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Report

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**Put a label on it: why the future
of milk is a branded one**

Tom Levitt

July 2018

NUFFIELD UK

This report is written for the entire dairy industry: dairy farmers, processors, companies, advisors, retailers, students, researchers and lecturers.

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A

Nuffield (UK) Farming Scholarships Trust Report



*“Leading positive change in agriculture.
Inspiring passion and potential in people.”*

Date of report: September 2018

Title	Put a label on it: why the future of cow’s milk is a branded one
Scholar	Tom Levitt
Sponsor	The Trehane Trust
Objectives of Study Tour	To understand how the market and consumer attitudes to cow’s milk are changing. And what the sector can do best to adapt.
Countries Visited	United States, Netherlands, Sweden, Denmark, Switzerland, Ireland

Messages

- Milk has lost its monopoly on our eating habits
- Standardisation has shorn it of value
- Public expectations are getting ever harder for farmers to meet
- But the market for milk is evolving, not disappearing
- A new approach by entrepreneurs and successful brands can create value in the liquid milk category
- Brands are better at directly appealing and adapting to individual consumer preferences, rather than a generic industry approach to promote milk as a basic food

EXECUTIVE SUMMARY

Despite cow's milk being consumed by 87% of the population in the UK there are concerns that it is vulnerable to falling out of fashion with a younger generation. It's the same story in the US where generic marketing tactics like the long-running 'Got Milk?' campaign has failed to stop per capita consumption of cow's milk in the US falling by one-third since the 1970s. In contrast, sales of plant-based 'milks' in the US were worth an estimated \$2 billion in 2017, accounting for around 10% of the total milk market. Several major dairy companies have already started producing plant-based 'milks' or bought into non-cow's 'milk' companies.

The purpose of this study was to understand what constitutes a viable future for the cow's milk – as opposed to the wider dairy - category. Travelling around major milk consumer markets in North America and Europe and interviewing key stakeholders and consumer experts reveals a sector that has lost its monopoly, with eating habits, lifestyles, innovation and supermarket shelves no longer wedded to milk. Consumers have also long lost their connection to dairy farming and struggle to comprehend the reality of the industry today with bucolic childhood images.

The biggest failure with the marketing of milk is how undervalued liquid milk is by the market place. Supermarkets have long used milk as a low margin product or even loss leader and that shows no signs of changing, with Walmart openly talking of being able to cut milk production costs further in the US. This focus on price and standardisation has created a race to the bottom which in turn is holding back innovation.

The key recommendation of this report is the importance of investing in the emerging branded market, which accounts for less than 20% of all UK milk sales but is driving growth. The new barista milks, kefir drinks and other drinkable milk products providing a specific taste, health or nutritional benefit are clearly capturing the changing eating habits, interests and lifestyles of consumers. Some are not even marketing themselves as a milk product. If cow's milk can define its points of difference, the liquid milk category still has a future to be more than an undervalued commodity, even if the word itself becomes redundant.

Although some producers have got involved in direct selling, building a successful brand is a significant time and financial commitment. Alternatively, some are collaborating with businesses and entrepreneurs in the supply chain to deliver branded milk products. Dairy producers may prefer to rely on retailers, but retailers have done little, or been unable, to significantly improve the value of milk. And, as they have shown with their heavy promotion of 'milk' alternatives, their loyalty is to consumers, not cow's milk producers. In the long term, dairy producers should be open to seeking partners who have other supply chain skills, expertise and contacts.

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DISCLAIMER

The opinions expressed in this report , where not attributed to anyone, are my own and not necessarily those of the Nuffield Farming Scholarships Trust, or of my sponsor, or of any other sponsoring body.

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1. Personal Introduction



Tom Levitt, author of this report, being interviewed on BBC Countryfile

My farming story started comparatively late in life at the age of 23. After graduating from York University with a History degree and then an MA in Journalism at the University of Central Lancashire, I started out as a journalist at the Farmers Guardian in 2004. Since then I've worked as an editor and journalist at The Ecologist, CNN and MSN before, most recently, working at the Guardian up until last year. It was my early reporting days at Farmers Guardian that ignited my interest in food and farming and has since led to my journalism appearing in a wide variety of publications including Country Life, Earth Island Journal, The Financial Times, Huffington Post, the Independent, The New Agriculturalist and Vice media.

Wanting to gain more knowledge and understanding about our food system, I completed an MSc in Food Policy (with distinction) at City University in 2015. Since then I've been a guest lecturer on food at the Centre for Alternative Technology in Wales, a speaker and chair at the Edinburgh Science Festival, a chair for debates on food policy issues for The Guardian, and a guest interviewee on BBC Countryfile and BBC Radio talking about food and farming issues.

I left the Guardian as a full-time staff member in 2017 after relocating outside of London with my wife and son to Cheshire. After growing up in Cornwall and Lancashire, it was never my intention to spend so long (more than a decade) in London. Ironically, it was farming that took me to the city as my reason for re-locating in the first place was to take on a role as a political reporter for the Preston-based Farmers Guardian. Since leaving London I have been working as a freelance journalist and researcher for media outlets and industry organisations. I am also employed as a research associate for the Royal Society of Arts' RSA Food, Farming and Countryside Commission, developing their communications strategy up to and beyond its final report in March 2019.

Outside of my paid employment I have taken on voluntary roles as a director for the Oxford Farming Conference (2019-22) and on the advisory board for the Food Climate Research Network (FCRN) at Oxford University. I have also run a discussion on the future of dairy for the Oxford Real Farming Conference.



2. Background to my study subject

A Nuffield scholarship has long been an ambition of mine since I first heard about them in the early stages of my journalism career working at Farmers Guardian. But it was not until 2016 that I finally found the right moment in my own career and a subject worthy enough to merit applying.

The topic I decided upon started out as a series of curiosities: why do we drink milk, why is it cheaper than water and what will be its place in our diets and farming system in the years ahead?

As I began my research and travel for the scholarship I quickly realised that we are at a crossroads in cow's milk consumption in the long established markets of Europe and North America. Consumer eating habits and choices are changing and attitudes to dairy farming are becoming more complex and demanding.

I've tried to keep an open mind throughout my travels, looking at the topic from all perspectives. My report is an attempt to analyse how the cow's milk category can improve its consumer perception and value.

I have two important points about the wording used in this report. The use and meaning of the word milk is rapidly changing among both consumers and the food industry. For the purpose of clarity when I refer to milk I mean cow's milk. When I am talking about an alternative to cow's milk I will say that i.e. plant-based 'milk', which includes soya, almond, oats and rice-based drinks.

When the food industry refers to the milk category, they invariably mean liquid cow's milk including full fat, semi-skimmed and skimmed milk, organic and other specialist branded liquid milk products. However, they may also now include non-cow's milk products, such as goat, sheep or plant-based alternatives, in that category. In addition, they may also be including drinkable cow's milk-based products like kefir and ones where cow's milk only makes up a proportion of ingredients, i.e. milkshakes, frappuccinos or smoothies.

When I refer to brands, I don't mean supermarkets' own-brand range of milks. I mean a unique product that has been produced by a particular business under a particular name, for example Bio-tiful Kefir, Graham's Gold Jersey or Yeo Valley milk.



3. Research and travel undertaken

I spent eight weeks travelling to the United States, Denmark, Switzerland, Sweden, the Netherlands, Ireland and the United Kingdom in 2017 and 2018 trying to understand how the market and consumer attitudes to cow's milk is changing. These countries were chosen as representative of mature dairy markets, where consumption of milk was comparatively high, but where they are facing challenges in terms of producer returns and consumer sales. In each country I sought to speak with dairy farmers, lobbyists, analysts, manufacturers, retail firms, major dairy brands and academic researchers. I also sought to speak with entrepreneurs outside of the dairy sector, to get a broader and more unique perspective on consumer habits and trends.



4. The dairy sector today

The global dairy sector is worth more than US\$600bn and is forecast to grow at 2.5% between 2017-22 (Rabobank¹). The Asia-Pacific region overtook Western Europe as the largest dairy consuming region in the world in 2016, with the region forecast to make up two-thirds of the growth in dairy consumption in volume terms between 2016-2021 (Euromonitor².) The growth in Asia-Pacific is being driven by yoghurt and drinking milk products, followed by cheese (which is starting from a small base). China and India are forecast to be the largest growth markets, followed by Vietnam, Pakistan, Indonesia and the Philippines.

