Source: Dairy UK

GEOGRAPHICAL DISTRIBUTION OF MILK PRODUCTION

Production is becoming increasingly concentrated in the southwest and northwest of England, mainly Devon, Somerset, Cheshire and Cumbria. There is also a significant

movement in volume from England to Wales, Scotland and Northern Ireland, indicating increasing production in these countries. This process can be expected to continue.

Figure 1 - Map of UK Wholesale Deliveries March 2014



DAIRY IN DEVELOPING FUTURE AGRICULTURAL POLICY, DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Ensure that if the financial resources allocated to direct payments are reduced, these reductions be compensated by resources being moved to schemes that improve the competitiveness of the sector, in order to offset the loss of direct payments;
- Recognise the necessity for continued farm restructuring;
- Recognise the range and diversity of farming systems and not give undue preference to any particular management system;
- Place protecting and enhancing the competitiveness of the dairy sector at the core of all aspects of agricultural policy;
- To work collaboratively to develop policy instruments which help to mitigate the effects of price volatility on farm incomes;
- Ensure that realistic and comprehensive assessments of income forgone should remain the basis for calculating aid for the supply of public goods;
- Seek to minimise competitive distortions that could result from differences in the agricultural policies of the countries of the UK;
- Ensure appropriate transition periods if the current range and balance of agricultural policy instruments is to be radically altered;
- Recognise the growing challenge of ensuring an adequate supply of trained labour to the dairy farming sector.



5. MILK COLLECTION

The UK milk collection industry is efficient, flexible and dynamic and committed to operating to the high professional standards demanded by the industry's assurance scheme for milk haulage.

Milk is collected from farms by milk hauliers using a fleet of approximately 1,300 vehicles driven by over 2,000 drivers.

Milk collection vehicles are typically operated by hauliers contracted by milk purchasers, but around 15% of the vehicle fleet is owned and operated directly by milk purchasers.

Over 90% of the milk haulage capacity in the UK is covered by the Dairy Transport Assurance Scheme (DTAS), the industry's assurance scheme for milk transport. The scheme provides assurance to milk purchasers that the transport of raw milk and milk fractions meets food safety requirements, recognised industry good practice and specific customer needs.

The scheme is based on annual inspections of the milk haulage depots operated by scheme members and the assessment is conducted against a range of standards covering fleet and equipment, milk quality, hygiene and security, out-based reload sites, personnel, training and general management and further checks are carried out by a system of random audits.

All members must have a documented Hazard Analysis and Critical Control Point (HACCP) system in place that fully covers all aspects of milk collection and delivery.

The Scheme's standards are reviewed annually and the Scheme is administered by Dairy UK and overseen by a Management Committee drawn from major milk purchasers and milk hauliers in the UK.

Alongside the Red Tractor Assurance Dairy Scheme for on farm production and the British Retail Consortium standards for food processing, the DTAS scheme completes the proposition behind the Red Tractor logo of farm to fork assurance of the dairy supply chain. Confidence in the robustness of the scheme is demonstrated by the fact that from April 2015 it has been a requirement that all dairy products carrying the Red Tractor logo have to use milk hauled by a DTAS approved haulier.

Details of the scheme, along with all relevant documentation, can be found at www.dairytransport.co.uk.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Liaise closely with DTAS on any emergencies affecting the national transport infrastructure that affects the collection of raw milk





6. MILK PROCESSING

Milk purchasing and processing in the UK is led by well-established, highly-invested, dynamic operations. UK processors have a proven track record of meeting the demands of major domestic and international retailers and food service companies.

A significant international component in the ownership of processing capacity gives the industry a strong global dimension, and farm ownership of processing capacity is significant. The industry boasts particular strength in the efficient processing and distribution of fresh products, and the variety and diversity of its cheese sector.

INDUSTRY ORGANISATIONS

Alphabetically the six major organisations leading the UK dairy industry are;

- Arla Foods UK, a European farmer owned co-op (www.arlafoods.co.uk);
- Dairy Crest, a public UK-based PLC (www.dairycrest.co.uk);
- First Milk, a UK-based dairy farming co-op (www.firstmilk.co.uk);
- Glanbia Cheese, a joint venture between Glanbia plc and Leprino Foods Company (www.glanbiacheese.co.uk/);
- Müller UK & Ireland, a German-based privately owned dairy company (www.muller.co.uk);
- Dale Farm Co-op, a UK-based dairy co-op (www.dalefarm.co.uk).

With a relatively low level of industry concentration compared to other European sectors further opportunities for industry rationalisation and merger still exist.

INTERNATIONAL INVESTMENT

Many UK milk processors are, or are owned by, internationally-based companies. In addition to Arla Foods UK and Müller UK & Ireland, other companies in the UK with a significant international dimension include;

- Glanbia Cheese, a joint venture between Glanbia plc of Ireland and Leprino Foods of USA (www.glanbiacheese.co.uk);
- Caledonian Cheese Company, who are owned by Lactalis of France (www.grouplactalis.co.uk).

By providing additional access to capital and foreign markets this international dimension complements the strength of UK based operators.

THE SUPPLY CHAIN

The overwhelming majority of dairy farmers are contracted to sell their milk to either private dairy companies or to co-operatives. Only a small fraction is marketed directly to consumers by farmers through on farm processing facilities.

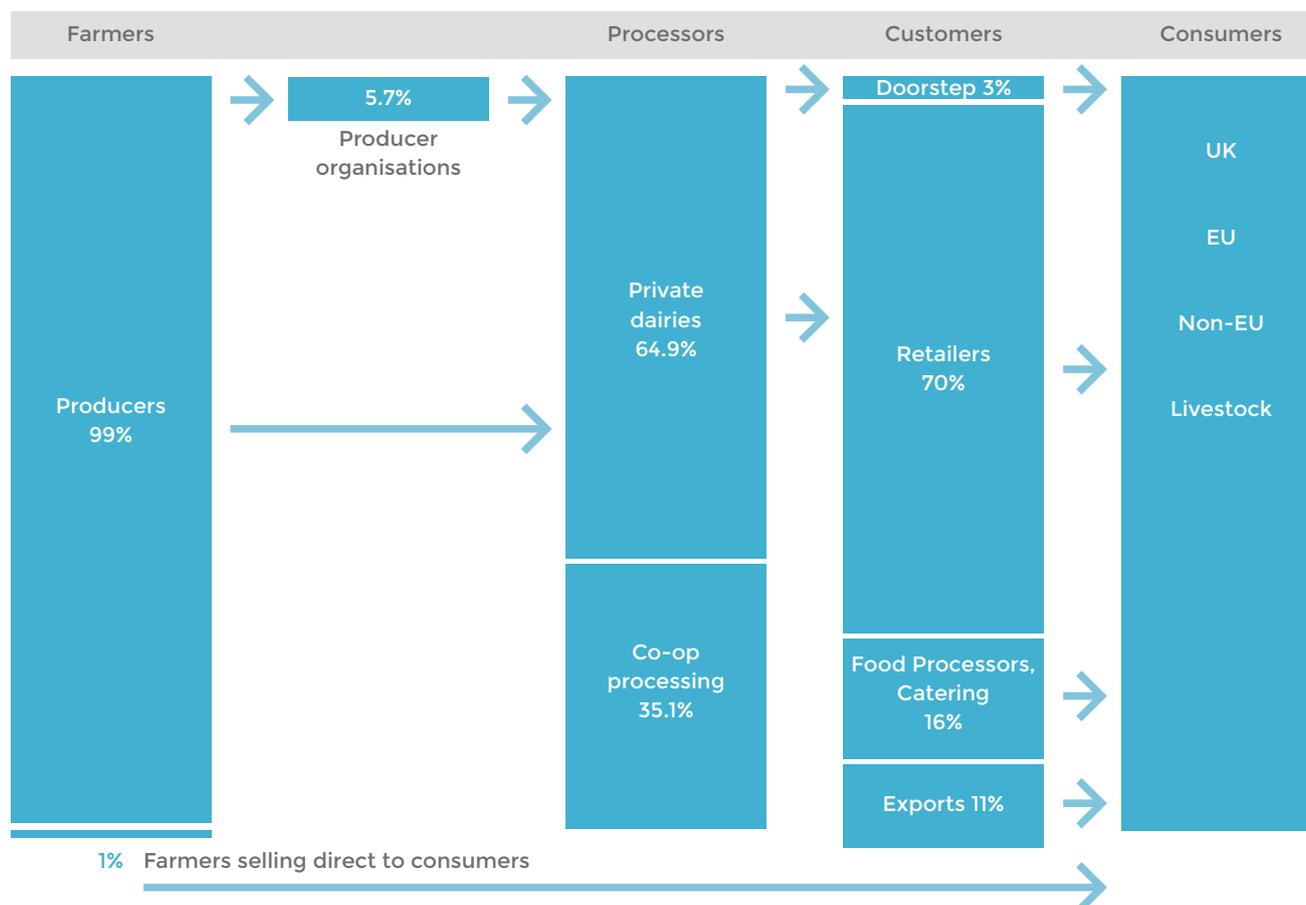
Similarly processors only sell a small portion of their output direct to consumers through the doorstep delivery service. The majority is sold to intermediary organisations such as retailers who then sell the product to consumers.

A recent innovation in the supply chain is the advent of Producer Organisations. These

organisations are permitted under EU law to represent dairy farmers in price negotiations with private dairy companies. The legal foundation for Producer Organisations is provided by the EU 'Dairy Package of 2012'.

So far Dairy Crest Direct is the sole example of a PO in the UK but other organisations are expected to emerge. In addition to negotiating prices, POs can provide the basis for a much closer working relationship between farmers and processors and can potentially address a whole range of issues from production standards to benchmarking.

Figure 2. Industry Supply Chain

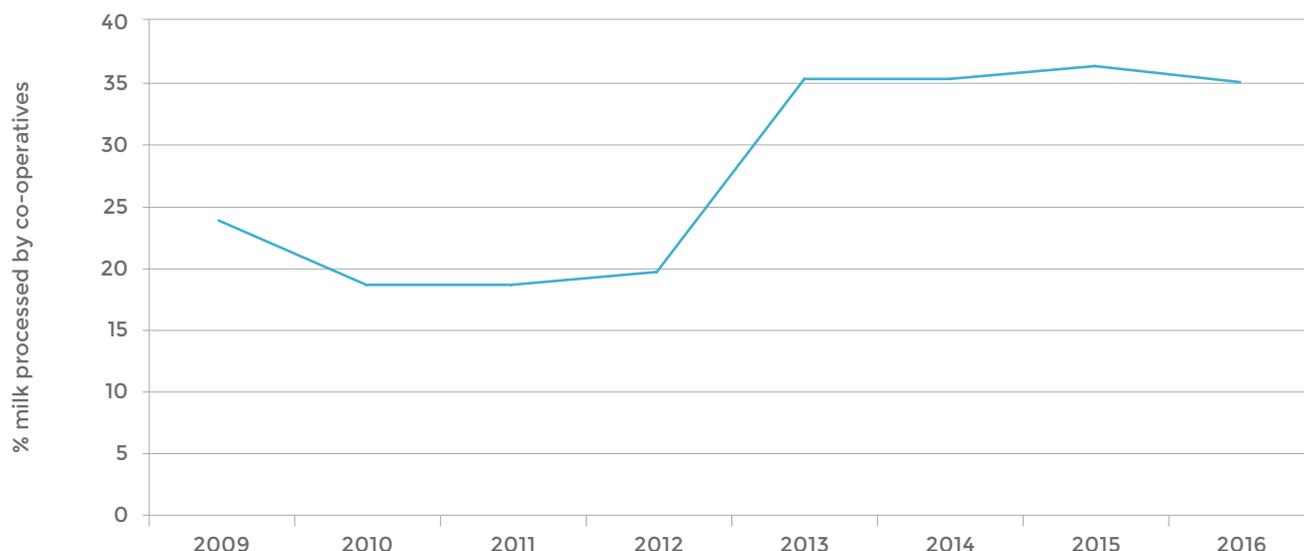


FARMER OWNERSHIP OF PROCESSING CAPACITY

Farmer ownership of milk processing capacity is significant. It is estimated that producer co-ops account for nearly 35% of the milk processed in the UK.

This took a considerable step forward with the merger of Arla Foods and Milk Link in October 2012 and the conversion of the majority of Arla’s supplying farmers into full co-op membership on 1 January 2014.

Graph 8 - Evolution of Co-op Processing



Source: : Industry Figures and Dairy UK Estimates

STRUCTURE OF MILK PROCESSING SITES

The industry has invested heavily in extremely large, efficient processing facilities, particularly in the liquid milk sector.

In the cheese sector facilities over 10,000 tonnes per annum account for over half of processing capacity.

In the United Kingdom, dairy facilities which process over 100 million litres of milk account for over 90% of the volume of milk processed.

