

# **South West Wales Dairy Processing Feasibility Study**

## **Final Report**

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**BWYD A DIOD CYMRU  
FOOD AND DRINK WALES**



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## Executive Summary

Brookdale Consulting was commissioned by the Welsh Government to assess the feasibility of establishing additional dairy processing capacity in South West Wales.

The feasibility study was a recommendation of the Review of the Dairy Sector in Wales<sup>1</sup>, which stated that a *'feasibility study should be undertaken to evaluate the potential of developing a market driven milk processing facility in South West Wales.'*

The feasibility study involved a review of current and future dairy market trends at consumer level; a summary of the primary production situation; and assessment of current and future processing activity in South West Wales. In-depth consultations were held with existing dairy processors, potential processors and a range of stakeholders including the Farming Unions. The results were analysed and brought together with a series of recommendations for the Welsh Government.

The feasibility study has been undertaken at a time of extreme difficulty for the dairy sector due to:

- **Increasing production** - the ending of EU dairy quotas, good climatic conditions and optimism about the future demand for dairy products has led to a rapid expansion of dairy production.
- **Global shocks** – an unexpected slowdown in the Chinese economy and its demand for dairy imports, plus a Russian trade embargo have combined to reduce demand as supply has increased. World dairy prices have collapsed. As a result, prices offered to farmers have collapsed.
- **UK competition** - Difficult conditions have been further compounded by increased competition in the UK retail market, plus the tendency of retailers to use dairy products as Key Value Items to attract shoppers in. The strong pound has affected the competitiveness of UK exports.

The feasibility study does not provide any short term solution to the current low prices experienced by many dairy farmers.

A further issue is that South West Wales is considered to be distant from the market such that processing investment for liquid milk products tends to be favoured closer to the main areas of population.

Despite all of the issues above, the study has highlighted the suitability of South West Wales for dairying given its climate, grass growing ability, dairy production expertise and many well capitalised farms. The area has critical mass for dairy production at scale.

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<sup>1</sup><http://gov.wales/topics/environmentcountryside/farmingandcountryside/farmcountrypublications/independent-review-dairy-sector/?lang=en>



From a primary production point of view, the sector is on a knife edge with producers seeking market signals to enable them to decide if there is a future in dairying or whether they should exit the industry.

On this front, the feasibility study does provide some answers. Despite difficult circumstances, there is considerable optimism amongst processors and a desire to expand with plans for a potential 700-1,000m litres of processing capacity identified.

There was little interest in creating a new high volume plant or 'smart' plant from a greenfield site due to the high capital costs (at least £80m for a 300m litre plant).

The dairy market trend information (See Section 2) highlights a range of growing opportunities in branded products and market innovation. South West Wales is less exposed to these opportunities than other areas due to its distance to market and the nature of current processing which is extensively in cheese. These are market opportunities that dairy processors in South West Wales should consider.

The processing investments proposed will increase capacity in cheese and other products into a range of markets including export; so exposure to commodity price shocks is likely to continue. There is no easy answer to this situation.

Some expansions require grant funding to proceed. We anticipate that at least 350m litres of additional milk could be processed with modest investment. This would significantly increase milk demand within the South West Wales. Further expansion will require more significant investment and government support.

We estimate the economic impact of dairy farming in South West Wales as £271m<sup>2</sup>.

The processing expansions identified could result in an additional 260-776 employees in Wales generating turnover of £92.6-£277m with wider impacts of £64.8m-£194m on the local economy through household and supply chain effects<sup>3</sup>.

Construction impacts would potentially add a further 33-523 employment years of construction work depending on scale.

The optimism of processors is to be welcomed along with their desire to process increased volumes of milk. With support, the processing capacity of the region can be increased substantially which will, in turn, improve the long term sustainability of the sector.

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<sup>2</sup> Measured in Gross Value Added, the Government's preferred measure.

<sup>3</sup> The wider impacts of processing include some of the dairy farming impacts so cannot be added to them.



## 1. Introduction

Brookdale Consulting was commissioned by the Welsh Government to assess the feasibility of establishing additional dairy processing capacity in South West Wales.

