

**Keith Woodford and Xiaomeng (Sharon) Lucock**

# New Zealand's dairy opportunities in China



*This article was written just before the recent problems with Fonterra protein contamination emerged. Editor*

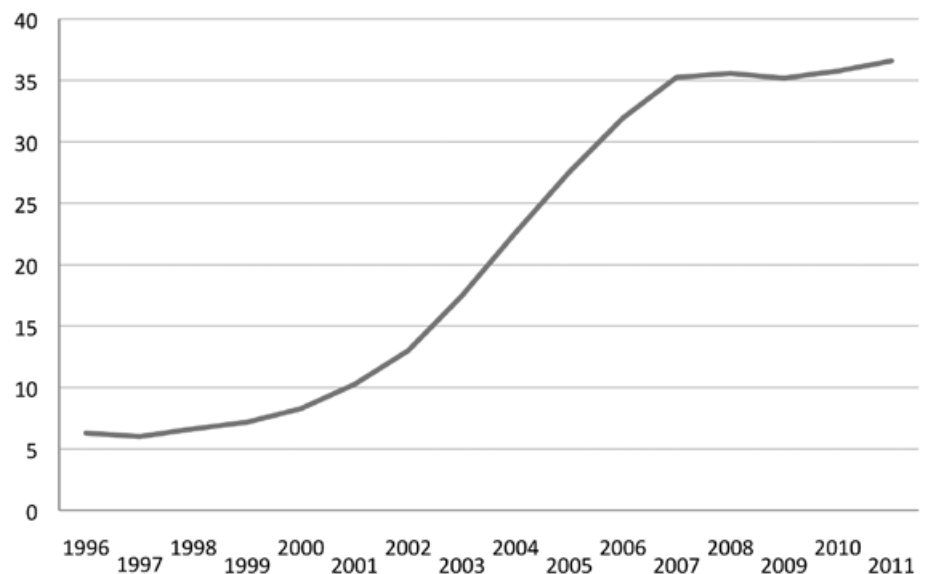
Increasing demand from China for internationally sourced milk powder has, in recent years, been underpinning prices for New Zealand dairy products. China is now by far the most important destination for these products. Without the increase in Chinese demand, international markets could not have absorbed the increased volumes coming out of New Zealand and the United States.

The main reason for the large increase in demand can be traced back to the widely publicised melamine disaster of 2008. This, together with a raft of other food scandals less publicised in the west but well known to the Chinese, led to Chinese consumers losing confidence in their own food industries. However, it was not only consumers. The Chinese government also lost confidence in the existing dairy industry and it has directed that there must be major change. Specifically, the dairy industry is now moving to an industrialised model based on dairy herds of 3,000 to 5,000 cows, with individual companies owning multiple herds of this scale. In this article we discuss the implications for New Zealand of this change, together with the other changes occurring in China which will continue to influence Chinese demand for imported dairy products.

## Changes in China's dairy industry

According to the National Bureau of Statistics of China, total dairy production increased from 6.3 million tonnes in 1996 to 36.6 million tonnes in 2011. This

Million tonnes

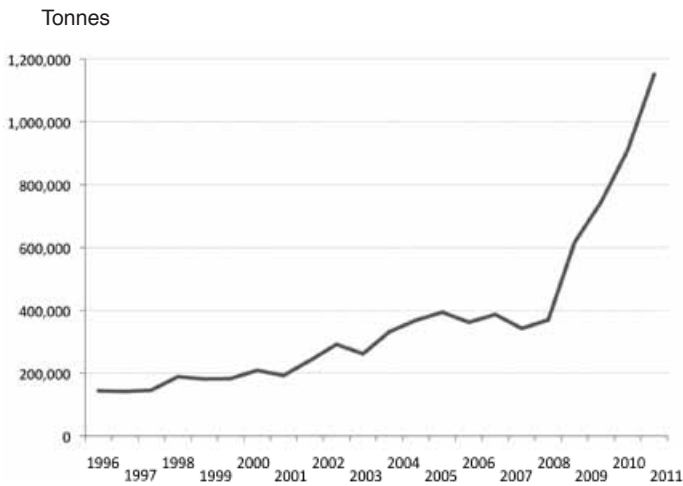


**Total dairy production in China 1996 to 2011**

Source: National Bureau of Statistics of China

was nearly a six-fold increase over a period of only 15 years. However, production has plateaued since 2008, linked to lower prices for local produce and new regulations requiring companies to control the total supply chain.