Table 8. Size Distribution of Dairy Enterprises by Volume of Annual Milk Collection, United Kingdom 2015*

Size band (tonnes per year)	Number of enterprises		Volume collected	
	Number	% of Total	Thousand tonnes	% of total
Under 5,000	318	87	130	1
5,001 - 20,000	12	3	157	1
20,001 - 50,000	8	2	256	2
50,001 - 100,000	9	2	675	5
100,001 - 300,000	11	3	1,728	13
Over 300,000	9	2	10,851	79
Total	367	100	13,797	100

*Some smaller companies do not participate in the survey

Source: Defra

These size distributions tables are produced every three years under Council Directive 96/16/EC

Table 9. Size Distribution of Dairy Companies by Annual Production of Drinking Milk, United Kingdom 2015*

Size band (tonnes per year)	Number of enterprises		Volume of milk production	
	Number	% of Total	Thousand tonnes	% of total
1,000 and under	209	86	3	1
1,001 - 10,000	15	6	2	1
10,001 - 30,000	5	2	19	6
30,001 - 100,000	6	3	109	37
Over 100,000	7	3	162	55
Total	242	100	295	100

*Some smaller companies do not participate in the survey

Source: Defra

These size distributions tables are produced every three years under Council Directive 96/16/EC

Table 10. Size Distribution of Dairy Companies by Annual Production of Cheese, United Kingdom 2015*

Size band (tonnes per year)	Number of enterprises		Volume of milk production	
	Number	% of Total	Thousand tonnes	% of total
100 and under	61	64	60	1
101 - 1,000	10	11	48	1
1,001 - 4,000	10	11	104	2
4,001 - 10,000	9	9	404	6
Over 10,000	5	5	5,874	91
Total	95	100	6,490	100

*Some smaller companies do not participate in the survey

Source: Defra

These size distributions tables are produced every three years under Council Directive 96/16/EC

INVESTMENT BY DAIRY PROCESSORS

Dairy processors, both cooperative and private, have undertaken a high level of investment in the UK. In the time period for which data is available annual capital investment by the top five dairy organisations in the UK exceeded £100m per annum from 2006 to 2013.

Table 11. Capital Investment by the Top Five UK Dairy Businesses

Year to March	Capital investment (£m)
2006	104.5
2007	119.1
2008	139.2
2009	131.2
2010	126.9
2011	133.6
2012	209.9
2013	265.9

Source: Dairy UK

The UK dairy sector continues to invest heavily in the future of the industry and some of the recent significant investment projects have included;

- Arla Foods UK is investing £37.5m in its UK sites and logistics, including £5m to develop capacity at the Taw Valley Creamery, £5m at the Stourton dairy (including a new packing facility), £3m at Westbury and £3.5m at Aylesbury to allow the site to begin production of fat-free skimmed milk;
- Müller Milk & Ingredients is investing £60m to upgrade its network of fresh milk and ingredients dairies in Britain, including a new filling line at Foston, enhancement to facilities at Droitwich and Bridgwater and the creation of a centre of excellence for flavoured milk and fresh cream at Severnside.



PRODUCTION OF PRODUCT

Almost half of the milk purchased by UK dairy companies and co-operatives is processed into liquid milk and 29% is used for cheese production. After these the key products are milk powders (7%) then cream, butter and condensed milk.

Most UK dairy produce is ultimately intended for human consumption, and over 70% is produced in consumer packs for sale. Of this the majority are fresh dairy products, either liquid milk or yogurt, that are distributed through a chilled distribution chain. Ensuring the rapid, timely and safe distribution of perishable food products throughout the UK, whilst simultaneously responding to change in consumption trends, is one of the core strengths of the UK dairy industry.

Table 12. Average 2015 dairy consumption per person per week

(Million litres)	2015	2016	% change 2015-16
Availability of raw milk	14,865	14,366	-3.4
Imports	158	82	-48.2
Total available	15,023	14,447	-3.8
for liquid consumption	6,727	6,627	-1.5
for manufacture	7,464	6,887	-7.7
Butter	297	278	-6.4
Cheese	4,066	4,143	+1.9
Cream	319	289	-9.3
Condensed Milk	249	247	-0.7
Milk Powders	1,629	1,040	-36.2
Yogurt	298	318	+6.6
Other	605	572	-5.6
Wastage and stock change	156	208	+33.6
Exports	677	725	+7.2

Source: Defra

INDUSTRY CUSTOMERS

The UK dairy industry has to meet the needs of a range of different customer types, the most important of which are retailers. Other major customer segments

include wholesale distributors, catering outlets, institutional customers (hospitals, schools, prisons), food processors, traders and export customers.

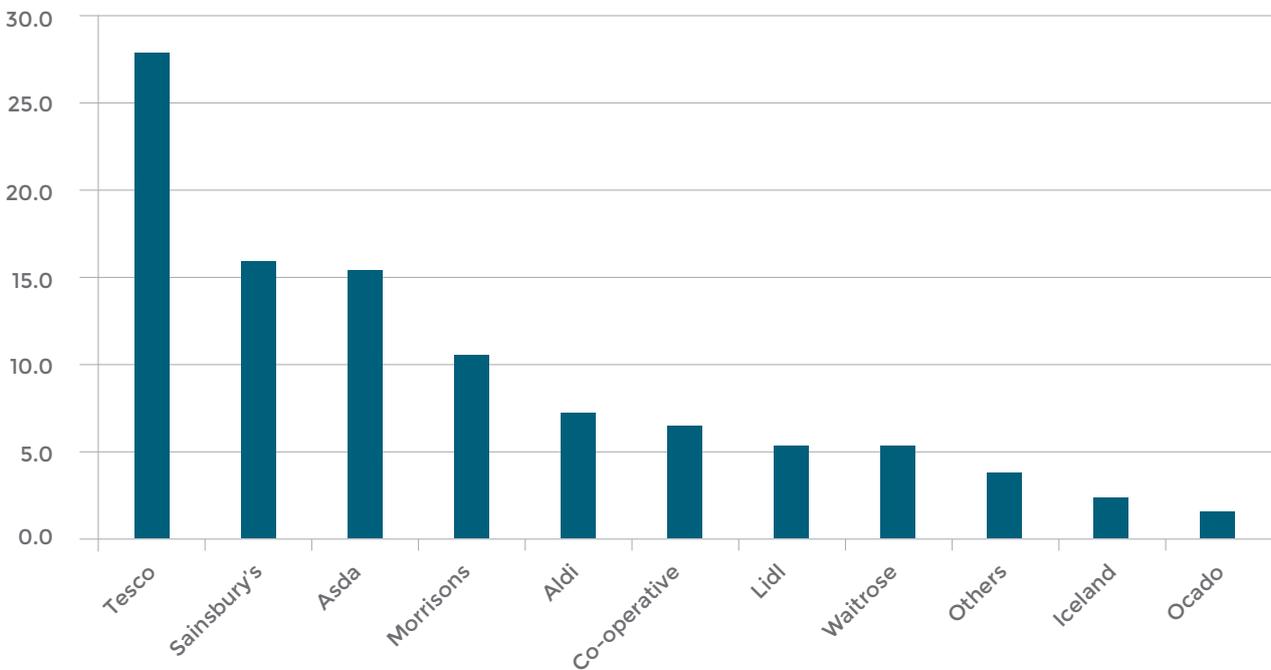
RETAILERS

The grocery market is dominated by four major retailers – Tesco, Sainsbury’s, Asda and Morrisons, accounting for 69% of all sales in Great Britain in the 12 weeks ending 13 August 2017. Their combined share is diminishing, however, as the discounters continue to increase their presence with Aldi achieving 7.0% of sales and Lidl moving higher to a new record high of 5.2% to become the UK’s seventh largest grocer.

The growth of online shopping is also having an effect as Ocado has achieved a 1.4% market share of the grocery sector.

The quality and professionalism of the retailers operating in the UK means that the UK dairy industry successfully addresses some of the most challenging and demanding commercial relationships in the global food industry.

Graph 9 – Share of Grocery Market (% share 12 weeks ending 13 August 2017)



Source: Kantar Worldpanel

DOORSTEP SALES

Doorstep delivery, which stands at less than 3% of the liquid market, still remains a favourite with millions of consumers. The industry sells around 720,000 pints of milk per day direct to the consumer in returnable glass bottles. The doorstep sector is being driven by an increasing demand for convenience

amongst consumers and a significant degree of innovation in the type of services and products made available to the consumer.

Dairy UK helps to market the doorstep delivery service to consumers through the Find Me a Milkman website at www.findmeamilkman.net.

OUT OF HOME CONSUMPTION

The sale of food and drink for consumption outside the home slowed during the recession but emerging fast food concepts, coffee shops and the proliferation of the street food movement are some of the contributory

factors behind an estimated 2.1% growth in value for the UK's eating out sector in 2016, according to IGD. The prospects for the out of home sector remain good, with the market forecast to grow at 0.9% annually to 2021.

INGREDIENTS SECTOR

This covers the use of milk products as an ingredient in food processing. This can range from biscuits, cakes and confectionery to ready-made meals. It is an enormously diverse

sector and the fragmented nature of this market means that little data is available. This sector continues to grow as consumers eat more processed and prepared foods.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Recognise that dairy processing in the UK is dynamic and innovative, providing UK and global consumers with high quality, nutritious, safe and sustainable dairy foods and ingredients;
- Enhance the remit of the Grocery Code Adjudicator to cover smaller retailers and the food service sector;
- To work with the industry to ensure that competition law can support the dynamic and entrepreneurial nature of the UK dairy sector, giving it the flexibility to thrive.





7

- **FOOD SAFETY, QUALITY AND INTEGRITY**

Maintaining consumer confidence and trust in the healthiness and wholesomeness of dairy products is at the heart of all industry activity. Strict rules and regulations, as well as comprehensive due diligence, ensures that the British dairy industry has measures in place to guarantee that the products it sells to the public are free from harmful contaminants and that they are of the highest quality.

In fact, the British dairy industry has put in place one of the most stringent safety and quality systems in Europe. This is a result of the importance that the sector places on the excellence of dairy products sold in the UK and abroad.

ANTIBIOTICS

Given the challenge posed by antimicrobial resistance, the British dairy industry is particularly focused on ensuring that antibiotic exposure through the dairy supply chain is kept to a minimum.

There are many approaches to the control of antibiotic residues in milk. The primary control is on farms and begins with the correct prescription and administration of antibiotics and the careful adherence to withdrawal periods. In short, milk producers must ensure that milk from animals under treatment or in the withdrawal period does not enter the food chain.

This control at farm level is complemented by the testing of milk for antibiotics undertaken by food businesses at various points in the supply chain. This includes testing of tankers arriving at the dairy processing centres, as well as a representative number of samples from farm bulk tanks.

The Veterinary Medicines Directorate (VMD) - the UK Government agency responsible for monitoring foods for veterinary medicine residues - has found that 99.9% of milk samples have been free of antibiotic residues

over the past three years. This is a testament to the effectiveness of the industry's internal safety checks.

Never complacent, the British dairy industry continues to work hard to minimise the risk of antibiotic residues in milk and does so through a number of cross-sectoral working groups. Ongoing activities to achieve this include;

- Delivering training, education and information to farmers and vets;
- Strengthening testing practices, including liaising with diagnostic companies to optimise individual test kits.

For example, MilkSure is a training programme developed by Dairy UK and the British Cattle Veterinary Association which was launched in 2016. This course is aimed at British dairy farmers and their employees and is provided by vets for their own clients, using a workbook and other learning materials. The course covers all the technical and practical aspects necessary to safeguard residue free milk, and a Certificate of Achievement is awarded to those who complete the training and pass an online test.

ANTIMICROBIAL RESISTANCE

Parallel to minimising the risk of medicines residues in milk, to proactively address the issue of Antimicrobial Resistance in April 2017 the industry formed the Dairy Antimicrobial Stewardship Group. The group has the remit to create an overarching strategy for achieving the targets for the reduced use of antibiotics being developed by the RUMA (Responsible Use of Medicines in Agriculture Alliance) Targets Task Force. The strategy will identify the responsibilities and actions required from organisations participating in the group and other actors within the dairy industry supply chain to reduce, refine and replace antibiotics use in the dairy herd.

THE DUE DILIGENCE SCHEME

A number of dairy processing companies participate in the Dairy UK Due Diligence Scheme, which regularly tests milk for a range of substances including heavy metals, mycotoxins, pesticides, veterinary medicines and biocides.

The Scheme is a great success amongst dairy companies, and provides them with an effective tool to satisfy themselves, as well as official inspectors and customers, that milk delivered to consumers is always safe and of the highest quality.

The Scheme is constantly reviewed in order to ensure that the scope of the testing is up-to-date and in line with relevant national and EU legislation, trade requirements and findings

from horizon scanning activities. If abnormal results are detected, further testing is carried out and corrective actions are implemented.

PROTECTED FOOD NAMES AND COMPOSITIONAL STANDARDS

In terms of food quality, the British dairy sector strives to achieve the highest possible standards for its consumers.

A number of British cheeses - such as West Country Farmhouse Cheddar, White and Blue Stilton, and Single Gloucester - are listed in the EU register of protected food names; this provides the public with the confidence that each one of these products is made in the same geographical area and respecting the same methods of production. Protected food names are important tools for protecting great British products from imitations.