The feasibility study was a recommendation of the Review of the Dairy Sector in Wales<sup>4</sup>, which stated that a *'feasibility study should be undertaken to evaluate the potential of developing a market driven milk processing facility in South West Wales.'*

The feasibility study involved a review of current and future dairy market trends at consumer level; a summary of primary production capacity and growth prospects; and assessment of current and future processing activity in South West Wales. In-depth consultations were held with existing dairy processors, potential processors and a range of stakeholders including the Farming Unions. The results were analysed and brought together with a series of recommendations for the Welsh Government.

The feasibility study has been undertaken at a time of extreme difficulty for the dairy sector due to:

- **Increasing production** - the ending of EU dairy quotas, good climatic conditions and optimism about the future demand for dairy products has led to a rapid expansion of dairy production.
- **Global shocks** – an unexpected slowdown in the Chinese economy and its demand for dairy imports, plus a Russian trade embargo have combined to reduce demand as supply has increased. World dairy prices have collapsed. As a result, prices offered to farmers have collapsed.
- **UK competition** - Difficult conditions have been further compounded by increased competition in the UK retail market, plus the tendency of retailers to use dairy products as Key Value Items to attract shoppers in. The strong pound has affected the competitiveness of UK exports.

This report presents the findings and is set out as follows:

- Section 2 provides an overview of consumer trends in dairy.
- Section 3 provides a high level overview of primary production in West Wales.
- Section 4 provides an overview of typical processing plant costs and the economic impact of the sector.
- Section 5 sets out the processing situation and future intentions.
- Section 6 provides conclusions and recommendations.

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<sup>4</sup><http://gov.wales/topics/environmentcountryside/farmingandcountryside/farmcountrypublications/independent-review-dairy-sector/?lang=en>



## 2. Consumer Trends in Dairy

The latest Kantar data (May 2015) shows that the Welsh dairy retail market is worth £623m, equivalent to 5.9% of the GB market of £10.5bn. This section considers GB trends as a backdrop for the dairy sector in Wales.

Per capita consumption of milk and milk products has fallen over the past decade due to a reduction in household purchases of whole milk. Within this overall picture, there has been strong growth in household consumption of cheese, cream, skimmed milk and other dairy products.

Over the last year, the dairy consumer market has seen value decline despite volume growth. The current low price situation is compounded by a shift in UK retail structure with the discounters leading a new agenda built primarily on price.

Table 2.1 summarises key trends within sub categories and innovation taking place.

**Table 2.1 Dairy sub categories and innovation**

Category	Role Of Brands	Added Value Innovation
<b>Milk</b> Milk is a Known Value Item (KVI) in retail, and as such has been at the heart of retail price competition. Retail price for milk has fallen by 23% in the last five years. With GB retail sales of £3.5bn, accounting for 33% of the sector. Milk and cream is the largest sub sector.	Low, predominately an own label market.	The main brand is Cravendale which though large is still less than 5% of the market and has taken years to develop even with a marketing investment of several million pounds this year alone. Others in the market include Lactose Free and nutritionally enhanced milk for children such as Big Milk and A2.
<b>Butter (spreads and margarine)</b> Retail price of block butter has dropped 26.8% in the last 5 years.  GB butter sales are £715m, up 2% by value, and 7% by vol. (unit price down 5%)	The sector is highly branded, with many in the sector featuring within the UK Top 100 brands.	Consumer shift towards butter has seen Unilever and Bertolli launching spreads with butter. Lurpark, Clover, Flora and Anchor are all worth more than £85m, and account for £700m or 52% of the butter, spreads and margarine market (BSM).