In the UK, the dairy sector accounted for 17.8% of total agricultural output in the UK (2014), with the country being the third-largest milk producer in the EU after Germany and France, and the tenth-largest producer in the world. The total number of dairy farms in the UK is c.13,000, down from 35,000 in 1995 (Defra³). The total numbers of dairy cows is 1.9 million, producing 14.9 billion litres at an average yield of 7,800 litres per cow (2017). The average herd size is c.140.

The total farmgate value of milk and milk products in the UK was £4.34 billion and the total value of UK dairy sales was £10.7bn in 2017 (Kantar⁴). Around 50% of the milk produced by UK farmers goes into fluid liquid market (a figure which compares with 7-16% in rest of EU). Of the other 50%, one-third goes into producing cheese, 8% into milk powder, 3+% into yoghurt and 2% into butter and 2% into cream. Sales of whole milk rose by 4% in 2017, while sales of skimmed milk fell by 4%.

Between 1998 and 2017 the annual sales value of UK dairy exports increased by 134% to £1.67bn, while export volumes doubled to 1.36m tonnes. The EU remains by far the largest market for UK dairy, (source: Agriculture and Horticulture Development Board AHDB), accounting for 92.7% of UK exports in 2017. The value of non-EU exports was £404.7m in 2017, with higher average prices to non-EU markets.

Spending on liquid milk (including non-cow's milk) in the UK over the past year was at £3.28bn (up 4%), with spending on cheese at £2.8bn (up 3.5%) and butter at £118m (up 16%)(Kantar⁵).

Table 1 shows the market share of the different types of milk. The UK organic dairy sector is worth £344 million (accounting for almost one-third of the total organic food sales), with Yeo Valley accounting for 17% of all organic milk sales in 2016⁶. Soy and other 'milk' alternatives account for less than 4% of liquid milk market in volume terms in the UK, but 7% in value

¹ <https://www.rabobank.com/en/press/search/2018/20180524-rabobank-dare-not-to-dairy-how-the-industry-can-respond-to-the-rise-of-dairy-free.html>

² <http://www.euromonitor.com/succeeding-in-asia-pacific-exploring-the-dairy-market-and-consumer-dynamics/report>

³ <https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2017>

⁴ <http://www.fwi.co.uk/business/fresh-milk-sales-drives-significant-uk-dairy-market-growth.htm>

⁵ <https://www.fwi.co.uk/business/fresh-milk-sales-drives-significant-uk-dairy-market-growth>

⁶ http://www.omsco.co.uk/_clientfiles/Omsco Milk Market Report 2017.pdf



terms. The vast majority of liquid milk is bought from major retailers, who account for 70% of sales. Doorstep deliveries are now at 2%.

Table 1. UK liquid milk market 2017-18

Milk type	Total volume (litres)	Retail price (£/litre)	Volume change (%)	Value of Sales (£)	Market in value terms (%)
Pasteurised milk	4.7bn	0.55 (farmgate milk price 0.27)	+0.1	2.6bn (61m sold direct off-farm)	81
Filtered	313m	0.76	+7	238m	7
Plant-based (milk) alternatives	220m	1.35	+12	260m	7.4
Organic (segment of pasturised)	152m	0.90	+3.2	137m	5

Figures from AHDB Dairy

Table 2 shows the sale of ‘milk alternatives’ in the UK. These alternatives (including soya) have seen a 59% volume growth between 2012-17, (AHDB), with 18% of adults now purchasing dairy substitute products. Non-dairy ‘milk’ alternatives represent around 7% of total consumer spending on milk (c.£260m) in the UK. In the US, they account for 10% of the total milk market with an estimated US\$2 billion in sales in 2017⁷. In the UK, plant-based ‘milks’ and lactose-free cow’s milks are expected to account for 20% of sales in the milk category by 2021 (the Grocer magazine⁸).

Table 2. Milk alternatives sales 2017

Milk type	Value	Growth in volume (year-on-year)
Total milk alternatives	£270m	+12%
Nut/coconut	£90m	+25%
Soya	£80m	+3%
Oat	£58m	+47%
Yoghurt/drinks/juices	£42m	+46%

(Figures from retail analysts Kantar)

⁷ <http://www.mintel.com/press-centre/food-and-drink/us-non-dairy-milk-sales-grow-61-over-the-last-five-years>

⁸ <https://www.thegrocer.co.uk/buying-and-supplying/the-dairymen-2017/>



For the future, most of the growth in the dairy sector is forecast to take place outside Western Europe and North America, where retail sales of milk declined 5% and 3% respectively between 2012-17. The global sales of dairy alternatives were US\$18bn in 2017 (with US\$15.6bn in 'milk' alternatives) up from US\$7bn in 2010 and with an annual growth of rate of 8% over the past decade (Rabobank) and are predicted to be worth US\$22 billion by 2022⁹. Dairy-free 'milk' represented 12% of total fluid milk and alternative sales globally in 2017. Only the Middle East and North Africa is expected to see higher growth rates in cow's milk over 'milk' alternatives between 2016-21 (AHDB) with further declines in retail sales predicted in North America and Western Europe.

⁹ <https://www.rabobank.com/en/press/search/2018/20180524-rabobank-dare-not-to-dairy-how-the-industry-can-respond-to-the-rise-of-dairy-free.html>



5. The challenges facing the milk sector

5.1 The value deficit

5.1.1 The fall in value

In the mid-1990s the farmgate price for milk was 25p per litre. In 2016, the farmgate price fell as low as 20p per litre. Over the past year (2017-18) the average price has been 27p.

Spending on milk and milk products, excluding cheese, has fallen in real terms faster than total spending on food and drink since the mid-1990s, according to the Defra Family Food survey. The ongoing price war on conventional milk has been a block on consumers trading up to higher value milk like organic. In short, people have got so used to milk being cheap that it requires a big shift to encourage them to trade up. That shift needs supermarkets to stop using milk as a loss leader to retain consumer loyalty. “If milk wants higher value it has to change from the top down. The supermarkets are driving the prices at the moment and giving limited margins to processors. It needs supermarkets to change how they see and sell it,” said Patrick Denny, RABDF Dairy Student of the year 2018. The low cost of milk is not the reason for its consumption, said Neil Hendry, a consultant at the consumer analysts Global Data: “Milk is bought because it’s

“Milk is bought because it’s ingrained in our DNA not because it is cheap.”

ingrained in our DNA not because it is cheap.”



The diversity of milks on offer to consumers in a US supermarket [image copyright: Tom Levitt]

5.1.2 Low retail prices

The race to the bottom in liquid milk was accelerated by supermarket price wars in the 1990s. “The harsh truth is that consumers are not paying much for milk today because supermarkets let them and farmers are stuck with them [supermarkets] as their access to market”, said Eddie Andrew, owner of the Our Cow Molly dairy brand. In the 1980s most milk was still sold in glass bottles with a head of cream on top. Today, the doorstep delivery market has dropped to 2% of total sales, with most milk sold regionally or nationally from a smaller number of large processors, such as Arla, which opened the world's biggest fresh milk plant in Aylesbury,

Buckinghamshire in 2014¹⁰. It’s the same story in the US, where Walmart recently announced its plans to start processing its own milk in a bid to cut costs further, ‘It’s going to help us provide really high-quality milk at really low prices,’ its vice-president of food is reported as saying¹¹. As Dean Sommer, from the Centre for Dairy research at the University

¹⁰ <https://dairy.ahdb.org.uk/market-information/dairy-sales-consumption/liquid-milk-market/#.WzD0cYRKijL>

¹¹ <https://www.foodbev.com/news/walmart-makes-move-into-dairy-production-with-indiana-plant/>



of Wisconsin said: “The price of milk is designed to just pay enough to keep a supplier. Most innovation comes from small players, but the fluid milk sector has no small players left and the capital entry costs are huge.”

5.1.3 Standardisation and its impact on milk

This never-ending fight on price has meant that the vast majority of milk in both the US and UK is sold in no-frills plastic containers in supermarkets and other retail or wholesale outlets and homogenised, with the milk fat broken up so that it does not separate from the milk. It's a process of standardisation designed to cut costs but has left little room for processors to invest in packaging, promotion or innovation. What's more, the use of milk as a loss leader by supermarkets to boost customer loyalty has meant they have had less interest in investing in presentation and in-store display. “For too long the aisle has been about three types of milk. For the average consumer it's like an industrial aisle of cages of milk. People pass through fast without spending time. We need to change that,” said Graeme Jack, head of communications at Müller UK.