In the UK, the nutritional composition of a wide variety of British cheeses and different types of creams are also currently protected through standards contained in the Food Labelling Regulations 1996. The announcement that these Regulations will be revoked in December 2018 has caused concern amongst the dairy sector as it is believed that, over time, the quality of the cheeses and creams could be affected. For this reason, the industry is working towards the development of an Industry Code of Practice, which will build on the existing standards in order to ensure the consumer continues to have access to high-quality dairy products in the UK.

FOOD INTEGRITY

Following the horsemeat scandal in 2013, the Elliot Review was published in 2014 to review the integrity of the UK food supply chain and to make recommendations to prevent food fraud and protect consumers.

The British dairy sector has already taken major steps towards restoring consumer confidence and protecting businesses from food crime, including product and ingredient testing, horizon scanning activities and information sharing with a wide range of stakeholders.

Dairy companies in the UK will continue to strengthen their engagement in this area to guarantee the integrity and authenticity of their products.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Work collaboratively with the industry to understand current practices for minimising antibiotic residues in milk, and help build on these in an effective and constructive way;
- Retain the compositional standards on cream and cheese post-2018, and work closely with the industry to identify the appropriate actions and next steps in achieving this.

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8. HEALTH & SAFETY AND TRAINING

The dairy sector is committed to the protection and development of its staff.

HEALTH & SAFETY

Health and Safety in the dairy processing industry continues to improve, with an accident rate in 2014/15 of 451/100,000 workers, which is less than half the figure of three years ago, but the industry's aim is to improve this further.

The top two accidents in the dairy processing industry remain slips & trips and manual handling which represent almost two thirds of the total. The dairy processing industry employs 23,000 people, who work for 400 companies, both a mixture of large employers and SME's, and apart from the health and safety considerations in processing they are also a large distributor of products, which in itself provides specific health and safety risks in retail, wholesale and doorstep delivery businesses.

Due to the improved safety of the dairy industry, it was moved by the Health and Safety Executive (HSE) in 2015 from its highest category A (proactive intervention /inspection) into category B (targeted proactive intervention on particular processes, occupational groups or duty holders).

The HSE provides support to the Dairy UK Occupational Health and Safety Committee (OHSC), which is making stringent efforts to further reduce accident rates by;

- Providing occupational health and safety leadership and direction to its members through engagement with large and small to medium sized organisations;

- Promoting competence across the industry through the application of good practice and HSE guidance, together with safe behaviours;
- Including the whole supply chain from farm collection to customer distribution, encompassing the work of third party contractors, employees and trade unions.
- Ensuring risks to health are well known and provide a focus to reduce occupational ill health in key risk areas;
- Identifying and promoting measures which can help dairy companies to improve their health and safety culture;
- Delivering good practice guides for the benefit of all members.

The current focus is on promotion of the Food and Drink Manufacture Forum's Common Strategy document 2016-2021 and encouraging members to sign up to the voluntary pledges to support the health and safety improvement objectives outlined within it. These include;

- Reducing the HSE RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013) reportable ill-health and injury rate for the food and drink manufacturing sector by 10% year-on-year;
- Effective management of Musculoskeletal Disorder risks and slip and trip risks by member companies, including introduction of action plans and task-specific training;
- Member companies deploying an effective Occupational Health management system and developing closer links with OH providers.

TRAINING

At both a farming and processing level, the UK dairy sector is undertaking a range of training and knowledge transfer initiatives, to better equip future farmers and employees with skills for the future.

PROJECT EDEN

With a skills shortage within the technical areas of production and developments in technology changing employee skill sets, the industry decided to invest in recruiting and training young people and help equip them for a rewarding and varied career in the dairy industry. As a result the industry helped set up a world-class, three year degree course at Reaseheath College, called Project Eden.

The course was developed by Dairy UK members, along with Reaseheath College and the National Skills Academy for Food and Drink. Students on the course benefit from state-of-the-art dairy facilities, built in 2010 and costing around £2.7m, meaning they can work with cutting edge technology and research while they train.

The involvement of Dairy UK members along with other key industry bodies in the development of the course has meant that students graduate with the full range of skills the industry needs, regardless of the company they go on to work for.

Reaseheath has one of its biggest student intakes ever for the Project Eden course this year, with over 40 students enrolling to begin study.

THE AGRICULTURE AND HORTICULTURE DEVELOPMENT BOARD (AHDB) AND DAIRY PRO

As part of their remit, AHDB Dairy seek to deliver sector-tailored knowledge transfer programmes, based on evidence from targeted research and development and third-party science. Their aim is ultimately to improve business performance and the efficiency of milk production systems.

AHDB research demonstrates that those who keep up-to-date with industry knowledge, best practice and management skills, and encourage their staff to follow suit, find the benefits of doing so reflected in the profitability of their businesses. In recognition of the benefits of professional learning and development, in 2012 Dairy Pro was launched; a specialist professional development scheme for the dairy industry. Created for the industry, by the industry, Dairy Pro recognises that professional learning is linked to improved motivation, greater productivity and ultimately better business success.

Dairy Pro supports those working in the dairy sector to access key learning and development materials, providing information on training events, online courses, access to information such as journals and a place to record and store all learning activities. Members can build up points and become 'Dairy Pro Endorsed', using this hallmark to publically demonstrate to those in the industry and outside of it that they have a firm commitment to professional development.

Dairy Pro;

- Aims to be a one stop shop for quality training information;
- Provides an online record of professional skills and learning;
- Promotes an efficient and profitable industry;
- Supports and encourages life-long learning;
- Demonstrates professionalism within the industry to both consumers and legislators.

With the scheme's membership now exceeding 1,400 members and with over 110 training partners UK wide, Dairy Pro as a brand is becoming ever more recognisable as a quality standard to industry companies and farm workers.

Further information on the scheme is available at: www.dairypro.co.uk.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Support the work of the Health and Safety Executive in its engagement with the dairy sector to implement strategies that will help companies improve health and safety culture and further reduce injury accident rates;
- Recognise the importance of ensuring a continued supply of trained labour to the sector and to support industry initiatives that address this issue.



9. CONSUMERS AND MARKETING

The UK dairy industry’s core expertise is in meeting the needs of consumer markets. The majority of output is pre-packed goods intended for direct consumption. UK dairy products are integral to the diet of the nation, but consumer preferences are constantly evolving. The UK dairy industry has responded to this dynamic market environment with sustained product development, innovation and branding, backed up with successful marketing initiatives.

MARKET PENETRATION

Dairy products can be found in almost every household in the UK. This gives the dairy industry one of the highest degrees of market penetration of any consumer product and makes dairy foods extremely important to the health and well-being of the nation.

The most recent Mintel market research reports show that;

- 87% of respondents have used cow’s milk in the three months to February 2017;
- 94% of UK adults buy cheese, demonstrating that it is well established as a household staple;
- 78% of adults eat spoonable yogurt/ fromage frais with over half of those (51%) doing so twice a week or more. (Sources: Mintel)

PRODUCT CONSUMPTION TRENDS

Prospects seem bright for the liquid and cheese sectors with the latest figures showing growth for both volume and value over the past year.

According to Defra’s authoritative but historic Family Food publication, consumption of cheese, cream, yogurt and butter all increased during 2015.

Table 13. Average 2015 Dairy Consumption Per Person Per Week

Product	Quantity	% change vs 2014
Total cheese	112g	+1.5
Hard cheese - Cheddar	62g	+2.4
Hard cheese - other UK	7g	-3.3
Hard cheese - foreign	7g	+3.1
Cottage, soft natural or processed cheese	36g	+0.6
Cream	24ml	+2.4
Yogurt and Fromage Frais	194ml	+1.9
Condensed milk	14ml	-16.6
Dairy desserts - fresh	37ml	-3.2
Butter	43g	+5.1

Source: 'Family Food' published by Defra

TRENDS IN LIQUID MILK CONSUMPTION

The latest data from Kantar Worldpanel shows that total household consumption of liquid milk continues to rise with data showing positive growth of 0.2% by volume and 2.5% by value in the 52 weeks ending June 2017. Semi-skimmed accounts for 59% of all household purchases and, after a long term period of

decline, whole milk's share has been higher over recent years.

By heat treatment type sales of pasteurised milk continue to rise at the expense of UHT and sterilised.

Graph 10 - Sales of Milk by Type

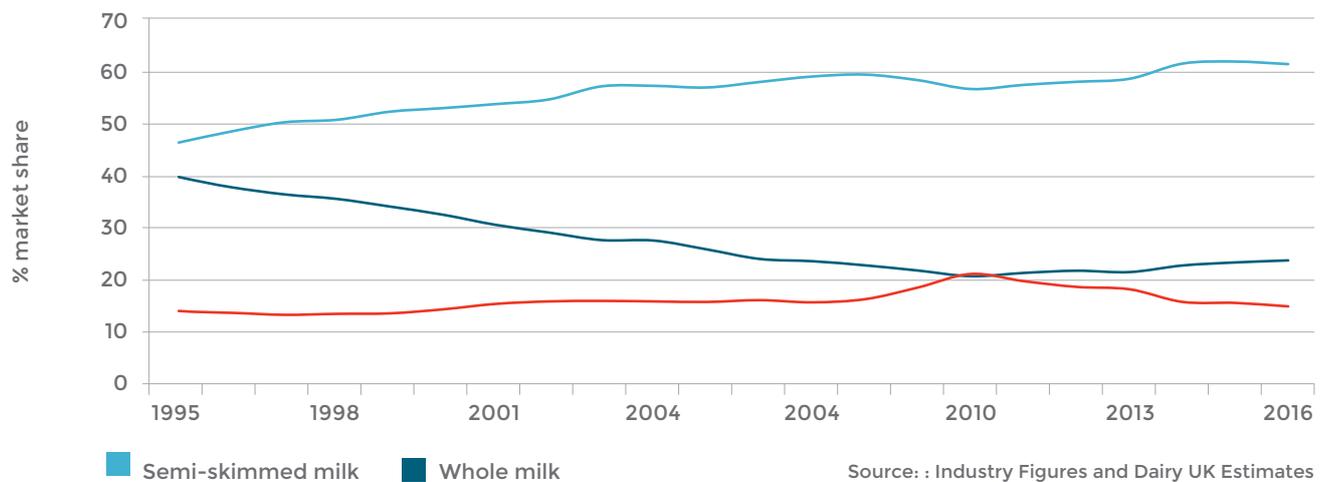
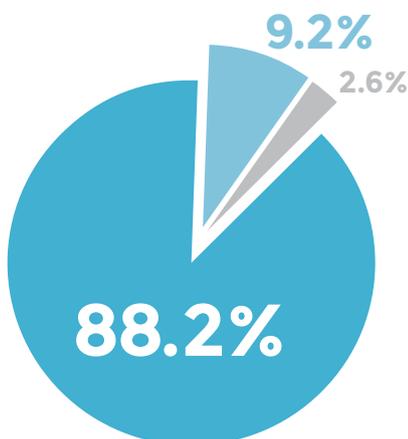


Table 14. Sales by Heat Treatment Type (million litres)

Product	52 w/e 19 June 2016	52 w/e 18 June 2017	% change
Pasteurised	4,782.9	4,767.2	-0.3%
UHT	236.5	233.8	-1.1%
Sterilised	7.1	6.9	-3.3%

Graph 11 - Sales of Liquid Milk by Container Type 2016 (Retail)



In terms of packaging, the proportion of liquid milk sold in plastic containers continues to increase and has reached over 88% of that sold by retailers, with approximately 12% sold in glass bottles or cartons.



CHEESE

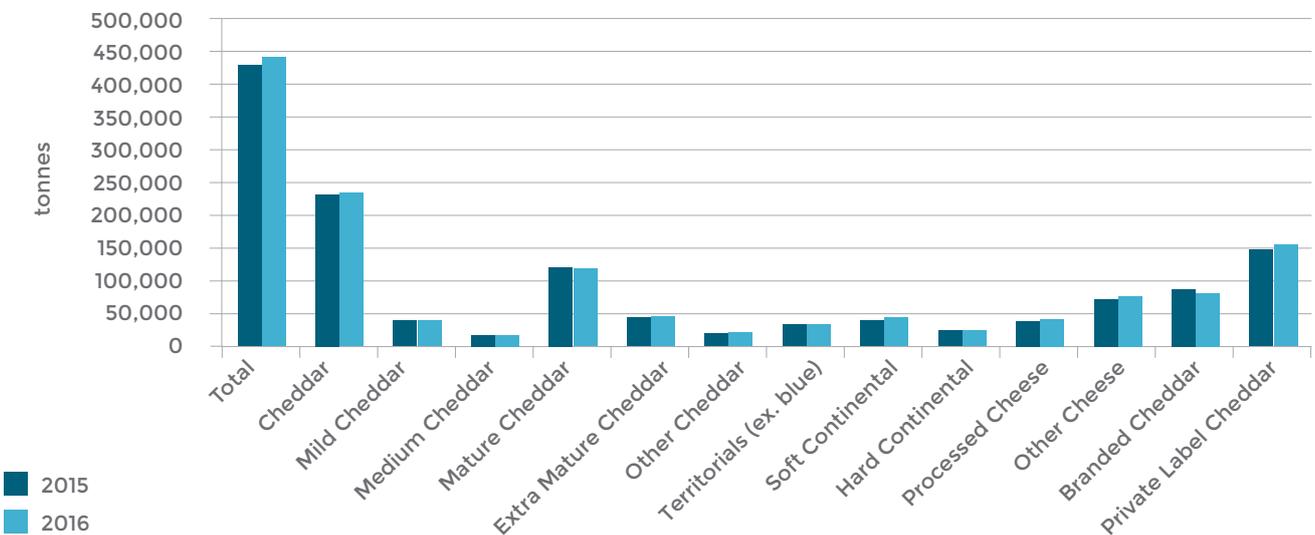
GB retail sales of cheese continue to grow year-on-year with 2016 recording an increase of 2.8% in volume terms. A slight fall in the average price has led to a marginal (0.3%) fall in value to £2.75bn.

