

## Milk tanks

How has an industry that enriched the economy with “white gold” been dealt such a body blow by global milk prices?

By Rebecca Macfie In Business

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*Mid-Canterbury share milkers Will and Kimberly Grayling own 1000 cows and a share in a farm. Photo/Joseph Johnson*

Will Grayling is one of the dairy industry’s brightest young talents. The 30-year-old has a Master’s from Lincoln University, is a past Young Farmer of the Year and was tapped two years ago by Rabobank to join a select “master class” of emerging global farming leaders.

But even he can’t make money out of dairy farming this year, with the milk payout at \$3.90 per kilo of milksolids.

Grayling and his wife, Kimberly, are climbing the well-worn rungs of the industry's career ladder, progressing from managing an 800-cow farm to running a larger neighbouring operation belonging to the same corporate owner, before taking a financial stake in the industry as share milkers. They own a third of the cows (about 1000 animals) on the two-farm operation in mid-Canterbury, as well as a small equity share of one of the properties.

In their first year as share milkers they were rewarded with a record-breaking payout of \$8.40, which allowed them to reduce their debt. The following year the forecast was \$7, but ended up plunging to \$4.40. At the start of this season the talk from Fonterra was of a likely recovery and a payout of \$5.25, but this month came the dismal news that it had sunk below \$4 – the lowest for a decade.



*A giant cow statue on the roof of a dairy production facility in China. Photo/Getty Images*

“We didn’t expect it to go as low as it has, especially for two or three years,” says Grayling. “That’s what’s caught us out a little bit.”

No wonder. In the early 2000s, payouts of below \$4 were commonplace, before the international market for milk pushed prices to new and volatile highs after 2007. Payouts above \$6, \$7 and even \$8 unleashed a tide of cash through rural communities, and prompted talk from farming commentators that “the old \$4-6 is the new \$6-8”. The implication was that there had been a “step change” in the market for milk, and that rising demand for protein from the growing middle classes of China and other emerging economies was an immutable law of economics that would favour New Zealand dairy farmers.

The industry may have got “a bit carried away” with that hype, says Grayling, who needs a payout of at least \$4.50 to pay the bills. He and Kimberly are rewriting their budgets, trying

to be more efficient and trimming costs where they can. At this point they haven't chosen to reduce cow numbers – as many farmers have – although he's well aware that the value of their animals has been savagely eroded by the downturn.

Nor are they stepping back from a high-intensity farming system of four cows per hectare, a staff of 13 and a heavy reliance on bought-in feed – barley, silage and imported palm-kernel extract.

Perhaps most importantly, their bank manager has been “realistic”, and Grayling expects that attitude to prevail for farmers such as them who have “solutions lined up”.



*Photo/Getty Images*

## **SUPPORTIVE BANK**

Further south, long-established dairy farmer Rob Van Vugt is equally sanguine. He farms with his wife Raewyn in the rolling pastoral district of South Otago, moving there from the West Coast in the 1990s to become share milkers in what was then an emerging dairying district.

In 1997, they bought their first property, and converted it from sheep to dairy. The deal “maxed” them out at the time, but within two years the capital gain on the property allowed them to gear up to buy a second farm. Every couple of years they were able to do the same – borrow against their previous conversions, which dramatically increased the underlying value of each, and buy another farm. They bought another two dairy properties recently, which they will take over in June. That will bring their portfolio to 11 farms supporting 5000 cows, including eight dairy operations and three grazing support properties.

Land values in South Otago have never reached the levels of Waikato, Canterbury or Southland, says Van Vugt. That has meant the couple's dairy conversions produced positive cashflow within their first season. But even with moderate debt and a relatively low-cost grazing system, their business needs a payout of about \$4.25 to cover costs. So they, too, will be in the red this year.

But Van Vugt says the couple have the support of their bank and their debt levels are not high risk – “we've always preferred to have the banks coming to us rather than us going to them”.

“Our biggest concern is for our share milkers. Two years ago their cows were worth \$2000 or more [per head], and now they are probably worth \$1300-\$1400. How does any business cope with that?”

Farmers in the district are “a bit flat”, he says. “But it's life. Nothing is guaranteed to make money. Looking forward you have to have a bit of belief that things will improve.”

Although at opposite ends of the industry career spectrum, both the Van Vugts and the Graylings expect to tough it out through the downturn – as do other farmers the *Listener* has spoken to. But there is no disguising the severity of the crisis. Farm consultant James Allen of AgFirst says 80-90% of dairy farmers will lose money this year. According to Dairy NZ economist Zack Mounsey, the average farmer will end the year with a cash loss of \$210,000.