The standardisation has also meant dairy processors have had little interest in the distinctive taste of milk that is either unhomogenised or from different breeds, said Doug Wood, hired by the Stirlingshire-based Graham's Family Dairy as the UK's first milk sommelier. “It's been a race to the bottom focused on price and not quality. It's easy for people to understand it's 50p, but less easy for them to think it tastes good. They just see it as a glass of white stuff.” Wood said a new generation of consumers were becoming more concerned about taste in their food choices, yet many of them don't realise that milk can and does taste differently. “We all have preconceived ideas of milk and what it tastes like, so we need to work hard to break that down and get people to reconsider,” said Wood. For James Baeworlf, who runs the Sassy Cow dairy farm near Madison, Wisconsin, it's quite simple: “Milk is poor man's food now”. The solution, said both Baeworlf and Dean Sommer, was to premiumise the market and come up with another product that gets milk out of that cheap commodity box, in the same way that Coca-Cola is trying to do with its Fairlife brand.

5.1.4 Market growth for dairy-free 'milk' alternatives

It's a case of contrasting fortunes for dairy-free 'milk' alternatives, which command a significant retail premium. They account for just 3.7% of the total sales volume of the milk category - which includes cow's milk and plant-based alternatives - but 7.4% of spending in the category. Although global demand for dairy, which includes cow's milk, is expected to grow at 2.5%, demand for plant-based alternatives to milk and other dairy is projected to grow at 5% (albeit from a lower base) despite the comparatively higher cost to consumers, according to Rabobank¹². The low-growth problem is strongest in Western Europe and North America. For the UK, the majority of growth in volume terms in the liquid milk market is taking place in the non-dairy 'milk' alternatives category. In 2017-18, pasteurised milk grew at 0.1%, while plant-based alternatives to cow's milk, including soya, oat, almond and rice 'milk' grew at 12%, according to AHDB. The only exceptions showing higher growth in the cow's milk category were filtered (7% growth), lactose-free (10% growth) and organic (3.2% growth).

¹² <https://www.rabobank.com/en/press/search/2018/20180524-rabobank-dare-not-to-dairy-how-the-industry-can-respond-to-the-rise-of-dairy-free.html>



5.1.5 The failure of generic advertising

Until recently, the dairy sector had been focused on the need for generic campaigns to push milk and dairy consumption to arrest this stagnation. This tactic that failed to arrest a sales decline in the US¹³. The AHDB's recent £1.3m consumer campaign on milk and dairy marks a change of approach¹⁴. It has focused on promoting the taste and enjoyment of dairy to young people. It's an attempt to improve the overall brand image of dairy amongst millennials. It's distinct from the 'drink milk for your health' messaging of yesteryear, however it has also been unable to prove any uptake in sales¹⁵. AHDB's Rebecca Miah, who heads up the campaign, said dairy needed to be seen as having more value in the eyes of consumers. "It's a hard thing to affect. The premiumisation makes people value things. It makes people actually think about it. Some dairy companies are doing it and people do trade up and buy that shiny new thing. A lot of innovation should be on-the-go and convenience out of home."

The importance of value was reiterated by Kevin Bellamy, dairy strategist at Rabobank, who said the main future focus for dairy would be on brands, with companies working hard on marketing to develop "extra uniqueness" in the marketplace. A former manager at the dairy company Fonterra explained how: "The key is to follow longer term trends not fashions. Fashions like frozen yoghurt come and disappear. Trends are clean labels, transparency,



Products produced by Oatly [Image copyright: Tom Levitt]

better nutrients, free from residues. Food is either a staple or an impulse purchase. The premiums for impulse purchases are much higher and it is why marketing is more important for those products than for staples or unbranded products, which rely more on superior scale or cost structures."

5.1.6 Seeking to regain value

Premiumisation is no easy task

when margins for dairy companies are so tight. "To get the retailers to pay more is not easy. The retailers' value milk to get people in stores as it's in 90% of baskets," said Müller UK's head of agriculture Rob Hutchinson. Müller's aim is to regain value through changing habits. With morning milk consumption in cereals in decline that means encouraging consumption of milk on other occasions, particularly snacking which is already being successfully exploited by dairy alternative products. "It is mayhem for dairy processors but they have to adapt to the consumer," said Tetrapak's dairy marketing

"The consumption of milk is evolving, not disappearing"

¹³ <https://www.newyorker.com/business/currency/the-end-of-got-milk>

¹⁴ <https://dairy.ahdb.org.uk/consumer-campaign/#.WzTuP4RKjiI>

¹⁵ <https://i.pinimg.com/736x/96/3a/19/963a19d7338a0cba7bdc1d1f289d0ea1--advertising-signs-vintage-advertisements.jpg>



manager Nagrinou Jeim. “The consumption of milk is evolving, not disappearing. When Starbucks launched in the UK, milk consumption actually went up. I grew up with cereals and milk but now it’s yoghurt which I didn’t have as a kid. Ten years ago dairy wouldn’t listen to innovation. They were happy with sales. Now they realise that innovation and differentiation is key to survival”. The key value trends for dairy in Europe, said Jeim, are convenience, snacking, on-the-go, healthy balance and local power. “People want a customised product i.e. lactose-free or added calcium, they want real connection with brands and they are shopping for breakfast now too so looking for time-reduction solutions.”

5.1.7 New competitors for the dairy sector

In trying to take advantage of new trends and add value, however, the dairy sector faces many new competitors, including plant-based ‘milk’ alternatives. “It’s not just a fashion. They are here to stay,” said Thierry Philardeau, head of Nestle’s dairy strategic business unit, who said the world’s biggest dairy company was open to producing plant or synthetic ‘milk’ and dairy alternatives. Others have already switched. Danone spent US\$10bn buying Whitewave, Dean Foods bought a stake in Good Karma Foods and Finnish dairy cooperative Valio launched an oat-based drink and yoghurt called ‘Oddlygood’. Long-time US dairy manufacturer Elmhurst quit cow’s milk altogether in 2016 blaming low profitability and reinvented itself as a plant-based ‘milks’ company¹⁶. In California, where almond production reached record levels in 2018, dairy farmers are already hedging their bets by planting the crop, with almond ‘milk’ accounting for 64% of US ‘milk’ alternative sales¹⁷¹⁸. “My father is sticking with dairy, but my brothers are more open. Why are we working so hard for the profitability they ask when we could grow almonds with less effort and more money,” said Paul Sousa, a dairy farmer from Modesto and director at Western United Dairymen who recently planted 35 hectares of almonds.

5.1.8 Is health a selling point?

A big factor behind the rise of alternatives has been health, with the dairy sector continuing to suffer from decades of dietary advice that animal fats were bad for you, said John Lucey, director of the Centre for Dairy Research in Madison. “It put a skull and crossbones on the dairy industry for decades. I don’t think consumers have figured that out yet. Milk is a high calorie dense material but not a health risk.” This is borne out by UK research commissioned last year that showed more than one-third of 16-24 year olds are cutting back on dairy, with 60% of them citing health as the reason¹⁹. Animal welfare (32%) and impact on the environment (25%) were the other two. The main health concerns were fat, sugar and allergy or intolerance. The “mums of the future” are now questioning their need for milk, said Zoe Kavanagh, chief executive of Ireland’s National Dairy Council. “[Milk] has lost its monopoly and its nutritional messages are waning,” said Blake Waltrip, US director of A2 Milk.