Category	Role Of Brands	Added Value Innovation
<p><b>Cheese</b></p> <p>Worth £2.8bn, and 26% of the dairy retail market. Kantar data show that it is flat in value, volume and price per unit.</p> <p>Continental cheese has seen strong growth and with sales of £420m represents 15% of the cheese sector.</p>	<p>Brands have gained significant share within the market. Market leader is Cathedral City and a plethora of brands have followed suit</p>	<p>Expanding brands have allowed segmentation of ranges to develop more convenient solutions such as snacking cheese, pre-grated, pre-sliced. These innovations have added value and driven usage.</p> <p>Developing cheese as an ingredient as opposed to just a cheese board occasion has seen some types grow. Philadelphia is a great example of this, with ingredient-based consumer advertising driving the brand to a £100+m.</p>
<p><b>Yoghurt</b></p> <p>Yoghurt and fromage frais worth £1.7bn, and 16% of the dairy market.</p>	<p>Sector has evolved greatly and is dominated by large brand players, with Muller, Activia and Yeo Valley worth £700m alone (Nielsen).</p>	<p>Trends that have emerged, and each translated into sizeable market segments include healthier (St Ivel Shape, Probiotics, Healthier By Nature Organics such as Yeo Valley and Rachel's), indulgent (Muller Fruit corners), Kids (Petit Filous). We are also seeing crossover within groups, such as Danone launching Activia for kids in a drink format.</p> <p>Most recent trend is the launch of Greek style yoghurts, which have taken significant category space in the US. Seen as indulgent, but low fat and sugar, these products are ticking a lot of boxes and show little sign of slowing.</p>
<p><b>Flavoured Milk and Yoghurt Drinks</b></p> <p>A relatively small segment, worth £388m with flat value and down in volume sales.</p>	<p>A predominately branded sector with Frijj the biggest brand.</p>	<p>There are two streams of activity - protein drinks and premium milk drinks.</p> <p>Protein drinks have seen growth of 20% last year (Kantar).</p> <p>Premium milk drinks such as the 'Collective' yoghurt drinks and Yazoo yoghurt smoothies.</p> <p>The attack on sugar in the soft drink market could see further growth here, in particular evidenced by the US launch of Coca Cola Fairlife, a premium milk drink with lower sugar, greater filtration, higher protein and calcium than</p>



Category	Role Of Brands	Added Value Innovation
		standard milk and also sourced from high welfare farms.
<b>Ice Cream</b>  The sector is worth £871m, and growing by 4% in value by flat in volume.	The market is heavily brand dominated. Magnum is the market leader. Multiples are now investing heavily in their own brand proposition and these are growing significantly.	A number of the confectionary/biscuit brands have developed into ice cream including Mars, Rowntree, and Oreo.  Lower sugar and fat are emerging trends, as well as non-dairy substitutes.

As captured above, product innovation and brand development within the dairy industry is dominated by large businesses, investing considerable resources in consumer insight and development. Businesses invest heavily in advertising and promotion in order to help realise success. The cost of development means that in general only 'strong bets' get launched by major players. These companies also dominate the retail conversations, which together with retailers seek to reduce the number of lines and ranges to improve efficiency adding further barriers to smaller suppliers.

There are some big consumer trends in the UK that companies with a real point of difference can exploit, but these businesses take time to grow and develop segments. Developing a big brand, in a small time frame, is unlikely. However, there is scope to see indigenous businesses grow and take advantage of these opportunities. Doing so would help to reduce the exposure of South West Wales to commodity markets.

Opportunities for the Welsh dairy industry to exploit across sub sectors include:

- **Supporting British farmers**, there are schemes, but there is a complete lack of clarity for consumers as to whether a product has fairly compensated the farmer. Even farmer co-operative businesses do not have a clear position about whether pricing is above cost. The Milk for Farmers brand (Morrisons) is an interesting idea, but this may be a start of a whole new proposition that could work across dairy.
- **Health** is a trend that is growing but also fragmenting into a number of sub sectors such as 'less bad for you', 'free from' improving your wellbeing etc.





The yoghurt sector has embraced a lot these trends but it seems that other sectors have not fully exploited all the avenues available. Protein supplements are an expanding segment.