All categories contributed to the overall growth, Cheddar (+0.9%), Hard Continental

(+4.0%), Soft Continental (+9.9%), Territorials (+5.1%) and Processed (+3.1%).

Cheddar retains its share of the sector, accounting for just over half of all purchases, but the proportion of mild varieties continues to decline, reflecting consumer's preference for more mature varieties.

Graph 12 - Household Sales of Cheese by Type in 2015 and 2016



OTHER FRESH DAIRY PRODUCTS

Yogurt is the star performer, as fresh dairy products continue to grow steadily. A key driver of growth in this sector has been the rise in consumption of functional foods, such as probiotic and prebiotic yogurts and yogurt drinks. Latest data from Mintel show that a quarter of all adults eat spoonable yogurt and a quarter drink yogurt/fermented milk drinks.

Mintel data (May 2017) shows that yogurt appeals to the health-conscious with 58% of spoonable yogurt buyers being influenced by health considerations. All natural ingredients and no added sugar also denote healthiness for many yogurt/yogurt drinks users/buyers.

Table 15. UK Annual Consumption Per Person of Fresh Dairy Products

Product	2005/6	2012	2013	2014	2015
Yogurt	585	598	599	607	626
Fromage Frais	67	68	59	55	52
Cream	68	85	83	80	84
Dairy desserts	136	140	127	132	129

Source: 'Family Food' published by Defra

Sugar concerns have prompted 40% of spoonable yogurt eaters/buyers to switch to yogurt in place of other desserts. Consumption is also underpinned by the rising numbers of children and older people that are traditionally strong purchasers of yogurts.

HEALTHY EATING AND DAIRY PRODUCTS

Healthy eating is driving dairy product demand. In response to public concern about obesity and calorie intake the industry has generated a comprehensive range of lower fat varieties of dairy products. This began decades

ago with semi-skimmed and skimmed milks, and it is still continuing for liquid milk with the development of 1% and below fat milks. Low fat and reduced fat “lighter” cheeses have also seen positive growth.

CONSUMER CHOICE

Income pressures affect consumer choice with the industry adapting its product proposition and pricing strategies.

This is reflected by price remaining, by some distance, the main consideration in purchasing patterns, with familiarity with the product also being a determining factor in selection. The freshness of the product also rates highly with the use or sell by date and quality strong influences behind consumer choices.

Table 16. Macro Drivers of Product Choice

Drivers of Consumer Choice Rankings 2016	
1	Price
2	Familiarity with product
3	Use or sell by date
4	Quality
5	Healthy option
6	Taste or smell
7	Brand
8	Special offers

Source: IGD

INNOVATION

The industry invests in product innovation and ranks alongside major European competitors in commitment to this area.

Graph 13 - Top 10 European countries in Dairy Product Launch Activity - % of Total Result set (Q3 2016 - Q2 2017)



Source: Innova Market Insights

BRANDS

In the UK, focuses for innovation include:

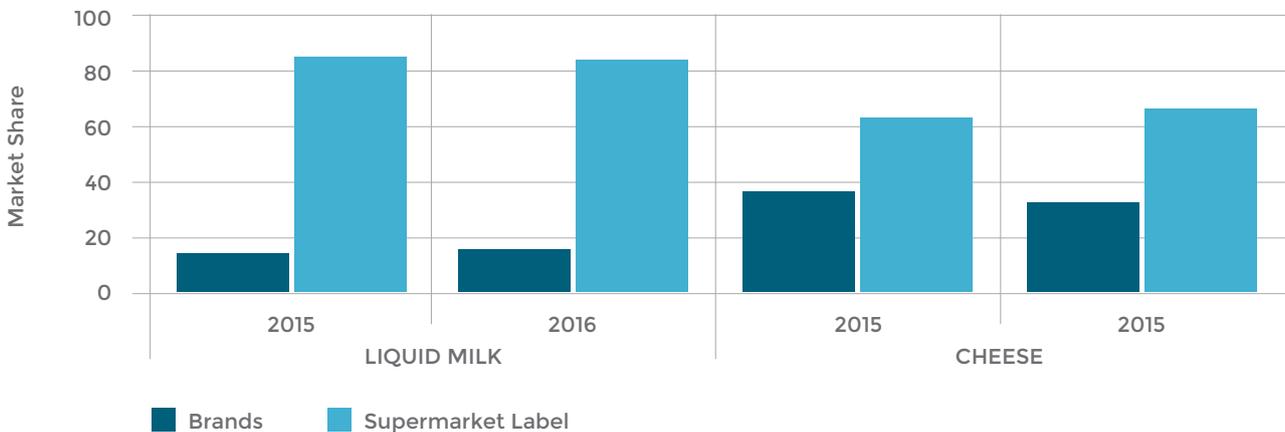
- Health concerns: Functional and enriched foods
- Lifestyle issues: Convenience products
- Ethical choices: Organic products
- Provenance: Locally supplied products
- Quality: Premium products

dairy industry is working hard to increase the proportion of branded products in its portfolio.

Despite a challenging economic environment, the dairy industry has been successful in retaining the share of products sold under dairy company brands for cheese at one third of sales.

One of the major drivers of the value obtained from milk is the possession of brands. The UK

Graph 14 - Brands versus Supermarket Label in 2015 & 2016



PROVENANCE

The British dairy industry continues to focus on developing products that meet a wide range of consumer expectations, therefore facilitating consumer choice. On-pack labelling relating to the origin of food has been a key aspect of this, and a significant number of dairy companies provide this type of information on their products.

This is also the result of the development by the food industry of a Voluntary Code of

Practice on country of origin labelling for meat and dairy products back in 2010, which is still relevant today. The development of the Code was facilitated by Defra.

Growing public interest in the origin of food and production methods has also led to the creation of world-leading traceability systems and direct relationships between retailers and dairy farmers.

ORGANIC MILK AND DAIRY PRODUCTS

According to the Organic Milk Market Report 2017, dairy is the largest organic food and drink sector, worth £344m in retail sales and representing 29% of all UK organic food and drink sales.

Sales of organic dairy grew by 2.2% in 2016 and this was mainly driven by organic milk (3.3% to £150m) and yogurt (0.5% to £149m),

with cheese (3.8% to £25m) and butters and fats (4.2% to £20m), also contributing to the growth, albeit from lower bases.

Organic retail milk sales have recovered (4.4% over the last year) and there has been a significant increase in household penetration with 1 in 4 households now purchasing organic milk.

Table 17. Retail Sales of All Milk and Organic Milk (Million Litres)

	All milk	Organic	% of total sales
2012	5,179.9	133.9	2.58
2013	5,273.0	141.8	2.69
2014	5,419.9	135.9	2.51
2015	5,495.7	133.6	2.43
2016	5,476.7	149.1	2.72

Source: AHDB Dairy, Kantar Worldpanel



EU SCHOOL MILK SCHEME

The dairy industry pays careful attention to the school and nursery milk market as it helps to cultivate consumption habits that last a lifetime. The EU and the UK authorities provide support for milk consumption at this age; free milk is available to under-fives in registered nurseries and subsidised milk is available for a number of pupils in primary and secondary education.

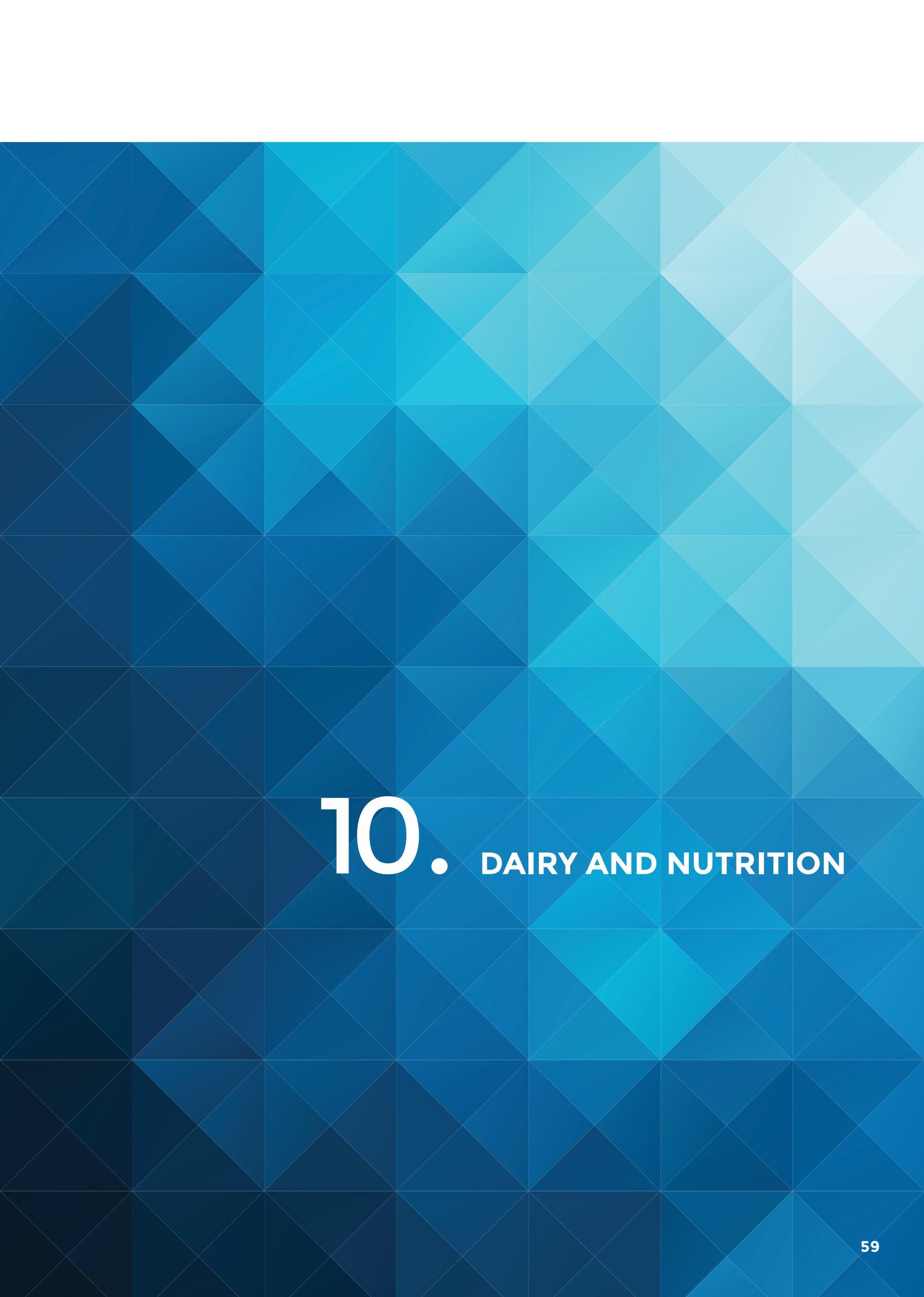
The EU gives a modest subsidy for liquid milk and yogurt consumed by school children through its School Milk Subsidy Scheme (the volume was 25,282 tonnes in the UK during the 2015/16 school year). The current subsidy rates are €0.19 per litre from the EU and a further 4p per litre “top-up” from the Government for children in primary education. In Northern Ireland, the 4p “top-up” is also payable on milk supplied to children in secondary education. In Wales, the Welsh Government funds an additional top-up to provide free milk to children in Key Stage 1 education.

New EU Regulations became applicable from the 2017/18 school year. Changes to UK scheme arrangements have been minimised as far as practicable pending review to ensure a smooth transition following EU-exit.



DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Support the work of the Health and Safety Executive in its engagement with the dairy sector to implement strategies that will help companies improve health and safety culture and further reduce injury accident rates;
- Recognise the importance of ensuring a continued supply of trained labour to the sector and to support industry initiatives that address this issue.



10. DAIRY AND NUTRITION

Milk and dairy products naturally contain a unique array of protein, vitamins and minerals, and have an important role to play in the improvement of the British diet. It is crucial that Government takes into account the benefits of consuming dairy products when developing nutritional strategies and recommendations.

The British dairy industry has already invested significantly in reformulating existing products and developing new ones in order to support consumer choice, and will continue to do so through rigorous product research and development.