¹⁶ <http://uk.businessinsider.com/dairy-farm-nut-milks-elmhurst-2017-4>

¹⁷ <https://www.bloomberg.com/graphics/2018-thirst-for-almonds/>

¹⁸ <http://www.mintel.com/press-centre/food-and-drink/us-non-dairy-milk-sales-grow-61-over-the-last-five-years>

¹⁹ <https://www.thegrocer.co.uk/buying-and-supplying/the-dairymen-2017/how-to-sell-dairy-in-the-age-of-scary-expert-panel/557266.article>



Nestle is convinced that nutrition will remain dairy’s unique selling point with consumers. “Some people are selling a story, some are more realistic. Dairy is a good vehicle for health and nutrition. Dairy can be demonised often based on emotion and ideology. On nutritional grounds I cannot say you should not buy,” said Philardeau. For Nestle, the biggest



Asian-based Nestle milk brands targeting so-called ‘goodlififers’ who are over the age of 45 years [Image copyright: Tom Levitt]

innovation potential is in appealing to people who want personalised dietary solutions particularly so-called ‘goodlififers’, people aged 45 and older who want to live their life to the fullest and now make up 25% of the global population. “In some countries after 16 years old many people drink no more dairy. So how to get them to continue is a challenge. The answer is there are specific needs, not milk for seniors. You have to replace something. Foods with a functional benefit that substitute an existing food. There is a shift amongst consumers from reactive to preventative solutions. If you want to sell them milk you won’t succeed. If you sell heart milk and a personalised solution you will succeed,” said Philardeau.

“If you want to sell them milk you won’t succeed. If you sell heart milk and a personalised solution you will succeed”

5.1.9 What’s the place of milk in the diet of today?

While nutrition may still be a selling point, the products would need to change, said Lene Jespersen, a professor in food science at the University of Copenhagen. “Ten years ago there was just a small variety of milk with low fats and perhaps certain types of cows like Jersey that was a treat. Now the trend is a variety of fermented milks as yoghurts or drinks. People appreciate the flavour and diversity: for gut health, for taste and knowledge of cultures is growing.” The dairy sector had to acknowledge that diets have globalised and that people were not stuck to the past, said Jespersen: “My parents and grandparents drank milk because it was a habit. We have to some extent inherited our food habits. People are getting a lot more interested in food and how it tastes and what it does for them. When I was a child I had never heard of lactose intolerance. But my children are now aware of it and who eats what around the world. They’re more willing to mix things up and try new things like fermented milk. Dairy has a future but they have to be on the beat. Ten years ago we only had two beers and now we have loads of options and opinions and a boom of microbrewing. It has been a good trend for the beer industry. If we are lucky this will have a positive benefit for the dairy industry.”

Even if producers and companies selling cow’s milk products adapt, they are likely to be faced with more competition than ever with retailers and even dairy companies (who in many



cases now also own dairy alternative brands) keen to promote ‘milk’ alternatives to consumers²⁰. “There is a power struggle on the supermarket shelves over placement and visibility,” said Anna Richert, food advisor at WWF, who said dairy’s place, along with meat, at the centre of our food system and diets was changing. It was no longer seen by everyone as an essential part of every mealtime, with people switching away, for example, from milk and cereal for breakfast and trying something different.

But perhaps that re-assessment of dairy could be both fair and beneficial. Milk and dairy has long had a privileged position in our diets, the shopping basket and fridge. The majority of us like dairy and consume more of it than we are advised too. The government dietary recommendations are for dairy to make up 8% of our daily food intake, yet our actual dairy consumption is estimated to be more than 15%²¹. In the case of dairy, consumers are now drinking less fluid milk but eating more dairy products like yoghurt and cheese than they did 40 years ago. That trend away from cow’s milk is expected to continue, but a declining



An advert for kefir milk [Image copyright: Biotiful Dairy]

Smith Edge explained: “The main barriers for Generation Z (born after the mid-1990s) consuming milk are health concerns about acne, preferring other beverages, not liking the taste, not liking how it makes them feel and already drinking enough,” she said. “Consumers are already de-commodifying the product by switching from cereal and glasses of milk to smoothies and lattes,” she added.

In Senegal, where a consumer market for dairy is only

category for milk products could still return higher values for producers through the rise of brands and milk-based products like yoghurt drinks and smoothies. Cow’s milk can no longer take its market for granted and must find new ways to justify its place in people’s diet. As influential food policy expert Marion Nestle, a professor of nutrition at New York University and author of *What to Eat*, and *Food Politics*, said: “In nutrition, there are no absolutes, only relative statements in the context of everything else someone eats. I don’t think the kind of milk or milk at all matters if the overall diet is reasonable. Everything in moderation.”

It may, ultimately, be necessary (and preferable) for the dairy sector in Western Europe to accept that eating habits are changing and that the most viable future for milk producers maybe one where milk and dairy is more of a premium, rather than commodity, product. Food analyst Marianne

“Consumers are already de-commodifying the product by switching from cereal to smoothies and lattes”

²⁰ <https://www.alpro.com/uk/faq/detail/why-are-danone-buying-alpro>

²¹ <https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>



beginning to be established, milk will only ever be sold as a high value product, said Bagoré Bathily, founder La Laiterie Du Berger, which counts Danone among its investors. “I think milk is an expensive product if you look at the bigger picture of the planet and our resources. It needs to be considered a premium product and a pleasure product. We have to go give a value to our milk, but I don’t think we have to push consumption because it seems to be still an expensive solution.”

5.1.10 Who can diversify and add value to milk?

The task of creating value and de-commodifying milk may not, however, be achieved by major dairy companies. “We are controlled by companies that want standardisation but we need diversity in our diets and farming. How can we get off that model that is very destructive and will be the end of us if we don’t get off it?” said one UK-based dairy farmer to me. What’s more, the more disconnected dairy producers become from consumers the less chance they have to highlight the value of what they do on an individual scale, said Roberto Flore, head of culinary R&D at the Nordic Food Lab at the University of Copenhagen. “It is easy for the industry to produce a diverse range of products (i.e. 10 different types of milk), but what is the future of those who cannot do that - a small community of shepherds or dairy farmers who do not have the capacity to sell their product?”

For Flore, value for dairy producers would come from re-connecting consumers with the traditional farming in their locality. “Milk production is an activity based in defined geographical areas. Food production trends don’t favour Sardinia or rural Wales with high production costs and transport costs to markets. Milk is still 1,000 of different realities around the world. We need to be careful to preserve the local tradition and not just promoting something for getting more money for the industry. If we just think about feeding cows and



Animal-free milk developed by US-based Perfect Day
[Image copyright: Perfect Day]

pumping milk and not all the process around that gives you the milk then the system cracks. We need to talk about the value of culture and what we have learnt over a millennia. A farm of the future should be a little more entrepreneurial - not just one that is producing but one that is producing ideas/thoughts and a farm that is delivering experience.” Not everyone is convinced. “Selling direct is not the answer if you are competing against dairy companies with big budgets,” said Anna Carlsson, co-owner of Skogsgard dairy farm in Southern Sweden, which has sold its own produce in the past. “It was nice to find consumers, but it was hard to live on them.”



5.1.11 New and emerging competitors to cow's milk

Aside from plant-based 'milk' alternatives, the other challenger lurking in the near future is synthetic milk. Through a combination of yeast, cow DNA and plant nutrients, the Californian-based start-up Perfect Day (whose investors include one of Asia's richest men Li Ka Shing) claims to have created a product identical in taste and nutritional value to cow's milk, but without the use of an animal²². To make the animal-free cow's milk, Perfect Day insert cow DNA – which is readily available thanks to decades of research by the dairy industry – into yeast and add sugar to create milk proteins through fermentation. These milk proteins are then combined with sugar, fats and nutrients to create the final product. Although comparisons have been made with lab-grown meat, Perfect Day co-founder Ryan Pandya said they are not using novel technology. "Many people initially go 'oh is this like lab or test-tube milk', but that's wrong. There are no test tubes in our fermentation process, it's just like brewing craft beer. The meat folks are trying to invent technology that doesn't exist today, but our milk is made through techniques in use for more than three decades." The company has raised almost US\$25 million in financial backing already and said dairy companies are interested in bringing their product to market. "The assumption was that we'd be hated by the dairy industry, but it's actually the opposite. They see us as the long-term solution to problems they didn't even know were solvable," said Pandya.

Another US-based company, Impossible Foods, which is producing four million of its imitation meat-free burgers a month, has said it wants to target dairy next. "[Before becoming a vegan] I loved putting milk in my coffee and cereal, but plant-based milks don't work for me so far," said founder Pat Brown. "No-one is trying very hard to deliver the full experience of what consumers value from milk. We don't want to follow the course of soya and almond milk. We're after 100% of the market, not a niche of people avoiding meat or being health conscious." While some say the dairy sector can see off synthetic alternatives by focusing on dairy's "lack of processing" and "quality of nutrients", others are less convinced. Any assumption that the consumer would prefer a 'natural' alternative would be misplaced said Hans Van Trijp, a professor of marketing and consumer behaviour at Wageningen University: "In the end milk is just a bit of protein and water with a nice profile, but maybe we can mimic that. If you can extract protein from grass why would you give it to a cow first? Whether people are up for this is unclear. How natural is it to get milk from cows kept inside all-day? A lot will depend on how we define natural and health. I think we realise there will be a divide in society and in people between going all natural or processed. Only a small group is committed to one way or another. It is a sign of a level of pragmatism."