- **Reduced sugar content** is being targeted in every industry and whilst milk products have lots of good ingredients, lactose in milk contributes to consumers' sugar intake. Semi-skimmed milk is 5% sugar.
- **Naturalness and Simplicity** - understanding more about where food and drink comes from; how processed it is; the welfare of the animals and environmental and ethical impact of the products being eaten. Whilst organic in this sector ticks a number of boxes in this trend, brands such as 'The Collective' are driving a new agenda.
- **Rise in regional and nationalism** - in Wales it is likely that, given a choice, consumers would prefer to purchase primary products produced and processed in Wales. This can provide a strong point of differentiation when combined with other innovation. However, the Welsh market is limited in value – liquid milk and cream is £209m



### 3. Dairy Production Overview

UK dairy production has increased its concentration in the west – particularly West Wales and South West England which have climatic advantages, with good grass growth enabling extensive production systems.

Wales accounted for 13% of UK dairy production at 1.8bn litres in 2014/15<sup>5</sup> while South West Wales accounts for 62% of Welsh production at around 1.15bn litres and 1,000<sup>6</sup> producers in August 2015.

With the removal of dairy quotas, and favourable global trade, production has increased in Wales – up 28% since 2008/09<sup>7</sup>. Production has become even more concentrated with the number of producers falling, the total number of cows falling, but production increasing as the sector re-structures.

Whilst the number of producers is expected to continue to fall, the Welsh industry has set out its aspiration to increase production to 2bn litres by 2020.

Current low milk prices are seriously testing this aspiration and are unsustainable, with many farmers producing milk below the cost of production. However, research by AHDB-Dairy<sup>8</sup> shows that factors such as the level of optimism and family succession have a stronger influence on a farmer's investment decision than short term factors affecting profitability.

The positive long term forecasts for global demand plus optimism amongst processors in terms of expansion should give confidence to dairy farmers in South West Wales that there is a future for them. The challenge is to ensure adequate returns are passed back to producers.

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<sup>5</sup> Rural Payment Agency (RPA) 2014/15

<sup>6</sup> AHDB

<sup>7</sup> RPA

<sup>8</sup> The Structure of GB Dairy Farming- What Drives Change, January 2013 Andersons Centre & Nottingham University For AHDB Dairy.



## 4. Typical Processing Plant Costs and Economic Impacts

As part of the feasibility we investigated the costs of a typical processing plant from industry sources. We used a medium scale plant of 300m litres as a benchmark as this represents a third of current production in South West Wales and could therefore achieve market share.

Costs are set out below and come to £73m before installation of processing lines and land purchase. This suggests a total investment of over £80m would be required<sup>9</sup>.

**Table 4.1 Typical costs of a dairy processing plant (300m litres)**

	Area	Cost per sq m	Total Cost
Ground works/infrastructure	50,000	£200	£10m
Building	21,600	£2,000	£43m
First floor	10,000	£2,000	£20m
Total before process line installation			£73m
Process lines e.g. liquid milk, cheese, butter			£1m per line

In addition, we investigated the economic impacts of the dairy processing sector and primary production under the following headings:

**Dairy farm production impacts** – from the Farm Business Survey we estimate gross value added (GVA) as £144,000<sup>10</sup> per farm. GVA is the Government's preferred measure of economic activity. Given the 1,000 dairy producers in South West Wales<sup>11</sup> this would suggest GVA of the sector of £144m or £1,280 per hectare.

**Dairy farm multiplier impacts** – dairy farms make significant purchases which help sustain jobs in rural areas. Applying a GVA multiplier for agriculture<sup>12</sup> suggests that these farms have a wider total GVA impact of £271m.

**Dairy Processing impacts** – Assuming that the average processor selling price is 26.45ppl<sup>13</sup>, the increased production of 350m litres of milk would generate additional turnover of £92.6m while an expansion to the top of the range (1,047m litres) would generate £277m. Applying the turnover per employee figure (£357,000) from the

<sup>9</sup> Muller Wiseman plant in Bridgewater (500m litres) reported as costing £80m

<http://www.foodprocessing-technology.com/projects/wisemandairy/>

Arla Aylesbury Plant reported as costing £150m.

<http://www.hcdgroup.co.uk/casestudy/arla-aylesbury/>

<sup>10</sup> Farm Business Survey 2013/14 for Welsh lowland dairy farms taking profit of £108,074, paid labour of £25,251 and unpaid labour of £10,277 making a total of £144,602.