Milk and dairy products provide a unique array of nutrients to the British diet. Milk is high in quality protein, calcium, iodine, B12, riboflavin and is a source of phosphorus, B5 and potassium. The dairy food group as a whole contributes a significant amount of nutrients to the British diet.

The latest National Diet and Nutrition Survey (NDNS) shows that milk and milk products contribute 35% - 40% of calcium intakes to adult and teen diets, respectively, and over 47% to children's diets. Around 15% of adult and teen protein intakes come from milk and milk products, and contributes a significantly higher amount (22%-35%) to the diets of children under 10 years. Dairy also contributes to about 30% of adult and teen riboflavin intakes, and contributes 42-58% to children's diets. Whilst milk and milk products are not classed as a source of vitamin A (except for full-fat cheese) or

zinc, NDNS data shows they still contribute a significant amount of these nutrients to the British diet.

Milk and milk products also contribute a significant amount of iodine to children's (54-67%), teen (67%) and adult (54%) diets, alike. Iodine is a little known nutrient, it makes up part of the thyroid hormones which help to release energy from food and regulate growth. Iodine also contributes to brain and nerve function, and helps maintain healthy skin. However, The World Health Organisation has stated that sections of the British population have 'mild to moderate' iodine deficiency. Survey data shows 1 in 4 teenage girls and 11% of adult women do not get enough iodine from their food. Furthermore, research from the University of Surrey linked poor iodine intake in schoolgirls and young women to low IQ scores in children. The role of milk and dairy in preventing iodine deficiency is starting to receive attention. Similarly, research suggests Vitamin B12 may be as important as folic acid in the prevention of neural tube defects during pregnancy. A glass of milk provides 41% of the UK's recommendation for iodine, 74% of B12, 35% riboflavin, 31% calcium, 23% B5 and 28% phosphorus.

THE CHILDHOOD OBESITY PLAN

To tackle rising obesity the UK Government is taking steps towards addressing poor dietary choices. The Government's Childhood Obesity Plan launched in 2016 aims to significantly reduce England's rate of childhood obesity within the next ten years. Key measures include the introduction of a sugar levy on soft drinks and of a sugar reduction programme for a number of food categories, and the revision of the nutrient profiling model used for determining which foods can be advertised to children on broadcast and non-broadcast channels.

Milk and dairy products have an important part to play in the improvement of the nation's diet, and the dairy industry strives to produce nutritious products, making sure that the highest quality research informs its efforts. It is crucial that Government initiatives and other campaigns take into account the benefits of consuming dairy products when making dietary recommendations.

THE SOFT DRINKS INDUSTRY LEVY

To encourage producers and importers of sugar-sweetened soft drinks to reformulate their products to reduce the added sugar content a levy will apply from April 2018 to sugar-sweetened soft drinks. A lower rate will apply to sugar-sweetened drinks with a total sugar content of at least 5g/100ml and a higher rate will apply to drinks with at least 8g/100ml.

In light of milk's natural nutrient-richness, milk-based drinks with over 75% milk content will be exempt from the tax. This is an important step towards recognising the significant contributions that these drinks make to children and teenagers' intakes of protein, calcium, phosphorus, potassium, iodine, riboflavin and vitamin B12. These numbers

acquire particular importance when considering that significant proportions of those same age groups do not meet recommended intakes for a number of those essential nutrients from the food they eat. For children who do not consume plain milk, these products can be an important source of essential nutrients in their diets and it is important for national legislation to recognise this.

SUGAR REDUCTION PROGRAMME

The food and drinks industry has been challenged to reduce overall sugar across a range of products by at least 20% by 2020.

The British dairy industry has already invested significantly into reformulating existing products and developing new ones in order to support consumer choice, and will continue to do so. Continuous product research and development is at the core of this effort.

However, the dairy industry welcomes the fact that the naturally-occurring sugar lactose has been excluded from the Government's sugar reduction programme in recognition of the fact that – contrary to other types of sugar – it has not been shown to cause any adverse effect on health. The distinction between different types of sugars is fundamental and needs to be included in Government strategies.

THE DEPARTMENT OF HEALTH NUTRIENT PROFILING MODEL

The Government is in the process of reviewing the Department of Health nutrient profiling model for determining which foods can be advertised to children in the UK via broadcast and non-broadcast channels. The model achieves this by using thresholds for calories, salt, sugars and fat.

Currently, the vast majority of cheeses would not be able to be advertised due to their saturated fat content. However, cheese is a nutrient-rich food which contains a number of essential minerals and vitamins such as calcium. Calcium is established as being essential during the critical phases of growth of childhood and adolescence, as it helps achieve peak bone mass and reduce risk of osteoporosis later in life. Research also points to the beneficial effects of cheese on oral health, which is vital considering that so many children in the UK suffer from poor dental health.

The cheese industry cannot meet the current nutrient profiling model requirements regardless of whether it reformulates its products or not. A hard cheese, even with the lowest achievable fat content, does not qualify under the current model, owing also to the fact it is based on 100g rather than on portion size.

Given the nutrient-richness of cheese and the fact that it contributes only 2% to the calorie intake of children and adolescents aged 4-18 years, the dairy industry is advocating that the nutrient profiling model exempt the cheese category. This is already the case in countries such as Ireland.

SACN AND SATURATED FAT

The Government will consider whether to implement a saturated fat reduction programme in foods sold in the UK once the Scientific Advisory Committee on Nutrition (SACN) - the official scientific advisory body to the UK Government on nutritional and dietary issues - publishes its updated recommendations on saturated fat intake in late 2017.

The Dairy Council has submitted evidence to SACN's review which highlights that the effect of saturated fat consumption cannot be studied in isolation, but is instead highly dependent on the type of food it is contained in. Although dairy products contain saturated fat, the weight of evidence suggests that certain dairy products may be protective against cardiometabolic disease and that other components in dairy may actually counteract the presence of saturated fat. For example, calcium and bioactive peptides may have beneficial effects on blood pressure. It is therefore important to consider the complex interplay of nutrients within a food and the effects of whole foods rather than individual nutrients.

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Ensure the effective implementation of the Soft Drinks Industry levy once in force, and ensure that naturally nutrient rich products like milk and yogurt based drinks remain exempt from the tax;
- Engage with the dairy industry to understand its technical capabilities in the area of reformulation and what can and cannot be achieved;
- Take into account the wide range of essential nutrients that dairy products such as milk, can provide to children in the UK;
- Ensure that the Department of Health Nutrient Profiling Model excludes cheese in view of its nutrient-richness and the health benefits it provides;
- Ensure that the rich interplay of nutrients in whole foods and their positive effect on health outcomes are taken into account in any national dietary advice to consumers.



11 • UK DAIRY AND THE ENVIRONMENT

The UK dairy industry recognises its responsibility to minimise its environmental footprint wherever possible so as to ensure the continued sustainability of the sector and to ensure that dairy products can remain a part of the nation's diet for years to come. The UK dairy industry has led the wider Agri-food industry in terms of environmental commitment and action and will continue to work to ensure that it retains its leadership position. The industry undertakes a myriad of environmental and sustainability initiatives, foremost of which is The Dairy Roadmap which provided a template mirrored by several other countries around the world.

THE DAIRY ROADMAP

The Dairy Roadmap is a cross-industry initiative between Dairy UK, AHDB Dairy, the NFU and Defra bringing together the dairy supply chain. Through the Dairy Roadmap, the UK dairy industry has led the world in committing itself to a plan which aims to reduce the industry's environmental footprint.

The Dairy Roadmap began in 2008, setting out a series of targets to tackle the major environmental impacts of producing liquid milk. In 2011 the Roadmap was expanded to include all dairy products.

Over the past decade, the Roadmap has reported success against its targets for 2010 and 2015, whilst setting ambitious targets for 2020 and 2025, which will ensure that the initiative remains at the fore front of the sustainability agenda.

As the Dairy Roadmap approaches its 10-year anniversary in 2018, we are committed to continuing its achievements. The 2018 report will aim to celebrate the successes of the past ten years, whilst reaffirming our commitment to and reporting progress against the targets for 2020 and 2025. More information can be found at www.dairyroadmap.com.



PERFORMANCE AGAINST 2015 TARGETS

PRODUCERS

The 2015 targets committed dairy farmers to make improvements in a wide range of areas including renewable energy, water efficiency,

carbon footprint and environmental stewardship. The table below details the progress reported in the 2015 Dairy Roadmap report.

Table 18. Producers Progress

Target	Progress
90% of farmers are actively nutrient planning	In 2015, 77% of dairy holdings were implementing nutrient management plans
65% of dairy managed farmland into Environmental Stewardship Schemes	In 2013, 69% or 841,810 hectares were within an ESS, meeting the target 2 years early
70% uptake of water efficiency measures	In 2012, 78% of respondents to the DairyCo resources survey were undertaking water efficiency measures
10-15% of dairy farmers investigating or implementing renewable energy	In 2013, 29% of respondents to the DairyCo resources survey had implemented some form of renewable energy
50% of dairy farmers implementing new developments and/or technologies to reduce emissions from agriculture	In 2015, 78% of dairy farmers were taking action to reduce GHG emissions on their farm, the highest percentage out of all farming sectors
Declining trend in serious pollution incidents on farm	Data from the Environment Agency show a consistent long term trend towards reducing pollution incidences associated with dairy farms. Between 2013 and 2014, incidents caused by dairy farms decreased by 18%
Dairy farmers encouraged to calculate carbon footprints and implement carbon reduction plans	In 2012, 38% of respondents to a DairyCo survey had undergone a carbon footprint audit on their farms

PROCESSORS

The wide ranging targets adopted by the dairy processing sector represent a key step in formalising the sector's commitment to environmental sustainability. Individual processing companies have committed to the initiative, each undertaking actions which will

help the sector achieve its targets. The table below details the progress reported in the 2015 Dairy Roadmap report against a wide range of targets including environmental management systems, water efficiency, waste reduction, and recycling.

Table 19. Processors Progress

Target	Progress
Every large processing site will have in place an environmental management system (EMS) covering carbon, energy, water, effluent, waste and packaging, with all permitted sites progressing to an externally verified EMS by 2015.	As of 2015, 91 % of large Dairy Roadmap sites have an EMS in place and 90% of permitted sites have EMS externally verified
Small sites to be investigating EMS	Due to the Roadmap's low threshold for a small processing site (below 50 tonnes of milk a day), there are currently only six small sites reporting into the initiative; of these, two had systems in place by 2015, with a third investigating.
All major processing companies to be implementing a carbon management programme	All 5 major dairy processing companies currently reporting into the Dairy Roadmap have programmes to monitor and reduce their carbon emissions.
A 20% relative reduction of water brought onto site	In 2015, a 15% reduction against 2008 levels was achieved
To achieve a 20% relative reduction in COD load in discharge	Due to a 23% increase in throughput coupled with smaller product runs, 2015 data reported a 7% increase. Future targets look to reduce this figure
To send zero ex-factory waste to landfill where environmentally advantageous for all large processing sites	4% of ex-factory waste was sent to landfill in 2014 compared to 32% in 2008, an 87.5% reduction
Three AD plants at dairy roadmap sites	Three AD plants are currently operational at Dairy Roadmap sites
30% recycled material in HDPE milk bottles	The industry has achieved 31% recycled material in HDPE milk bottles
Remove all HCFCs at all large processing sites	All sites, large and small have phased out HCFCs or planned to do so by the end of 2015
80% of paper-based cartons to be FSC-labelled	During the first six months of 2015, 74% was achieved. It is expected that this value has increased
A Biodiversity strategy for processors to be written and to be in the process of implementation	Dairy UK has launched a biodiversity commitment for dairy processors.
All major processing companies to be part of the Freight Transport Association's Logistics Carbon Reduction Scheme or to commit to equivalent fuel efficiency targets	Four of the five major companies have joined the FTA scheme. Three of these have set additional emissions reduction targets
All major Dairy Companies to have phased out Euro4 engines	As of 2015, two large processing plants have phased these out with the remaining three aiming to do so by the end of the year

RETAILERS

Retailers are an important and influential part of the supply chain, forming the link to consumers, but also working increasingly closer with their supplying dairy farmers. Retailers, Asda, the Co-operative, Marks & Spencer, Morrisons and Tesco have all

provided statements of commitment to the Dairy Roadmap and its aims. New opportunities for engagement with retailers are being explored which will contribute towards progress being made by producers and processors to meet targets.

FUTURE ROADMAP TARGETS

Under the Dairy Roadmap dairy producers and processors have set wide reaching targets for both 2020 and 2025. There is no end point, no

finish line on environmental sustainability and the sector will continue to challenge itself to keep progressing and innovating in this area.