"In the end milk is just a bit of protein and water with a nice profile, but maybe we can mimic that"

²² <https://www.dairyreporter.com/Article/2016/08/22/Perfect-Day-vegan-animal-free-milk-a-gamechanger>



5.2 Innovation and identity

5.2.1 Innovation successes

One of the biggest innovation successes in drinks involving milk over the past decade has been the rising consumption of coffee, led by high street chains Costa and Starbucks. An estimated 9.5 million cups of coffee a day are consumed in cafes, bars and restaurants²³. It is a market popular with the consumers aged 35 and under who say they are most likely to be cutting back on dairy, according to survey data released by consumer research firm Kantar Worldpanel last year. While older people are more likely to buy instant coffee for home consumption, younger consumers use a coffee machines at home or visit coffee shops. Millennials (aged 20-37) contributed to 50% of all the coffee consumed in coffee shops, bars or restaurants.

So far the dairy sector has largely failed to profit from consumer's love affair with coffee and willingness to pay upwards of £2.50 for a latte. Only more recently has there been attempts



Specialist milk for coffee brand The Estate Dairy
[Image copyright: The Estate Dairy]

to promote specialist milk for coffee and capitalise on the willingness of coffee shops to pay a premium for good-quality milk with provenance. Milk can affect the taste and texture of coffee, depending on the type used, said Jeremy Challender, of Prufrocks Coffee “The biggest influence is fat content. With full-fat milk, you will get a creamy, sweet, melt-in-your-mouth texture. This is down to the milk’s fat globules, which coat the tongue and inhibit the taste of the coffee. What this really amounts to is less bitterness and less acidity. Good for making a rich, sweet, creamy, delicious drink, but bad if you like it fruity.” The other milk ingredient that matters is protein, he said. The level of protein in cow’s milk (it’s not always found in non-dairy alternatives) is essential in creating tiny bubbles, or micro foam, during heating.

5.2.2 Successful barista milk brands

A large proportion of specialist coffee shops are now choosing a specific brand of milk and sticking to it, but former barista Shaun Young went a step further in 2016 and set up his own brand, The Estate Dairy, sourcing milk via direct contracts with dairy farmers. “With a bespoke herd we can adjust the cows’ diet and conditions to make sure that everything is tailored to producing the milk wanted by cafes,” said Young. After just two years, he is selling 85,000 litres of milk a week across 500 outlets in London. Another successful barista milk brand is Brades Farm barista milk, which won its founders the British Farming Awards Dairy

²³ <https://www.newfoodmagazine.com/news/66042/british-coffee-consumption/>



Innovator of the Year award in 2017. Both brands are able to sell their non-organic milk at a market premium. As well as selling to food service outlets, The Estate Dairy is also selling its milk at retail for £1.80 a litre in a few select stores in London, together with a premium chocolate milk drink, produced in partnership with a specialist chocolate brand. Co-founder Shaun Young said he had been inspired by the success of Lewis Road Creamery in New Zealand, which achieved sales of US\$40m in its first year of selling flavoured milk brand. “We are trying to pioneer something different and raise the quality and perception of milk by getting cafes to stand behind it and be more passionate about the milk they sell.” Young said presentation and packaging was key to making a dairy product stand out and get noticed by customers. “Our milk bottle looks different to a conventional one you find in the supermarket. “We buy the labels reverse facing so when it is sat in a coffee bar it’s facing the customer. We use a clear material which looks quite bespoke. It is a niche thing but by doing these small things, it makes a difference.”

5.2.3 A new identity for milk

New brands like these can help create an identity for milk it currently lacks, said Netherlands-based Bas Groot, who became known as the world’s first milk sommelier back in 2015²⁴. “Milk has a bad reputation because it has none. Differentiation can help create more identity in dairy. In the future you could have normal milk during the week like cheap wine and then on the weekend you can buy special bread and milk and have and enjoy it with friends. A lot of people are not consuming a product because it is healthy or because they like it, but because it fits their identity. The drink is an expression of who they are or want to be.” Groot said differentiation can come through breed-specific milk, animal welfare, A2, free-range milk, regional or even cow-specific milk i.e. from Bella39, homogenised. “All these storylines create identity and a product cannot have too much identity,” he said. Groot said adding value will become even more important for dairy, as consumption per capita in Europe is likely to fall. “The consensus in the future will be to eat and drink less dairy which is a good thing. Feeding the world we have to consume less animal protein. That makes it more important to focus on quality not volume.” But, he warned, changing ingrained cultural habits like buying milk cheaply was “the biggest and most difficult thing to do”.

“We are trying to pioneer something different and raise the quality and perception of milk”

Re-inventing milk in the eyes of consumers - and creating identity - will be no quick fix. It is also about much more than pumping out images of cows and green fields, with modern-day consumers demanding much more, said investigative food journalist Joanna Blythman. For Nick Barnard, founder of the Rude Health food brand, milk needs to go back to the product itself: “It is called the white stuff because it has lost connection with consumers. It is mixed from multiple farms and homogenised. We are in this blighted phase of misunderstanding dairy. We need to understand the value of dairy and the innovation in non-dairy,” he said. “Milk has no name and nothing unique. It’s valueless. We’re fighting against a generation that see milk as white, not creamy or uncoloured. The only choice people have is the colour of the cap. Farmers need to look in their own fridges and become consumers as well as producers. A generation force-fed in schools have given it up and a generation on fat-free wouldn’t notice if they replaced it as it’s tasteless.”

²⁴ <https://www.bbc.co.uk/programmes/b06j0wf5>



5.2.4 The market for flavour and provenance

It is the dairy industry, not supermarkets, that have driven people away from flavours in their milk, said Flore, from the Nordic Food Lab. “People are getting more used to having a preference for mild flavours, driven by industry. Economically it is easy to produce, but our capacity to enjoy flavours is disappearing”. Albert Strauss, owner of the Californian-based Straus Dairy brand agreed. “We’ve done a disservice to ourselves as an industry by trying to make milk generic. Milk has lost its flavour. The way it’s being handled and marketed is to make it generic. There’s no talk about breeds, seasonality, regionality. How are they [processors] supporting farmers by selling that milk. It’s just about how cheap to get that milk,” he said.

“Milk has lost its flavour. The way it’s being handled and marketed is to make it generic”

While the market today of consumers willing to experiment and pay more for different types of milk like Jersey, unhomogenised or regionally-specific milk may be small, milk sommelier Doug Wood said it can be grown through dairy companies focusing on the food service sector. In the UK, consumers spend £96 billion a year in cafes, canteens and restaurants. While spending on household food and non alcoholic beverages since 2013 has fallen in real terms by 3.2%, household spending on eating out has risen by 9.5%, according to Defra’s food surveys²⁵. The Scottish-based brand Graham’s Dairy has had some success here with 50% of its sales of branded products like Jersey Gold Top coming through the food

service sector. “The success of Gold Top is about taste and product packaging, which shows we are not a commodity and getting consumers to buy into that,” said managing director Robert Graham. But food service remains a vastly underutilised sector for dairy to add value into. Two well-known food chains Pret A Manger and McDonalds use organic milk, while a number of coffee outlets have started to switch to a branded or specialist milk for coffee provider, using it as an opportunity to differentiate themselves in an increasingly competitive



Kefir dairy drink [Image copyright: Bio-tiful Dairy]

marketplace. Cornish-based Trewithen Dairy, for example, is supplying milk to 11 Starbucks outlets across Cornwall, Devon and Somerset²⁶.