<sup>11</sup> AHDB 2015

<sup>12</sup> Office of National Statistics GVA multiplier for agriculture is 1.884.

<sup>13</sup> Based on farmgate price of 22ppl according to consultees and margin of 4.45ppl derived from DairyCo 2013-14 data.



ONS business survey to this would suggest that processing expansion would result in an additional 260-776 employees in Wales, though the likelihood of achieving the full expansion of an additional 1,047m litres may be low.

**Dairy Processing Multiplier Impacts** – the South West Wales dairy processing sector has a large impact on the local economy as its spending benefits suppliers locally. The WERU Input Output model estimates that the output multiplier effect is 1.70, one of the highest in the food and drink sector. The economic multiplier effect of increasing output by £92.6m would add a further £64.8m<sup>14</sup> to the local economy through household and supply chain effects. An expansion to the top of the range would add a further £194m.

**Construction impacts** – the proposed processing investments suggest 33-523 years of construction work. Given that developments will be phased over 3 years, this would suggest an average of 11-174 construction jobs per annum over each of the three years.

**Table 4.2 Summary of Potential Economic Impact of Dairy Processing Expansion.**

	350m Litres Capacity	1,047m Litres Capacity
Direct Employment	260 Employees	780 Employees
Construction Employment (Temp for 3 years)	11 Employees per annum	170 Employees per annum
Additional Economic Multiplier Effect	£65 Million to the Welsh Economy	£194 Million to the Welsh Economy

Source Brookdale Consulting

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<sup>14</sup> Derived from WERU Input Output Tables, 2007. Output multiplier of 1.70 for Dairy.



## 5. South West Wales Processing Situation

Within Wales, the sector is dominated by cheese manufacturers, accounting for half of all dairy processing businesses, and almost 90% of milk retained in Wales. A lot of the milk produced in South West Wales is bought directly by processors located in England – around half in recent years. The major GB liquid milk processors are based outside of Wales, and only 8% of milk processed in Wales is for the liquid market.

The milk buyer market in Wales is very active, with a number of diverse buyers, though we understand the situation can change rapidly depending on milk availability elsewhere. Plentiful availability elsewhere means fewer buyers in South West Wales.

Table 5.1 sets out the figures for milk purchases. These figures do not cover secondary purchases, where processors may buy from brokers. The two largest UK processors, Arla and Muller Wiseman, buy a low volume from Wales relative to the overall scale of their purchases which are focused around their factories. South West Wales is a considerable distance from these major processing sites.

The largest processor in South West Wales is **First Milk** which produces cheddar at its Haverfordwest plant.

**Glanbia** is an important buyer with a mozzarella plant located in North Wales.

**Muller Wiseman's** recent purchase of **Dairy Crest's** liquid milk business has increased its exposure to South West Wales.

**Nijjar's** presence in the West Wales market is to secure milk for its Freshways liquid milk brand.

**Meadow Foods** is a substantial buyer in South West Wales.

**Table 5.1 Activity of Main Milk Buyers in UK and Wales 2014/15**

Milk Buyer	Proportion of Welsh Milk Field Purchases ( % of Total Welsh Milk Production)	Dependency on Welsh Milk Field (Welsh as Percentage of Total Milk Purchases)
Arla	11%	6%
Muller Wiseman	9%	9%
Dairy Crest	11%	13%
First Milk	20%	32%
Glanbia	11%	98%
Nijjar	8%	43%
Meadow Foods	7%	36%

Source: RPA



In addition to the buyers above, there are several other processors based in South West Wales that are growing in significance and consultations were held with several of these.

Low prices paid to farmers are a feature of the current situation. Costs of production vary for different farms and autumn calving is a more expensive operation due to the need to buy in winter feed. While many farms are receiving a price below the cost of production, some farmers are receiving an acceptable price for their milk. Knowing and understanding the different contracts operated by various buyers can be difficult<sup>15</sup> but the outcome can have significant impact on farm level profitability.