Table 20. Future Targets - Producers

2020	2025
30% reduction in GHG (including carbon dioxide, methane and nitrous oxide) emissions from dairy farms between 1990 and 2020	90% of dairy farmers implementing technologies / practices to reduce emissions from agriculture
70% of non-natural waste is recycled or recovered as standard practice	85% of farmers using expert advice to optimise feed plans, which is directly linked to reduced emissions
90% uptake of water use efficiency measures	Dairy farmers to enhance and promote action being taken to improve biodiversity
40% of energy used on dairy farms is from renewable resources	95% uptake of water use efficiency methods

Table 21. Future Targets - Processors

2020	2025
To achieve a 15% improvement in energy efficiency	30% relative reduction in carbon related to energy use at processing sites
20% relative reduction in water brought onto site	30% relative reduction in net water brought onto site
A 20% relative reduction in Chemical Oxygen Demand (COD) in pre-primary treatment effluent	30% reduction in food waste from site (based on solids) in line with the EU Fusions food waste definition
To send zero ex-factory waste to landfill	Dairy sites to exhibit an increase in biodiversity
50% recycled material in HDPE milk bottles, or its carbon equivalent reduction	Dairy industry to develop and implement an industry standard for sustainability training
All tertiary packaging to be reusable or recyclable 100% of paper based cartons to be FSC labelled	Improve design for dairy packaging to maximise recycled content as appropriate, improve recyclability and deliver product protection to reduce food waste, while minimising carbon impact.
100% of paper based cartons to be FSC labelled	

MEASURING THE INDUSTRY'S CARBON FOOTPRINT

The UK dairy industry has committed to measuring, monitoring and reducing carbon within the entire dairy supply chain. Dairy UK worked in collaboration with DairyCo and the Carbon Trust to produce a common approach to produce a carbon footprint of dairy in the UK. Through this collaboration, the industry developed dairy sector specific guidance on the application of PAS (Publicly Available Specification) 2050 that sets out broad rules for carbon footprinting.

This methodology was used by DairyCo as part of a three-year carbon footprinting study between 2011 and 2013 which aimed to provide a robust and externally verified carbon footprint of British milk. The final report, published in May 2014 showed that over the three year period the average on-farm carbon footprint for a litre of milk fell year on year. The results of 1,293, 1,227 and 1,177 kg CO₂e/litre of

milk for year 1 to 3 respectively equated to a 9.0% reduction over the period of the project.

Since the development of this guidance processors and retailers have conducted their own carbon footprinting studies of dairy farms. Carbon footprinting conducted by Morrisons in 2011 at 105 Dairy Crest farms across the UK and certified by the Carbon Trust put the greenhouse gas emissions associated with UK milk production at 1,220 g CO₂e/litre of milk. Given the process of farm restructuring and improvements in productive efficiency it can be expected that there would have been a further advance on this figure to date. This value sits below the average emissions in Western Europe at 1,500 g CO₂e/kg of milk and the World at 2,400 kg CO₂e/kg of milk as reported by the FAO in 2010. It also places UK dairy amongst the leading nations when compared to the overall range, 1,300 - 7,500 kg CO₂e/kg of milk.



DAIRY FARMING AND GREENHOUSE GAS (GHG) EMISSIONS

The dairy industry is carrying out research and considering cost effective ways to reduce the greenhouse gas (GHG) emissions from dairy farms. The key GHG emissions from dairy farming are methane and ammonia. Methane is a by-product of the enteric fermentation of grass, forage and other feed within the cow's rumen, the largest of its four stomachs. Ammonia is produced by the bacterial degradation of the unabsorbed nitrogen discarded in ruminant manure.

Under the revised targets of the EU's National Emission Ceiling Directive, the UK has pledged to reduce ammonia emissions by 8% and 16% by 2020 and 2030 respectively (against 2005 levels). Research into ways to reduce GHG emissions from dairy farms is considering a number of opportunities that may help to meet these and other GHG emission targets. These include;

- **Low emission animal housing;**
- **Improved manure and slurry storage:** The use of covers, slurry bags and sheeting could help to reduce ammonia emissions;
- **Improved slurry application:** Targeted application through improved technology;
- **Anaerobic Digesters (AD):** These can be used to produce biogas from stored manure and slurry. AD also offer a source of low carbon electricity than can offset the overall GHG balance;
- **Nutrient planning:** To ensure that the use of nitrogen on farms is optimised, reducing the overall emissions of nitrous oxide and methane;
- **Biofuels in agricultural vehicles;**
- **Improving the efficiency of rumen microbial action:** This could be achieved through changes in diet or the use of feed additives in order to reduce methane production;
- **Avoidance of low-quality feed that encourages the production of methane;**
- **Cow Longevity:** Increased cow longevity may help to improve the ratio of methane emission per unit of production;
- **Increased yield per cow:** Whilst increased yields would help reduce emission footprint, it must be recognised that on many units yield may already be at optimum levels in terms of economic viability and animal welfare.



CLIMATE CHANGE AGREEMENTS

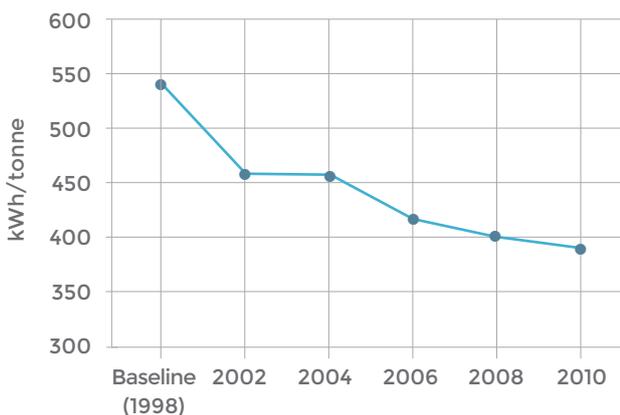
Dairy Energy Savings Ltd, a subsidiary of Dairy UK, administers the industry’s Climate Change Agreements. Since April 2001, the Climate Change Levy (CCL) has been added to the cost of non-domestic energy as an incentive to improve energy efficiency and reduce carbon emissions. In recognition of the challenge that this added cost poses to the competitiveness of energy intensive industries, Climate Change Agreements were introduced by the Government. In return for signing up to these voluntary agreements and committing to meet challenging energy and carbon reduction targets, eligible companies are entitled to a discount on the CCL, encouraging companies to improve energy efficiency.

At present the discount offered for facilities who successfully meet their targets is 90% for electricity and 65% for other fuels. These are set to rise in April 2019 to 93% and 78% respectively with the end of the Carbon Reduction Commitment (CRC) Scheme.

During the first phase of the CCA (1998-2010) the dairy sector exceeded the 22.5% improvement in energy efficiency, boasting an impressive 27.9% improvement; in absolute terms equating to a reduction in CO2 of 257,337 tonnes.

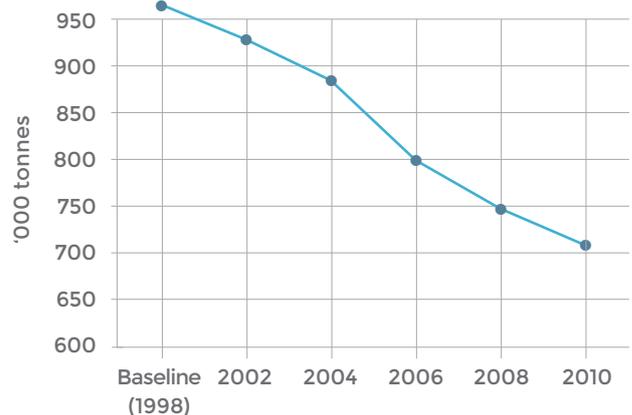
At present over 90 processing sites from around 60 companies are participating in the second phase of the CCA running from 2013 to 2023. Ahead of the current phase, Dairy Energy Savings Ltd conducted a comprehensive energy best practice survey to determine the energy reduction potential in the sector. Following this, a target improvement in energy efficiency of 13.6% (2008-2020) was agreed with the Government. Data from the first CCA target period (2013-2014) shows that the dairy sector has already achieved a 15.8% improvement against the 2008 level, and it is anticipated that this figure will rise further when the data for the second target period (2015-2016) is published.

Graph 15 - Energy Efficiency (CCA Phase 1)



Source: CCA/Environment Agency

Graph 16 - Total Carbon (CCA Phase 1)



Source: CCA/Environment Agency



INDUSTRIAL ROADMAP FOR DECARBONISATION AND ENERGY EFFICIENCY

The Industrial Decarbonisation and Energy Efficiency Roadmaps are a series of documents developed in collaboration between Government and industry which aim to assist industry in improving their energy efficiency without compromising their competitiveness. Dairy UK recently helped develop and pledged commitment to the UK Food and Drink Sector Decarbonisation and Energy Efficiency Action Plan.

The Action Plan builds upon the evidence base laid out in Phase 1 of the Industrial Roadmaps project. It provides a voluntary framework of actions to deliver decarbonisation and energy efficiency improvements within the food and drink sector between now and 2050. The key actions laid out in the action plan are as follows;

1. Increase collaborative R&D undertaken by the food and drink sector;
2. Increase the adoption of state-of-the-art (SAT) technologies;
3. Improve the food and drink sector's awareness of existing funding and finance options for both mature energy efficiency and decarbonisation technologies;
4. Increase the supply of Science, Technology, Engineering and Maths (STEM) graduates with the skill and knowledge needed to deliver a low-carbon competitive future for the food and drink sector;
5. Identify additional opportunities for using bioenergy in the food and drink sector;
6. Identify and implement industrial heat recovery projects that realise benefits for the sector.

ENVIRONMENTAL BENCHMARKING AND REPORTING

Dairy UK undertakes annual environmental benchmarking in order to help members monitor and improve their performance against a series of environmental performance indicators on energy use, emissions, water, waste and recycling. Launched in 2008, the tool allows members with complete anonymity to compare their performance against the average of the dairy sector. Dairy UK also uses the data collected through the environmental benchmarking tool for wider sustainability reporting and to track progress against the targets of the Dairy Roadmap

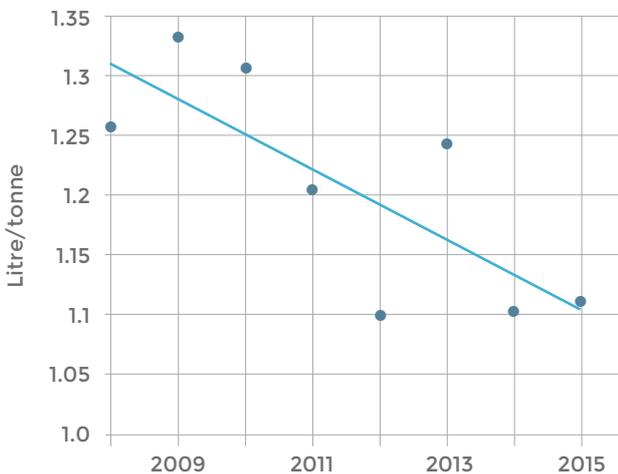
Benchmarking within and across sectors is seen as an increasingly important means of improving performance for individual sites. It helps give operators the power to identify areas for improvement and to apply best practices and processes.

The most recent Dairy Environmental Benchmarking Report in 2016 showed the great progress being made by dairy processors in this area since 2008. Highlights include;

- 16% increase in energy efficiency;
- 15% improvement in water efficiency;
- 18% decrease in the amount of waste sent to landfill;
- 21% increase in the amount of waste recovered or recycled.

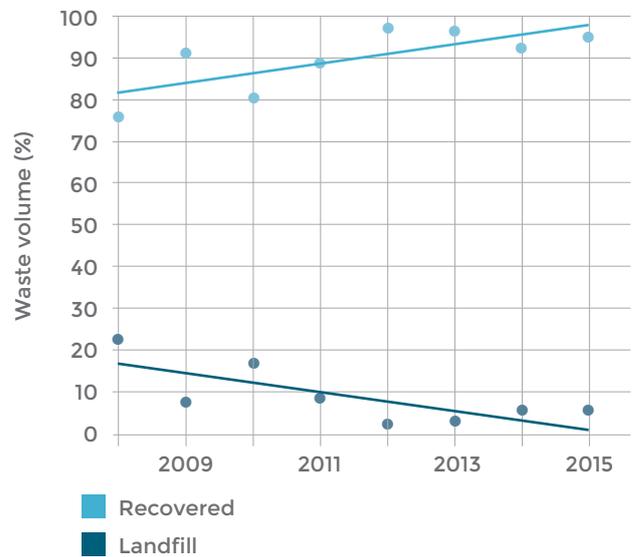
Dairy UK has recently expanded its benchmarking requirements in the areas of food waste and packaging waste. These changes help the dairy industry to report against its targets in the Dairy Roadmap and other environmental commitments.

Graph 17 - Water Efficiency



Source: Dairy Environmental Benchmarking Report 2016

Graph 18 - Destination of Waste



Source: Dairy Environmental Benchmarking Report 2016

BREF

BRef stands for Best Available Techniques Reference Document. The Food Drink and Milk (FDM) BRef sets out the techniques, technologies, performance levels and emissions levels that all permitted sites in the EU must meet in order to be allowed to operate.

A review of the FDM BRef was conducted between 2014 and 2016, with the first draft of the revised guidelines published in early 2017. Since this publication Dairy UK has worked with the Environment Agency and the European Dairy Association to provide

comments and suggest amendments. Under the current timeline for review, it is anticipated that the finalised draft will be delivered in early 2018.

The revised BRef is of great significance and will likely form the basis of future decision and policy making on crucial topics like water and energy use in the sector. Brexit is not expected to impact the outcomes of the review, and sites in the UK processing over 200 tonnes of milk a day will need to be compliant with the new standards by 2020.