5.2.5 The success of kefir

As well as the specialist milk for coffee market, another recent successful innovation in the milk sector has been kefir, which has created an entire new category in the UK marketplace halfway between milk and yoghurt. Fermented milk started as a way to maintain freshness of

²⁵ <https://www.gov.uk/government/publications/family-food-201617/expenditure>

²⁶ <http://theblendmagazine.co.uk/2017/06/farm-supplies-coffee-chain/>



milk and is created by adding a live kefir culture (bacteria and yeast) to the milk. It is touted as providing various health benefits although the NHS has said there's little evidence yet to support the health claims²⁷. The UK-based brand Bio-tiful Dairy was started in 2012 by former Russian skater Natasha Bowes, and is sold by the Co-op, Sainsburys and Waitrose. It sources its milk from two dairy farm suppliers Berkeley Farm Dairy in Wiltshire, which provides its organic range, and Blackmore Vale Dairy in South Downs. Its Strawberry & Grapefruit Kefir Smoothie won Best Dairy Drink at the World Beverage Innovation Awards in 2017. It is currently selling 80,000 bottles a week at £1.60 for the 250ml sized unit, but a new bottling line could now increase capacity to 16 million bottles a year.

Bowes said: "I grew up on kefir. It was a fundamental part of diet in Russia at breakfast, as a snack or before bed. A fantastic meal supplement. I am mildly lactose intolerant. It is naturally low in lactose as the culture eats up the lactose enzymes so I don't have a problem. I realised it was a scalable opportunity in the UK and beneficial for people. It does not matter how much money you throw at it, it must taste good. I knew I was ahead of the curve on trends on gut health and that the market would come to us." Bowes said kefir appeals to slimming women, exactly the consumer most likely to be avoiding dairy. "That's the big market. It's great nutrition and an important recovery food. It is between a food and a drink. I have a rule that if someone wants to leave, it is counter-productive to stop them leaving. Let them find their way back if they want to. You can't force people. We make choices for good reasons. The reason I think kefir is a good product is that it's good for everyone."

5.2.6 Organic milk success

One category which has already had success in adding value in dairy has been organic. Organic dairy sales made up 29% of the total organic food and drink market, with total sales of £344 million in 2017²⁸. This growth led to the recent deal between the dairy cooperative Arla and the well-known organic dairy brand Yeo Valley (which has adapted its farming system to improve public perception of the brand). "Our ambition is to encourage customers to trade up from standard to organic milk, butter and cheese, driving overall growth for organic across dairy categories," Arla has said. The company accepts that most people still see milk as an ingredient rather than a product in its own right. "It's cereal *with* milk and coffee *with* milk and not the other way round," said Ash Amirahmadi, UK managing director at Arla Foods UK. Its approach has been to continue to push new added value brands like its longer lasting Cravendale and lactofree brands and newer additions like Protein Milk, Skyr drink and a Starbucks-branded ready-to-drink coffee. The idea, said Arla's head of innovation Sven Thormahlen, is to "follow our consumers where they go, which at the moment is consuming more food and drink out of the home, not somewhere where dairy has traditionally exploited".

5.2.7 Coca-Cola and Fairlife milk

Innovation in dairy can and is being led by companies from outside the category too. Coca-Cola was one of those to realise the opportunity for dairy to steal market share from carbonated drinks under fire over sugar content. It launched the Fairlife brand in the US in

²⁷ <https://www.nhs.uk/conditions/probiotics/>

²⁸ http://www.omscoco.co.uk/_clientfiles/Omsco Milk Market Report 2017.pdf



2014 and is now expanding to Canada²⁹. It sells itself as a nutritional product with less fat and added protein and calcium. “Milk is the perfect candidate to innovate because it starts as a superfood before you add anything. What we’re doing is making better what is already there,” said Anders Porter, head of communications at Fairlife. “We are targeting parents who do shopping. The idea is that before you send the kids off to school you add Fairlife to what you already do i.e. cereal or smoothie. We’re giving you the fuel to live your life to the fullest.”



US-based Fairlife’s milk drink [Image copyright: Fairlife]

Porter said milk was long overdue a re-invention. “Milk has still to overcome the home tag. The dairy industry was not listening to what the consumers wanted. It’s wasted lots of advancements in the beverage sector i.e. a juice company now has something with a protein source, or water with added ingredients. Even coffee has reinvented itself as people wanted a bit more. Dairy has done nothing. Just sat and waited. We saw an opportunity to take what milk has and make it better.” This point was echoed by a director from The Boulder Food Group, an early-stage investment fund, who pointed to Kabacha and Coconut water, two

categories that were almost non-existent five years ago but now worth US\$1bn and \$3bn respectively in the US-alone. “Trends can move much quicker today with the internet and are easier to launch and scale,” he said, “The key considerations for us [when investing in a brand] is sourcing, transparency and understanding the story.”

5.2.8 The importance of branded milk

Although the vast majority of milk is sold as a low-value product, there are signs of retailers being keen to promote and stock higher value brands which bring added returns for supermarkets. Just like the food service sector, retailers are keen to differentiate themselves and be first movers on a trend. That can benefit dairy. Sainsburys took a punt on kefir milk, Asda started stocking free-range branded milk and Morrisons did For Farmers Milk. All of the UK’s retailers also stock a range of milkshakes and coffee and milk drink brands, with the sales value of coffee drinks up 38% in 2017, according to Kantar. “This is paying dividends for the milk sector as a whole with branded milk now driving growth in the liquid milk category, with value sales up 4.4% and volumes up 52% in 2017, compared with a +1.1% increase in the value of sales and a -1.2% decline in volume for own label milk, according to Kantar³⁰. “Brands is where milk needs to be if it wants to be successful with the next

²⁹ <https://www.foodbev.com/news/coca-cola-to-build-66m-dairy-facility-in-ontario-canada/>

³⁰ <https://www.thegrocer.co.uk/buying-and-supplying/the-dairymen-2017/how-to-sell-dairy-in-the-age-of-scary-expert-panel/557266.article>



generation of consumers”, said food futurologist Dr Morgaine Gaye: “People get caught up in trends that are so powerful they pull along without them realising. Brands are like a religion, people follow them.”

5.2.9 Milk sector still slow on innovation

Despite these moves, the milk sector still lags behind innovation, said Sainsburys head of agriculture Beth Hart. “Everyday we’re getting approached by a new product as an alternative to milk. The sector is full of bright entrepreneurs who I wish would come to dairy too. Milk has not changed, but the category has. We believe it is customers changing their diets, the social status of saying you drink almond ‘milk’, that is all impacting milk. Who is taking milk and innovating with it? The innovation is in non-dairy. You look at the premium they can add for non-dairy. Milk is viewed as a commodity. It’s almost too cheap to be a superfood. How do we add value back into milk? Only through innovation,” she said. Zoe Kavanagh from Ireland’s National Dairy Council (NDC) agreed. “The fundamental challenge to the sector is that we’re in a high volume, low margin industry so the investment back has always been poor. We’ve been unable to invest to respond. We need an innovation agenda. Every dairy company needs to capitalise on the functional benefit of dairy.” It also needs to recognise the shift to convenience and rise in the numbers of smaller households and people living and working longer in the UK, said a former dairy manager for The Co-op: “Eating is a less formal occasion now. People want immediacy. A key driver for milk is going to be new product development brands like milk in pouches, flavoured and iced coffee, not local brands.”

“It’s almost too cheap to be a superfood. How do we add value back into milk? Only through innovation”



5.3 Disconnection and perception

5.3.1 The dairy sector's image

The dairy sector's public image in media, marketing and product branding has long been tied to bucolic images of cows in green fields. Coca-Cola could not stop itself using idyllic images when describing its new Fairlife-branded milk's traceability from 'grass to glass'. It makes the claim despite admitting that the cows it sources milk from are not fed or even kept on grass and the final product is sold in a plastic carton, not an old-fashioned glass bottle³¹. But, such images are also tying the hands of dairy producers. "Some farms have a very good ecological footprint, but the public does not like the way they run the farm," said Trienke Elshof, chair at LTO Noord and dairy farmer in the province of Friesland in the Netherlands. "People want to see a cow outside. We are not doing anything illegal but society does not accept the way we treat our animals. For us it is clear that we have to change our mindsets, but we have to balance getting a profit and getting accepted by society."

This objective is only made harder by consumer behaviour, said Hans Van Trijp, a professor of marketing and consumer behaviour at Wageningen University. "We nurture a nostalgic image of dairy farming that we know can't be true but we want to believe it's true. People don't want to know the truth. We don't want to be reminded of our hypocrisy.