In contrast, the consumer demand for safe products has led to a rapid increase in dairy imports. Between 2008 and 2012, the total dairy imports have more than trebled. Data for the first half of 2013 suggests that, given no unforeseen shocks, always a possibility in international food industries, a further 30 per cent growth is likely for 2013.



**Total dairy product imports to China 1991 to 2012**

Source: FAOSTAT for 1991 to 2010, China Customs for 2011 and 2012

The traditional Chinese dairy model was of farmers owning up to 10 cows, fed mainly on crop wastes, which were either hand-milked or brought twice a day to a milking station. Regardless of specific variations in this system, the common elements included low production per cow, low milk quality in terms of bacteria and somatic cell counts, and then a long supply chain from milking stations to sub-collectors before the eventual arrival at the processing factory.

Opportunities for mishaps within the supply chain were numerous, and accountability back to the source of any problem was virtually non-existent. That system had to be improved.

The changes in the dairy industry are just one part of the big change throughout Chinese agriculture, with capital and modern technology replacing traditional ways. Linked to this, there is a move to the cities of 12 to 15 million people a year. This internal migration out of agriculture and rural lifestyles can be expected to continue for the next 30 years.

It is in the pig and dairy industries where the changing structure of Chinese agriculture is most evident and spectacular. In these industries the new model is not one of expansion and aggregation of existing farms, but rather the initiation of new large-scale corporate entities.

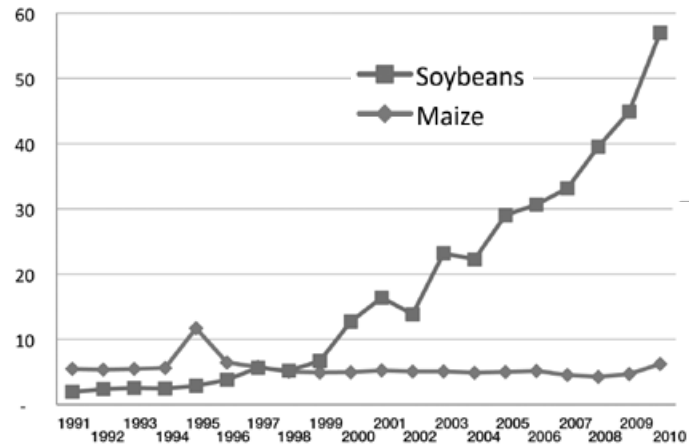
The big dairy players are all moving to businesses of between 100,000 and 250,000 cows, with annual milk production of 80 million to 250 million litres. To put that in perspective, on an average New Zealand dairy farm there are about 400 cows producing about 1.5 million litres a year.

### Not the New Zealand system

The new dairy farms in China are based on total mixed rations supplied to housed animals. The New Zealand system of pastoral farming is simply not a realistic option. The new dairy production entities are nearly all in the north of China, particularly in Manchuria and Inner Mongolia. It is these regions where mechanisation of the feed production is easiest. In southern China most of the land is hilly and the majority of production comes off terraced land where it is very difficult, and in some cases impossible, to implement large-scale mechanisation.

Despite the increased feed production by mechanisation, the feed and fodder coming off the northern lands is insufficient to feed the new pig and dairy farms. China is already importing large amounts of soybean and maize, with much of the soybean coming from Brazil and Argentina, and the maize coming from both South and North America.

Million tonnes



**Maize and soybeans imports to China 1991 to 2010**

Source: FAOSTAT

Imports of soybean to China have increased nearly 10-fold between 2000 to 2009. Unofficial trade data indicates there have been further increases since then, with Chinese imports of soybean likely to consist of 25 per cent of total global soybean production in 2013, and totally dominating international trade in this area.

New Zealanders might question whether this production model is profitable or sustainable. However, the answer to the profitability question is that currently it undoubtedly can be. Part of the evidence for that comes from Fonterra's own operations in China.