THE COURTAULD COMMITMENT 2025

Dairy UK is a signatory of The Courtauld Commitment 2025, a WRAP (The Waste and Resources Action Programme) led campaign aimed at tackling waste in the food and drink sector. Launched in 2015, under this voluntary agreement Dairy UK has pledged its commitment to make food and drink production more sustainable and reduce the resources required to produce food and drink by 20%. In order to achieve this it has been calculated that by 2025 the entire food and drink sector must meet the following targets;

- 20% reduction in food & drink waste arising in the UK;
- 20% reduction in GHG intensity of food & drink consumed in the UK;
- A reduction in impact associated with water use in the supply chain.

In order to meet these commitments and the respective targets established in the Dairy Roadmap, Dairy UK has set up a Dairy Working Group in association with WRAP to target waste hotspots across the supply chain.



DAIRY UK BIODIVERSITY COMMITMENT

Dairy UK has developed a biodiversity commitment for dairy processors. Whilst dairy farms present the greatest opportunities for improving biodiversity within the dairy supply chain, dairy processors recognise that they too can play a small but crucial role by promoting biodiversity at processing sites. The commitment recognises the heterogeneity in dairy site locations and provides the flexibility to encourage biodiversity where feasible. The strategy commits dairy processing sites to;

- * Developing and implementing appropriate measures on site that make

- a contribution to enhancing biodiversity; These may include but not be limited to: complementary planting of native plant species, erecting bird nesting facilities, allowing natural regeneration, removing invasive species and avoiding light pollution
- * Alternatively, sites will endeavour to engage in biodiversity projects in their local communities. These may include but not be limited to: working with local conservation groups, NGOs, charities and schools;
- * Moderate impact on biodiversity where possible in the ways that sites use energy and water, dispose of waste and run their transport operations.

UK DAIRY INDUSTRY AND INTERNATIONAL ENVIRONMENTAL COMMITMENTS



DAIRY DECLARATION OF ROTTERDAM

Launched at the IDF World Dairy Summit in Rotterdam in October 2016, the Dairy Declaration of Rotterdam acts as a commitment from the dairy community to the continued sustainable development of the dairy sector. The IDF and Food and Agriculture Organisation (FAO) have already been joined by countries from around the world in signing the declaration, and it is the intention of Dairy UK and the Dairy Roadmap to sign the declaration on behalf of the United Kingdom.

The Declaration recognises the UN 2030 Agenda for sustainable development as the overarching framework that guides actions towards sustainable development, and the vital role that dairy plays in sustainable development through food security, poverty reduction, environmental management, and as an important livelihood around the world.

In signing the declaration, the signatories agree to;

- Take an integrated approach to promote the sustainability of dairy systems, jointly taking into consideration social, economic, health and environmental dimensions;
- Give particular attention to the needs of family farmers small holders and pastoralists
- Build, implement and disseminate tools and guidelines to facilitate the identification and adoption of sustainable practices in the dairy sector;
- Build capacity in support of sustainable practice and provide enabling conditions;
- Measure and report on sustainability outcomes;
- Strengthen multi-stakeholder dialogue for consensus building, reviewing progress and continuous improvement.

The Dairy Declaration of Rotterdam can be viewed online at www.dairydeclaration.org.

DAIRY SUSTAINABILITY FRAMEWORK

Dairy UK is an Affiliate Member of the Dairy Sustainability Framework (DSF), a collaborative global industry led consortium. The DSF provides a shared framework that allows the international dairy sector to work collaboratively in improving global sustainability within the sector.

The framework includes eleven key sustainability categories, identified as relevant

to the dairy sector globally. Each of these has an associated high-level objective which members of the DSF have committed to working towards.

Dairy UK is currently considering becoming an Aggregate Member of the DSF, and joining in the reporting against all eleven criteria set out by the DSF using the agreed indicators.

DAIRY SUSTAINABILITY FRAMEWORK GLOBAL CRITERIA

Greenhouse Gas Emissions	Biodiversity
Soil Nutrients	Market Development
Waste	Rural Economies
Water	Working Conditions
Soil	Product Safety & Quality
	Animal Care

DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Recognise the ambitious commitments the dairy industry has made to improve its environmental footprint through The Dairy Roadmap;
- Recognise the UK dairy industry's role in helping to deliver on the commitments of the joint Food and Agriculture Organisation (FAO) and the International Dairy Federation's (IDF) Dairy Declaration of Rotterdam. The Dairy Declaration is key in helping to the dairy sector deliver against a number of the United Nations Sustainable Development Goals;
- Engage with the dairy industry in further ensuring the continued environmental sustainability of the entire dairy supply chain within the United Kingdom;
- Engage with the dairy industry to understand the feasibilities of agriculture to minimise greenhouse gas emissions, and provide support in achieving emissions reduction targets;
- Recognise the strong performance of the dairy processing sectors climate change agreements and to provide further support to help implement low-carbon or energy efficient technologies and innovations;
- Uphold the commitments of the Industrial Decarbonisation and Energy Efficiency Roadmap 2050: Food & Drink Action Plan, and to further engage with the dairy industry in the development of decarbonisation and energy efficiency policy;
- Ensure the United Kingdoms continued participation within the EU Emissions Trading Scheme until at earliest the completion of Phase 3, and to continue to engage with the dairy industry in the development of post-Brexit Industry emissions policy.





12. WORLD DAIRY TRADE AND FUTURE PROSPECTS

Growing demand is putting world milk production on an upward trend. International trade in dairy products is also growing. Trade in all major dairy products is expected to grow with the exception of WMP. The EU’s exposure to the world market through exports means that the trend in world market prices drives EU and UK prices. The Global Dairy Trade operated on behalf of Fonterra sets benchmark prices for the world market. The pattern of UK trade in dairy products is determined by a range of structural factors but within these constraints the UK’s export performance is considerable. Future prospects for global demand are strongly positive with prices expected to rise.

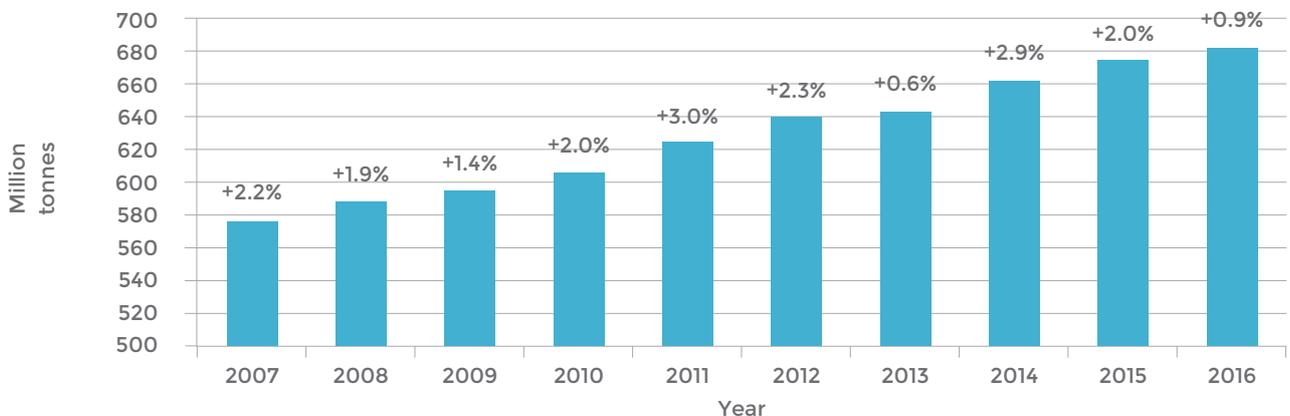
WORLD MILK PRODUCTION

Over the past nine years the average annual rate of growth has been 2.2%.

Around 38% of world milk output continues to be from the ‘informal sector’ (IFCN Dairy Report 2016) where milk produced by very small farmers is either consumed on the farm or marketed locally. The shift away from the informal sector towards milk being delivered to dairies for processing is one of the main underlying trends in the global dairy industry.

Production growth during 2016 is estimated at 0.9%, a lower rate than in previous years, with expansion in Asia, North and Central America, Europe and Africa offset to some extent by declines in Australia (hit by harsh price cuts and harsh seasonal conditions) and New Zealand. Most of the global increase originates in Asia, principally India, where production is forecast to expand by 4.2%, or 6.1 million tonnes, to 152 million tonnes, fuelled by rising incomes and increased urbanisation.

Graph 19 - World Milk Production (million tonnes)



Source: FAO

MILK PRODUCTION BY COUNTRY

Overall global production during 2017 is forecast to rise by 1.7%, slightly lower than the average over the past decade, with output

expected to expand in North and South America, show little change in Europe and Africa and decline again in Australia.

Table 22. Summary of Major Milk Production Forecasts for 2016 and 2017 (million metric tons)

	2014	2015	2016	% change 15/16	2017 forecast	% change 16/17
Australia	146,500	150,200	151,000	-4.8	9,100	-2.7
EU-28	37,250	37,550	36,020	+0.5	151,300	+0.2
China	21,893	21,587	21,224	-4.2	35,500	-1.4
New Zealand	93,485	94,619	96,343	-1.7	21,900	+3.2
United States	308,8	313,7	313,93	+1.8	98,112	+1.8
Total	28	56	7	+0.1	315,912	+0.6

Source: USDA

STRUCTURE OF THE WORLD MARKET

EXPORTS

Milk and dairy products are largely consumed in the region where they are produced. The tradable surplus for any country is generally a fraction of total production, with the exceptions of Australia and New Zealand. Consequently, the world market remains relatively small compared to total global production, but the strong level of demand from China contributed to the proportion of world output traded rising to 9%.

Table 23. Pattern of World Trade 2016 (volume of product exported and % of milk production)

	Volume of Product Exported (Million Tons Milk Equivalent)	% of Domestic Production
New Zealand	19.4	90
EU	18.5	11
USA	10.0	10
Belarus	3.9	55
Australia	3.3	34
Argentina	1.8	18
World	71.1	9

Source: FAO Food Outlook

IMPORTS

According to the FAO, global trade of dairy products is expected to record a second, successive year of modest growth in 2017, with renewed growth by China, following a significant drop in 2015, forecast to be one of the main drivers behind the rise. The EU, the United States, Argentina and Canada are the main countries also expected to see their exports rise.

With the exception of WMP, world trade in all major dairy commodity products is forecast to rise. SMP is expected to recover from a drop of -2.4% in 2016, returning to the pattern of growth that had been seen for the majority of the previous decade. Butter is forecast to see a second year of growth, reflecting strong demand (especially from China and Australia) and limited supplies. Cheese, however is expected to move higher to a record level,

with growth in imports expected from all major markets, in particular China, the Russian Federation, Australia, Japan and the United States. World trade in WMP is forecast to see a third year of decline, with a slight fall of -0.5%.

Table 24. Major Dairy Commodity Importing Countries in 2016

	Volume of Product Imported (Million Tons Milk Equivalent)	% of World Imports
China	12.0	17
Russian Federation	4.2	6
Mexico	3.7	5
Saudi Arabia	3.2	4
Algeria	2.6	4
Indonesia	2.5	4

Source: FAO Food Outlook

TRADE POLICIES AND DAIRY PRICES

The underlying rise in world dairy prices since 2007 has meant that EU and world market prices have now largely converged. This has meant that the trade policies (tariffs, export subsidies etc) pursued by the major producing regions have become less important in determining world prices. Whilst the USA and EU still maintain relatively high import tariffs, the relatively large exportable surplus generated by these regions, and the declining use of export subsidies, means that these regions are now directly subject to world market price trends.

A further WTO agreement on multi-lateral trade liberalisation for agriculture would have further reduced the importance of trade policies on the world dairy market, but the talks have stalled and it is uncertain when they will resume, if ever. However in December 2015 at the World Trade Organization's (WTO) 10th Ministerial Conference in Nairobi, members finally agreed that export subsidies for agriculture would be abolished.

This locks in the exposure of the EU to world market price trends because the EU's exportable surplus will have to continue to be priced competitively with the world market, which will influence the price prevailing throughout the bloc. Continued exposure to the world market will bring with it further price volatility compared to the stability previously created by the CAP.

However, at the lower bounds of price volatility this situation is qualified by the willingness of the EU to sustain EU prices through the intervention system. By placing a floor price on EU exports the intervention system also acts to limit the fall of world prices. The cost of playing this role for the EU has been the accumulation of 350,000 tonnes of SMP in public stocks during the recent downturn. So far the Commission has enjoyed little success in releasing the stock back on to the market.