"We nurture a nostalgic image of dairy farming that we know can't be true but we want to believe it's true"



Levitt

As long as there is choice, you go for price over social benefit. We are not good at putting aside our personal self-interest. It's a dilemma for farmers, but the industry has to make sure the sensitive issues do not exist." Put simply, said Kees de Koning, manager of Wageningen's Dairy Campus: "They want one thing as citizens and make another decision as consumers." Navigating the "disneyfication of farming", as Anna Carlsson, who runs the Skogsgard dairy farm in Sweden calls it, is almost impossible. "Who should have a worst night's sleep

the farmer or the consumer who buys cheap milk and food?"

5.3.2 The Netherlands and the degrading image of dairy

Of all the places I visited, it was the Netherlands where navigating the public perception tightrope seemed most challenging. With its comparatively large livestock sector, including

³¹ <https://fairlife.com/our-promise/our-farms/>



1.6 million dairy cows, the Netherlands is the fifth largest dairy exporter in the world. Although the image of the sector is in the Dutch dairy industry's own words, 'inextricably linked to a characteristic landscape of fields dotted with cows and windmills', in reality it is a modern sector seeing the growing use of technologies such as automatic milking systems and a rising number of continuously housed systems (around 25% of farms do not give their cows access to pasture for at least part of the day during the year)³²³³. In recent years the sector has suffered bad publicity with reports of farms being unable to handle excess cow manure and, in a small number of cases, the illegal dumping of manure³⁴³⁵. Environmental groups have started to actively campaign against the sector, with WWF Netherlands now calling for a 40% cut in cow numbers in the country. "A long-term reduction of 40% will enable the Netherlands to comply with the EU's Nitrates Directive without needing derogation, will support the climate targets in 2030 and will have positive effects on the other environmental and biodiversity challenges," said WWF's head of agriculture Natasja Oerlemans.

The image of the dairy sector in the country had been degrading in the last few years, one Dutch industry analyst told me, who was concerned about dairy being seen as part of the intensive livestock sector. "The image of cows and pasture is still a great one [but] the farms that quit are mostly pasture and the ones who make big investments are indoors," he said. Martin Scholten, director of animal science at Wageningen, agreed: "Dairy farms have an advantage over other sectors as they are more transparent. Public perception is better with cows that live for years not months. But they have to keep it. Pasture is a trade-off for animal welfare. It's about us wanting to have a better feeling in the countryside."

"Dairy farms have an advantage over other sectors as they are more transparent. But they have to keep it"

It's likely to be a delicate balancing act for the sector going forward admitted Professor Van Trijp: "If you were to redesign the Netherlands and were not tied to the status quo, would you do it again?" said Professor Van Trijp. "The answer is probably not." The response of the Dutch Farmers' Union has been to set a goal for 80% of cows to be out on pasture. Critics say it's a marketing con with just a small percentage of their lifetime likely to be spent outdoors under most systems and that more attention should be spent on overall welfare targets. Yet, Friesland Campina (and others) is taking no risks and is paying farmers who allow their cows to graze for part of the year an extra €1,50 per 100kg of milk produced. "As long as we make enough progress on getting more herds outdoor grazing, improve calf welfare and lower our greenhouse gas footprint then we don't think the Government will legislate against us," said a spokesperson for the company.

5.3.3 Dutch farmers debate how to change

Many of those I spoke to in the Netherlands said they have no choice but to adapt in order to maintain a so-called 'social licence to operate'. "People are not against farmers in the Netherlands, they are against the system. Farmers are the victims too," said dairy farmer

³² <http://www.zuivelnl.org/wp-content/uploads/2016/09/Dutch-dairy-in-figures-2015.pdf>

³³ <http://library.wur.nl/WebQuery/wurpubs/441879>

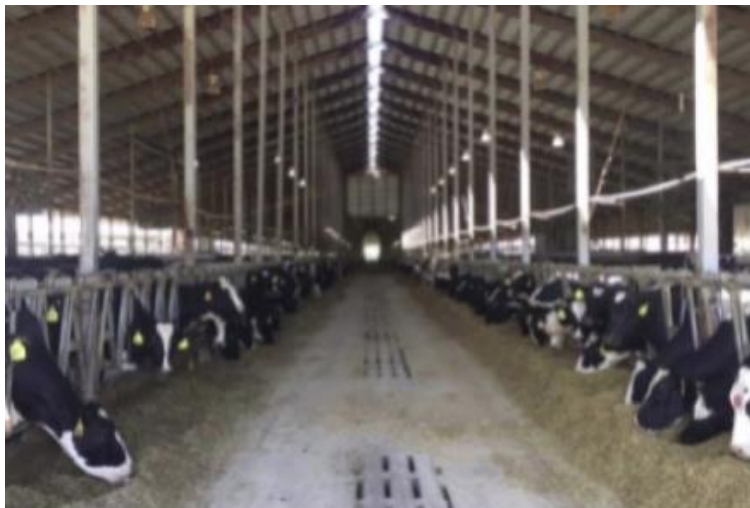
³⁴ <https://www.nrc.nl/nieuws/2017/11/10/het-mestcomplot-a1580703>

³⁵ <http://www.clo.nl/indicatoren/nl052811-mestproductie-bij-gebruiksnormen-bedrijven-met-overproductie>



Jaring Brunia. Nuffield scholar and dairy farmer Willem Van de Schans, whose family owns the Den Eelder brand, suggested the Dutch public don't currently see farmers as professional, trustworthy or transparent. "Sometimes I am frustrated because we're stuck in a system that I think is not 100% right, but we can only make baby steps. We need to show them why we are here or stop farming. We don't want to be in the corner of the pigs and poultry. It is not because they are worse, but because they are seen as worse and one of the most important things is that in the Netherlands the cows are outside. It's like a UNESCO heritage thing like tulips," he said. But that doesn't mean accepting those stereotypes, he added. "It is really important that we don't show ourselves as a romantic, traditional Dutch farm because we are not. We are a modern high tech farm full of technology. Everyone respects Dutch farmers overseas but here it is really different. They [Dutch public] don't see the agricultural sector as really productive and highly innovative they prefer to see them as small entrepreneurs and family farms because we haven't shown that image."

Ad Van Velde, owner of Hunsingo Dairy and DairyNext and president of Global Dairy Farmers, said large-scale, indoor dairy systems as he had seen in the US were not the future for the Netherlands. "The industry is under watch in the Netherlands and Europe and



An indoor dairy farm [Image copyright: Tom Levitt]

every year we are moving towards organic. We must explain ourselves to the higher educated as they are the start of the trend." Nuffield scholar and Dutch dairy farmer Jaco de Groot, from Utrecht, agreed. "The USP (unique selling point) of milk is that it is using the land to make food and a cow is a good way of doing that. There are people who just want cheap food, but that's not the

movement for a country that is getting more wealthy." Pieter

Koonstra, who has installed a freewalk dairy farm in Vinkenbuurt, said: "People say sex sells, so does animal welfare. It's how people feel about it. I don't have to describe it. People come into my barn and I don't have say its cow-friendly they can see it."

5.3.4 Sweden and the welfare dilemma

Sweden is often cited as a warning against raising animal welfare standards and what one dairy analyst calls "artificial changes" like banning non-grazing cows. Under an animal welfare law established in the late 1980s Swedish cattle must be able to graze outdoors for three months of the year. The law was the culmination of a personal campaign on animal welfare by Swedish children's author Astrid Lindgren, who disliked many of the trends in the modern dairy sector including livestock permanently housed indoors. It increases costs of



production in Sweden, but hasn't stopped milk consumption, including yoghurt which is often consumed as a drink in Sweden, falling from 154kg per capita in 1990 to 112kg in 2014³⁶.

Never the less, any attempt to downgrade Sweden's standards in response would be a mistake, said Carina Tollmar, head of sustainability at the oat-based food and drink company Oatly. "If we ditch Sweden's farming regulations on grazing we lose the only reason for people to buy Swedish products today." Others agreed. "The risk is that we switch to intensive systems where cows eat so much concentrate that they become like pigs. People in Sweden say they value a mosaic countryside including open grasslands with animals. They don't want us to replicate a monoculture landscape like you see in some parts of Brazil", said Christel Cederberg, professor of sustainable food at Chalmers University in Gothenburg. The grazing rules have also kept environmental groups onside with dairy in the country, for now. "The cow's ability to transform something we cannot eat into food is wonderful. A lot of the problem is to do with the scale, market and the financial system farmers and consumer exist in. Consumers will still want to drink milk that comes from cows that graze," said Anna Richert, from WWF Sweden. While consumers cared about maintaining pasture landscape in Sweden, Thomas Magnusson, a member of the board of directors at The Federation of Swedish Farmers (LRF) cautioned that they would only pay a little bit more for farmers protecting that "if they see that it's good for them".