### Fonterra in China

Fonterra does not provide data on the profitability of its China-based farms but the overall message is clear – the company would not be expanding its operations if they were not profitable. Fonterra is currently developing its fourth and fifth farms and this will give them about 15,000 cows in milk at any one time and annual production of about 150 million litres. This is just the first step towards a projected 100,000 cows and a billion litres of milk a year by 2020.

In broad terms, the cows taken to China from New

Zealand produce 9,000 to 10,000 litres per lactation under Fonterra's management system. This is more than double the production under New Zealand conditions. The milk sells for about four RMB a litre at the farm gate, equivalent to 80 New Zealand cents. Currently Fonterra's milk is being collected by other processors who pay a premium over other locally produced milk due to the low bacteria and somatic cell counts.

The milk solids percentage on Fonterra's China farms will be lower than under New Zealand conditions, but this still works out at about NZ\$10 a kilogram of milk solids. For many dairy operations in China, there is less incentive than in New Zealand to increase the milk solids percentage, as milk is paid by the litre. This lack of emphasis on increasing milk solids could change if Fonterra were to build its own processing plant and create a fully integrated supply chain for its China operations.

### Occupying strategic space

Currently the feed costs probably use about 50 per cent or more of income on the Fonterra farms. Labour intensity is high, as milking is three times a day, and output is about 300,000 litres a year per worker, or perhaps a little less. However the overall economics stack up. The big question is what will happen if the big herds increase a great deal more. Where will the feed come from? Can it come from China and, if not, where will it be drawn from and at what cost?

In terms of the future for Fonterra's China operations, we often hear people in New Zealand asking what Fonterra's

strategy is for the China-based farms. However, we never hear that question in China. Chinese thinking is usually about occupying the strategic space and then seeing how the inevitable opportunities evolve. To many Chinese it is obvious that dairy production is a good space to be in. In addition, to the Chinese it is obvious that if Fonterra wants to be a long-term player in China, with milk products produced from New Zealand, then they will also need complementary production from within China.

### Opportunities for New Zealand

So far, most of New Zealand's dairy exports to China have been commodity-based and predominantly whole milk powder. New Zealand totally dominates China's imports of whole milk powder but there are also major imports of whey from Europe and the United States, where it is a by-product of cheese making. Whey is particularly important for infant formula, given that most of the proteins in human milk are whey.

New Zealand has a free trade agreement with China, still the only OECD country to have such an agreement, but most of the dairy exports to China pay the same tariff as from elsewhere in the world. This is because when the agreement was negotiated, New Zealand officials did not expect the spectacular growth of exports which has subsequently occurred. With hindsight New Zealand should have pushed for higher quotas of tariff-free imports.

The reality remains that the free trade agreement with China has created a very favourable political environment



Fonterra's North American style dairy system at Yutian





Organic milk powder of unknown New Zealand provenance selling for \$86 per 800 gram can in Beijing



Organic milk from the USA selling at \$8.60 a litre in Beijing

under which all New Zealand exports have prospered. The agreement has been taken by Chinese companies as a signal from their government that New Zealand is a good country to do business with.

The big question is whether or not New Zealand could be doing a lot more to sell premium quality dairy products to China. There is no doubt that foreign-sourced production can sell at major premiums, often more than double the local price. Infant formula is the best known example, but there are also very substantial premiums for ultra-heat-treated milk and what are known in the trade as growing up milk products.

### Fresh milk

Most of the fresh milk in China is ultra-heat-treated, which does not need to be refrigerated until opened and has a shelf-life before opening of at least six months. Given that the production base is in the north, but much of the population is in the middle and south, this Chinese reliance on ultra-heat-treated milk is unlikely to change.

Many New Zealanders do not like the taste, but much of the developed world, including European countries such as Spain, use it as their staple product. It seems the local prejudices against ultra-heat-treated milk have blinded the New Zealand companies to the opportunities. For a long time it seemed the only way forward was to dry the milk and export it in that form.