There has been much consolidation within the dairy processing sector, with mergers and acquisitions and investments in large scale manufacturing sites. Whilst the liquid milk market remains critically important to GB's large processors, there has also been a notable move by processors to broaden their portfolio's and markets, ensuring their competitiveness in a number of areas, including international trade.

As companies become increasingly international in their focus, the competitiveness of their businesses becomes more important. Global wholesale prices of milk, and commodity pricing (Cheddar, Cream, SMP, WMP) will have an increasing influence on UK farmgate pricing. Companies wishing to succeed in these markets must secure cost effective (competitively priced) milk as well as achieving efficiencies in their own processing capabilities. Investment in new facilities, joint venture global contracts, increased branded activity and increasing supply of contract milk are all signs of the industry looking to gain greater control over outputs and margins.

The consultations suggested there was little interest in creating a new high volume plant or 'smart' plant from a greenfield site due to the high capital costs (at least £80m for a 300m litre plant).

Nonetheless, there is substantial interest in growing processing capacity in South West Wales, to meet strong growing end markets including export.

The study identified processing expansion potential of 700-1,000m litres, some seeking grant funding from Welsh Government. This would significantly increase milk demand within the South West Wales milk field which would in turn benefit primary producers.

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<sup>15</sup> DairyCo analysis shows that all dairy farm types and sizes can be profitable (i.e. a large operation is not necessarily more profitable than a small one). It is likely that the most profitable are those who are best able to interpret and respond to the various bonuses and penalties within dairy contracts and adjust their production or move buyer to respond.



## 6. Conclusion and Recommendations

In reviewing the feasibility of additional processing capacity in South West Wales, the following conclusions can be drawn:

- South West Wales is an increasingly important producer of milk within the GB context, with total supply increasing and an aspiration to reach 1.25bn litres.
- South West Wales has competitive advantage in milk production but a shortage of processing capacity in the region. It is also distant from market and milk buyers face the choice of processing in the region or transporting liquid milk out of the region for processing closer to final markets.
- The current global dairy commodity crisis has hit the production sector hard and left many farmers wondering whether to continue.
- The feasibility study suggests that a new facility on a greenfield site is unlikely to be affordable in the short term due to the high capital costs.
- It is possible that a large inward investment is made but the challenges of locating in South West Wales are lack of proximity to retail distribution, large conurbations, relatively poor connectivity and a risk of displacement of existing processors in the region.
- However, there are strong expansion plans from existing processors which could, in the short to medium term, see 350m litres of additional processing capacity with modest government support. In the longer term this figure could be much higher but would require more substantial government support.
- This expansion is likely to have limited displacement within Wales – actual levels of displacement will depend on the ability to sign up farmers to contracts.
- The proposed increases in processing capacity are based on identified market demand, are largely complementary with a strong export focus but mainly in dairy commodities. This means that South West Wales will continue to be exposed to global commodity shocks. There is no quick or easy answer to this situation.
- At the retail level the strongest growth is in innovative dairy brands. South West Wales is less exposed to the most innovative dairy processors but does have processors with strong innovation in both commodities and other products.
- It is important to recognise that efficient commodity production is a valid route to market and can be profitable for both farmers and processors.
- The economic impact of dairy farming in South West Wales is £271m. The processing expansions identified could add 206-776 jobs, £92m-£277m of turnover and £65m-£194m of wider impacts (including on primary production, which accounts for around 60% of dairy processing sector purchases).

We make the following recommendations:



- Welsh Government should continue to support and prioritise indigenous dairy businesses.
- Welsh Government should also review inward investment opportunities for dairy processors in Wales.
- Support should be focused on those who drive innovation in production, new product development, marketing and export.
- Support should be provided in both capital terms, but also by helping to ensure that companies understand the changing consumer market, make use of emerging opportunities and harness the support available within Wales through the Welsh Government, Dairy Development Centre, Innovation Centres, AHDB and universities.

The optimism of processors is to be welcomed. With support, the processing capacity of the region can be increased substantially which will, in turn, improve the long term sustainability of the sector.