5.3.5 UK public's knowledge of reality of dairy today

In the UK, the dairy industry continues to struggle with its own public perception challenges,



Robin Hall bringing his grazing cows in for milking at Plaw Hatch Dairy Farm [Image copyright: Tom Levitt]

including calf separation, continuous indoor housing systems and the fate of bull calves exported or disposed on-farm³⁷³⁸³⁹. Images and stories of all three continue to cause a level of public shock and surprise. This is, in part, down to the majority of the public having no connection or knowledge of dairy farming and years of simplistic images of "sunshine, cows and pasture" said Arla's Amirahmadi. "Dairy production is quite complex and takes some explaining. The truth is very different from the stereotype we have been spreading, but not something to be embarrassed about. The industry

has not done a good job but we have a responsibility to promote understanding of milk production."

³⁶ http://www.jordbruksverket.se/webdav/files/SJV/Amnesomraden/Statistik,fakta/Livsmedel/JO44SM1501/JO44SM1501_tabeller8.htm

³⁷ <http://beefandlamb.ahdb.org.uk/wp-content/uploads/2018/03/CHAWG-update-on-Dairy-bull-calves-March-2018.pdf>

³⁸ <https://www.sciencedirect.com/science/article/pii/S0022030214006936>

³⁹ <https://www.sciencedirect.com/science/article/pii/S0168159115003159>



The National Dairy Council's Kavanagh agreed: "Young urban-based consumers are becoming squeamish about farming. We cannot take their support or trust for granted anymore."

Consumer disconnection started arguably as soon as we stopped drinking milk from a cow and started buying it from a shop or getting it delivered, said sociologist Richard Nimmo. That was accelerated by rural-urban migration and decline in the numbers of dairy farms. The average person in the UK is now highly unlikely to either personally know or be related to a farmer - and in the vast majority of cases have never visited a modern dairy farm. It's a detachment the dairy sector has to navigate when responding to issues such as permanent housing. "Not many people know about indoor farming so whereas the industry sees it as normal the public finds it more problematic. People don't like the idea of cows being in all day they see it as cruel to cows," said Orla Shortall, a researcher on dairy farming at the Hutton Institute. Marina von Keyserlingk, a professor in animal welfare at the University of British Columbia, agreed. "Consumers hate restriction of movement. Rather than telling people they are ignorant, acknowledge it. You can't ask the public what is natural. You need to come up with the solutions to avoid these reactions."

"Young urban-based consumers are becoming squeamish about farming. We cannot take their support or trust for granted anymore"

5.3.6 How to re-engage with dairy consumers

Given the complexity of it all, many would like to find a way to get beyond talking about cows and fields. With animal welfare "really tough" to communicate, Rabobank analyst Thomas Bailey said dairy needs to find other ways of emotionally-connecting with consumers⁴⁰. "Dairy alternatives are not so much a response to consumers moving away from milk produced by an animal, but more of a desire to buy something with a stronger brand story," said Andrew Lowkes, formerly of Neals Yard. "If more people could engage better with farms and how milk is produced it could have equal success. If people were given a greater connection with how milk is produced they'd feel more comfortable." Flore agreed: "People recognise themselves as a person through the food they eat. It is a product of a society. Food is a reflection of how we see ourselves. Dairy is caught up in that."

The dairy industry is more likely to have more success with consumers, said Bailey, by focusing on the unique benefits of individual dairy products, such as romanticising over the butter used in a croissant or the power whey powder can bring to a weight lifter. Arla's marketing director Stuart Ibberson agreed: "When customers think dairy, the imagery they see is a glass of white liquid or a cow in a field and maybe a farmer there. How can we get milk part of the healthy, nutritious food imagery world? It is a big missed opportunity. We need to make milk more relevant to what is out there," he said, adding that meant less fields and churns and more foodie, lifestyle, coffee, smoothies and pleasure-based. Such ambitions will not negate the need to continue to address dairy's public perception, as the maintaining of societal acceptance was very much part of "winning hearts and minds", said Michael Murphy, director of the Positive Farmers Conference. However awkward it may be, the sector can't ignore what Sue McCloskey, co-founder of Fair Oaks Farms called, "the 16-year-old in New York city dissing agriculture from her mom's sitting room".

⁴⁰ <https://www.rabobank.com/en/press/search/2018/20180524-rabobank-dare-not-to-dairy-how-the-industry-can-respond-to-the-rise-of-dairy-free.html>



6. Conclusions

1. Milk has lost its monopoly and value

Milk has lost its monopoly on our eating habits, with consumers expressing a preference for choice and convenience. Standardisation has also shorn the liquid milk category of a higher value.

2. Generic campaigns will not drive value back into milk

Generic campaigns are no magic answer for attracting younger consumers to cow's milk products. AHDB's report on its recent £1.2m advertising campaign published in August 2018 could offer no evidence it had increased sales or the value of sales. The same was true of the long-running 'Got Milk' campaign in the US.

3. The market for milk is evolving, not disappearing

The emergence of specialist milk for coffee, kefir and protein drinks has shown that the consumption of milk is evolving, not disappearing, even if the word itself may become redundant. The most successful dairy businesses are the ones innovating to meet key trends including convenience, snacking, on-the-go and health.

4. Transparency around how milk is produced is becoming critical

Consumers and citizens are getting more, not less, disconnected from food production. Transparency is key, particularly for those willing to pay more. But public expectations on issues such as cow welfare and zero grazing are getting harder for farmers to meet.



7. Recommendations

1. Brands can drive value back into milk

Branded milk is driving growth in the liquid milk category, with value sales up 4.4% and volumes up 52% in 2017. Yet they account for less than 20% of total sales, a still comparatively small share in contrast to other food products.

2. A new approach by entrepreneurs can create value in milk

The challenge for those wanting to add value to cow's milk will be to define the difference through marketing, products and taste. The new barista milks, kefir drinks and other drinkable milk products providing a specific taste, health or nutritional benefit are best capturing consumer's changing eating habits, interests and lifestyles.

3. Dairy producers can benefit from collaboration

Selling direct is not the only solution for producers wanting to add value to milk. A number have collaborated with dairy entrepreneurs to create branded milk-based drinks. Dairy producers may prefer to rely on retailers, but retailers have done little, or been unable to significantly improve the value of milk. In the long term, dairy producers should be open to seeking partners who have other supply chain skills, expertise and contacts.

4. Transparency around how milk is produced is critical

Transparency around how milk is produced from farm to bottle is key, particularly for those willing to pay more. Brands can help producers gain added value for their approaches to tackling public perception issues, such as cow and calf welfare and zero-grazing.



8. After my study tour

Since starting my Nuffield Farming Scholarship I have made a number of public appearances, talking about the findings from my study. I was interviewed by BBC Countryfile talking about the future of dairy, I organised and chaired a debate on the same topic at the Oxford Real Farming Conference and I gave a guest lecture at the Centre for Alternative Technology in Wales to students studying for an MSc in Sustainable Food. I also chaired a discussion and dinner on what an ethical meal was at the Edinburgh Science Festival.

I have written numerous articles about the challenges and opportunities facing the dairy sector for Farmers Guardian, Huffington Post, Vice media, Country Life and the Guardian. This included pieces on increasing consumer interest in the taste in milk (Country Life) and the failure to end the practice of on-farm disposal of male calves (Guardian and Farmers Guardian). The latter led to the AHDB convening a meeting of more than 50 organisations (NGOs, industry and retail) in July 2018 to find ways of ending the practice. The piece was also cited in an article published in the industry magazine Dairy Farmer.

I intend to continue writing and speaking publicly about my findings over the next twelve months and am in discussions about running an event at Dairy-Tech in February 2019. Thanks in part to my Nuffield scholarship, I have taken up roles as a research associate for the Royal Society of Arts' Food, Farming and Countryside Commission, and as a director for the Oxford Farming Conference for 2019-2022.

Tom Levitt



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