Anchor butter selling for \$3.60 for 100 grams in Xining supermarket in western China

Fonterra does now market ultra-heat-treated milk in China under two brands. For the food service industry they use the Anchor brand which is well known internationally. This is also known in China as a butter brand, and almost all western-type hotels have Anchor pats of butter. In the supermarkets Fonterra is now testing a brand called Country Goodness, but we have been less than impressed with this.

When we first saw it in a Xi'an supermarket we were convinced it was a fake, but when we sent pictures to Fonterra they told us it was the genuine article. We thought the packaging was inferior and a lot of it looked damaged. But the real problem is that this is an unknown brand. Potential Chinese consumers quickly go online looking for evidence that brands are sold in other countries, particularly the country of origin, and would be less than impressed by the absence of information.

We are not aware of any other New Zealand brands of ultra-heat-treated milk sold in China. It is easy to find milk from Australia and Europe in top-end speciality shops, but not from New Zealand.



**Somewhat battered Country Goodness ultra-heat-treated milk in Xi'an supermarket**

## Infant formula and nutritional goods

The way that infant formula was stripped from supermarket shelves in New Zealand and Australia during 2011 and 2012, before export regulations to prevent this were enforced, is an indictment of how New Zealand firms have mismanaged the dairy supply chain. How is it that Chinese entrepreneurs could buy the product at retail prices from New Zealand supermarkets, assemble it into large pallets and containers, export it to China, repackage and still make money?

There is evidence that New Zealand is now trying to catch up. Currently there are a number of small-scale entrepreneurs who are attempting to export infant formula to China. However, what the Chinese want is well known brands. In April 2013, Fonterra announced that in future it will be marketing its own infant formula brand called Annum. A2 Corporation is also close to launching its own brand called A2 Platinum, with the product manufactured in New Zealand by Synlait and marketing in China handled by China State Farms.

Synlait also produces Canterbury Pure infant formula, which is marketed by Shanghai-based Bright Food. Westland Dairy Co-operative also has plans to enter the fast moving consumer goods nutritional market and its Easy-Yo product is already available online.

## Integration and the future

In the same way that New Zealand companies are starting to integrate through to China, Chinese dairy companies are integrating back to New Zealand. In early April 2013, major processing investments by Chinese dairy companies Yili and Yashili were approved by the New Zealand Overseas

Investment Office. These companies see Fonterra, in particular, as a future competitor on the shelves in Chinese supermarkets and wish to have their own independent supply. It is all part of a global phenomenon towards integrated supply chains.

Looking into the future, no doubt there will be a few hiccups and not everyone will prosper. Food safety scares are always the big unknown, as happened just as this article went to press. But the overall prospects for New Zealand dairy products into China are strong. Even if overall growth of the Chinese economy slows, there will be increasing demand for consumer goods as the economy moves from investment to consumption.

## Low risk or high risk

The big question is the extent to which the New Zealand dairy industry is satisfied with being a low-risk supplier of commodities. Do companies in this country want the higher risk entrepreneurial profits from further down the value chain? As well as the mainstream fast moving consumer goods there are opportunities for niche products such as yoghurt powder sachets and lactose-free products.

If New Zealand does want to have a stronger position with fast moving consumer goods, it will be necessary to find the right partners and manage the logistical complexities in a country where there are more than 150 cities with a population of more than a million people. Getting access on to supermarket shelves is not easy, and Chinese supermarkets do not have the centralised distribution centres which are found in most western countries.

There are growing opportunities for online selling directly to consumers and this is how Chinese are increasingly buying their food. The wide use of smart phones has also made online shopping more appealing to the Chinese. There are now about 320 million smart phone users in China who are capable of purchasing online almost anywhere and any time, including chilled and frozen products delivered direct to apartments.

There is no doubt New Zealand has been slow to recognise the unique opportunities which have arisen from Chinese consumers not trusting their local products, along with the rapid growth in the number of users of online shopping devices. Hopefully the market will be big enough for everyone, including the late entrants.

However, even if New Zealand companies decide that this is all too hard, there will be increasing competition for milk at the New Zealand farm gate as Chinese companies reach back to New Zealand for a contracted supply of milk. There is an inevitability that, over the next decade China, is going to want even further increases in dairy products from the international market.

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