Graph 20 – World Dairy Commodity Prices



Graph 21 – EU and World Market Prices

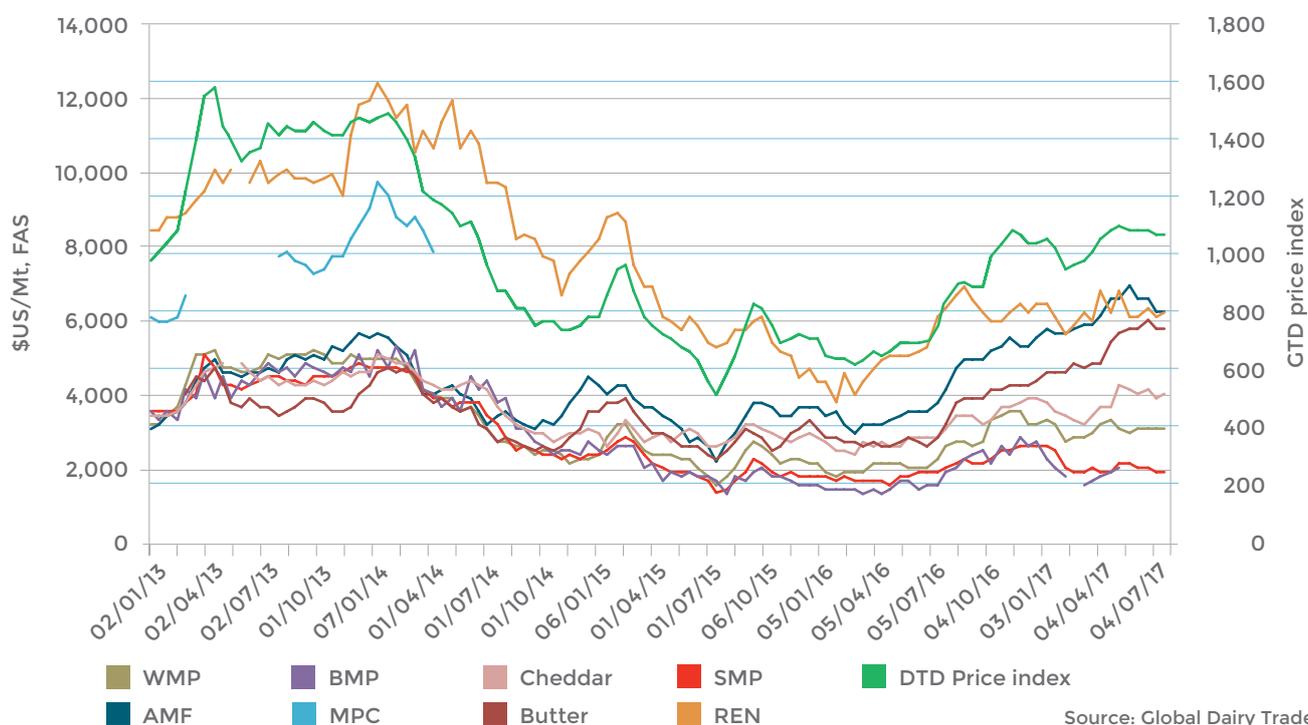


WORLD MARKET PRICES

The electronic auction system for dairy products, operated by Global Dairy Trade on behalf of Fonterra, is seen to set the benchmark price for world dairy products. The auction started with Whole Milk Powder in July 2006 and since then the range of products offered has been expanded with the addition of Anhydrous Milk Fat (AMF), Skim Milk Powder

(SMP), Butter Milk Powder (BMP), Milk Protein Concentrate (MPC), Rennet Casein, Cheddar Cheese, lactose and butter. It was announced in April 2017 that the online dairy trading platform, GDT Events, has passed the milestone of US\$20 billion cumulative value of products sold and, now, in its 9th year, has traded more than 5.8 million metric tonnes of dairy ingredients.

Graph 22 - Fonterra Auction System Results



FUTURES CONTRACTS FOR DAIRY

Price volatility means that there is growing interest in the development of futures markets for dairy products to help the industry manage price risk.

Futures contracts for dairy products are already well established in the USA on the Chicago Mercantile Exchange. Two European exchanges have launched futures contracts for dairy products, but at present only the Eurex exchange is showing any degree of liquidity. In addition significant activity in the EU for Over The Counter (OTC) products for dairy

price risk management provided by financial institutions has been reported. The Fonterra auction has also allowed the New Zealand stock exchange to develop futures contracts for dairy products.

UK dairy companies are developing farmer contracts that provide the option of greater price certainty by linking into futures markets. However it is recognised that futures are not a panacea and represent one strategy amongst many for addressing price risk.

UK DAIRY TRADE

UK dairy companies export to the world market, and in particular the industry in Northern Ireland is heavily engaged in doing so.

The actual pattern of UK trade in dairy products is shaped by the following;

- UK milk production is insufficient to meet domestic consumption;
- Fresh pasteurised liquid milk cannot normally be exported competitively;
- Sales of high value dairy products in Great Britain are focused on the market for direct consumption by domestic shoppers;
- A portion of the butterfat generated from the manufacture of low fat milks is exported from the UK as bulk cream;

- Raw milk is exported from Northern Ireland to the Republic of Ireland, and a range of milk powders is exported to destinations within the EU and to third countries.

These structural factors mean that the UK's exports inevitably tend to be of lower unit value than imports into the UK. Nevertheless, given that liquid milk is not readily tradeable, the export performance of the UK dairy industry is considerable. Around 20% of UK raw milk production is exported in the form of processed dairy products.

Both in respect of imports and exports the EU is the UK's major trading partner.

Table 25. UK Dairy Imports in 2016 – tonnes

Product	EU	Non-EU	Total
Liquid milk	116,385	11	116,395
Cream	27,770	0	27,770
Skimmed milk powder	36,515	1	36,515
Whole milk powder	23,441	1	23,441
Evaporated and condensed milk	44,924	1	44,924
Yogurt	144,329	1,364	145,693
Butter	64,821	2	64,823
Cheese	465,960	6,025	471,984
of which processed cheese	54,516	15	54,532
of which Cheddar	91,866	4,584	96,449

Source: HMRC

Table 26. UK Dairy Exports in 2016 – tonnes

Product	EU	Non-EU	Total	% of UK production
Liquid milk – bulk	534,246	4,783	539,029	3.6
Liquid milk – packaged	16,149	65,470	81,618	1.2
Cream	20,195	744	20,939	13.8
SMP	31,116	9,809	40,924	89.2
Whole milk powder	49,929	23,317	73,246	117.5
Evaporated and condensed milk	16,657	2,437	19,094	8.2
Yogurt	19,417	2,006	21,422	9.1
Butter	33,867	7,898	41,766	11.5
Cheese	125,806	34,855	160,661	32.6
of which processed cheese	10,617	456	11,073	47.8
of which Cheddar	53,805	21,511	75,316	18.5

Source: HMRC

FUTURE GROWTH PROSPECTS FOR THE WORLD MARKET

The growth prospects for dairy are strongly positive. Demand is being driven by population size and economic growth. There is also a strong desire on the part of the dairy industry

to move production into new and innovative products that respond to new consumer needs and grow value to the benefit of the whole supply chain.

CONSUMPTION GROWTH

World consumption of fresh dairy products and processed dairy products is expected to grow annually by 2.1% and 1.7% over the next decade.

Developing countries are expected to consume around 67% of fresh dairy products, most of which is consumed in Asia, with this share rising to 73% over the decade. In

developed countries, increasing per-capita consumption of processed dairy products, mainly cheese and WMP, is expected and at higher rates than over the past decade.

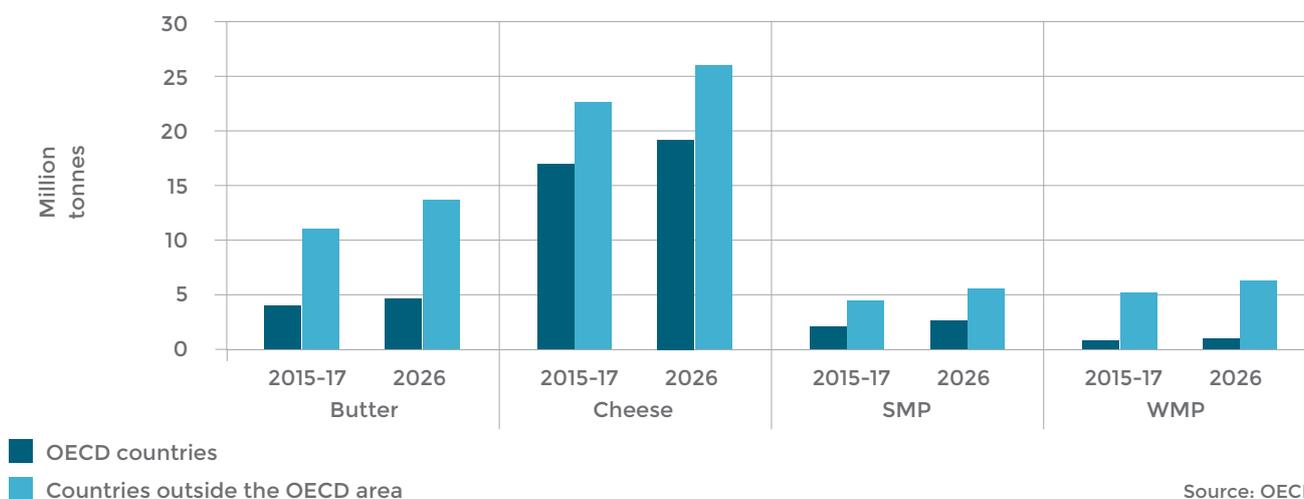
Consumption of dairy products in developing countries is forecast to increase on average at around 2.0% whilst, in developed countries, the rate is projected to increase on average by 1.2%.

Table 27. UK Dairy Imports in 2016 - tonnes

Product	EU	Non-EU	Total
World	44,269	51,437	16.2
OECD	24,346	27,306	12.2
Non-OECD	19,923	24,131	21.1
EU-28	12,931	14,097	9.0
United States	6,802	8,035	18.1
Japan	574	562	-2.2
China	2,668	3,260	22.2
India	4,518	5,767	27.6
Australia	454	503	10.8
Mexico	1,285	1,446	12.5
Sub-Saharan Africa	814	1,051	29.1
Algeria, Egypt	1,260	1,578	25.2
Brazil	1,697	2,043	20.4
Russia	1,508	1,711	13.5
Ukraine	291	318	9.1

Source: OECD

Graph 23 - Outlook for dairy product consumption



Source: OECD

According to the OECD-FAO Agricultural Outlook 2017-2026 it is expected that real price of butter will decrease slightly over the reference period, while those of SMP,

WMP and cheese will increase. Prices will be supported by strong demand for milk and milk products but nominal prices are not expected to return to the peak levels of 2013.

Graph 24 - Trends in World Dairy Prices



DAIRY UK IS CALLING ON THE GOVERNMENT TO;

- Work collaboratively with the industry to Facilitate the industry in exploiting export opportunities around the world;
- Ensure that the UK’s reputation for food safety is properly safeguarded and enhanced;
- Streamline the administration of export health certificates by developing a system based on authorisation of processing plants, instead of the current system of authorisation by consignment;
- Consolidate the administration of the diverse range of export certificates required by exporters into a single ‘one stop shop’;
- Ensure foreign inspection tours are adequately resourced and that any resulting issues identified are addressed in a timely manner;
- Ensure that any FTAs create genuine market access opportunities for the UK dairy sector whilst ensuring that it is not subject to unfair import competition in its own domestic market.



13. NUTRITIONAL EDUCATION AND PROTECTION

NUTRITION EDUCATION AND PROTECTION

The Dairy Council is the only organisation in the dairy industry with a dedicated remit of protecting and promoting the human health benefits of dairy products.

The Dairy Council places a strong emphasis on providing information to health professionals which both promotes dairy nutrition within a healthy balanced diet and active lifestyle and dispels misconceptions around the role of dairy in the diet.

In addition to its work with health professionals, the Dairy Council provides evidence based nutrition information to consumers and is the only organisation within the dairy industry which is certified to carry the Information Standard on the materials it produces for the public.

The Information Standard was developed by the Department of Health in response to the large amount of health and care information available to the public and patients. Any organisation which achieves certification under the Information Standard's rules has undergone a rigorous assessment to check that their information production process generates high quality information that the public can trust.



DAIRY NUTRITION AND HEALTH: TALKING TO THE PROFESSIONALS

The Dairy Council operates an extensive outreach programme for health professionals and those involved in industries allied to health. In the last year it has disseminated information on a diverse range of topics including: healthy aging, saturated fat, obesity, iodine and sport to name but a few.

Dissemination was achieved by;

- Organising conferences all over the UK for health professionals and health writers;
- Presenting within academic departments;
- Attending health related trade shows;
- Publishing reports and papers;
- Publishing newsletters.



DAIRY NUTRITION AND HEALTH: TALKING TO THE PUBLIC

The public wants information it can rely on. The Dairy Council has a range of publications which span all life stages and provide accurate information on;

- diet in pregnancy and early childhood;
- calcium;

- iodine;
- the composition of dairy foods;
- dairy and body weight;
- saturated fat;
- milk; cheese;
- yogurt.



TALKING TO TEENAGERS VIA SOCIAL MEDIA

Milk It For All It's Worth is The Dairy Council's social media based campaign for active young people. With over 230,000 YouTube views, 11,000 Facebook likes and 10,000 Twitter followers this campaign promotes the benefits of drinking milk and being physically active to teenagers.



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