Van Vugt and Grayling both have significantly lower costs of production than the industry average of \$5.25/kg of milksolids. But the range is huge; according to DairyNZ economist Matthew Newman, the most expensive farm operations need a payout of \$6.50 to break even – so for every kilogram of milksolids produced, they will be \$2.60 in the red this season.

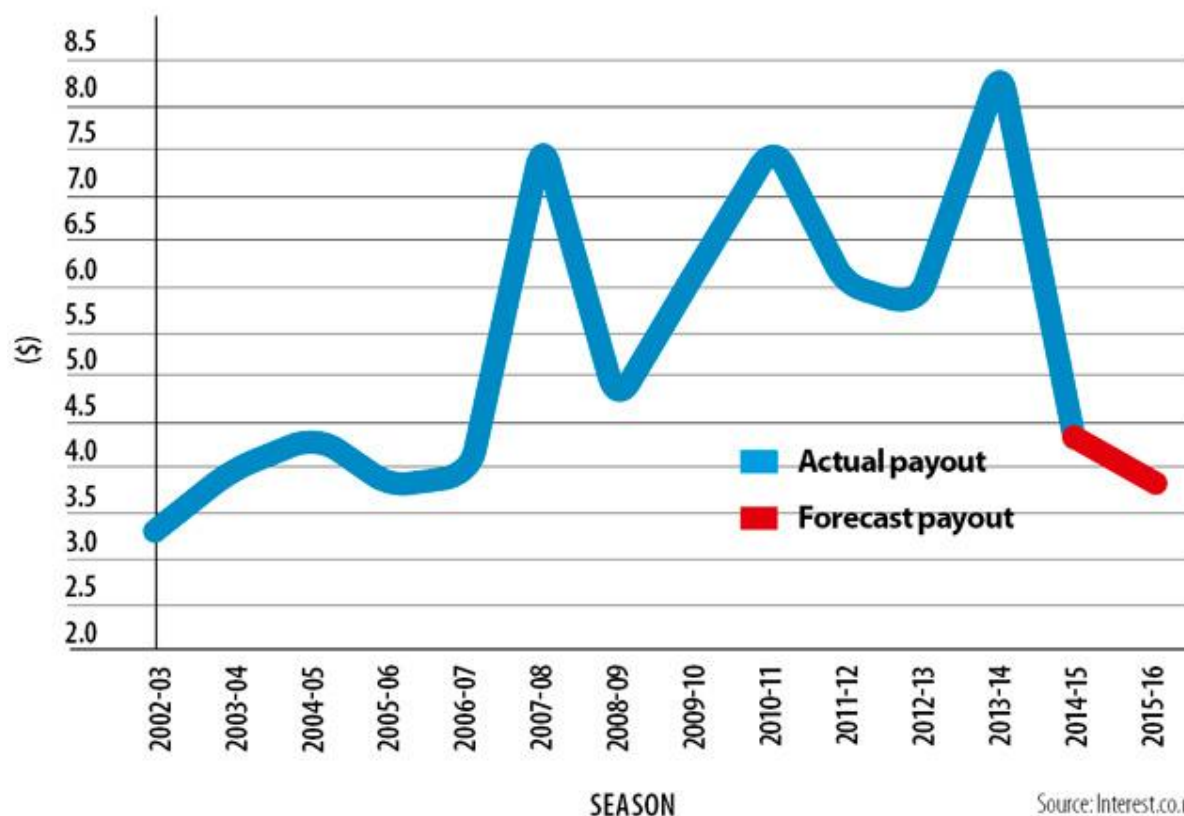
Federated Farmers surveying shows a growing number of dairy farmers are under pressure from their bankers – 11%, compared with 7.6% last November – although Allen believes the financiers are being largely supportive at the moment. But what if payouts remain below break-even levels for another year, or longer? A Reserve Bank report published in December 2015 reached the startling conclusion that in a “worst-case scenario” of a slow payout recovery and a sharp decline in land values, 44% of farm loans would be non-performing by 2018-19.

Allen says the banks “have as much to lose as anyone if land prices collapse. But that doesn't avoid the fact that there are some that will have to be sold up and exit the business.”

He thinks fewer than 5% are in that category this season, “but if we have another really low year ... I'd hate to speculate, but there will be a proportion that just have no equity left and the banks say ‘this is the end of the road’.”



## Falling Fonterra payout (per kg/MS)



### SHARE MILKERS VULNERABLE

Among the most vulnerable members of the industry are share milkers operating under so-called “variable order” contracts. They don’t own the cows (as is the case in herd-owning 50/50 share-milking contracts), but they take on the risk of paying the farm’s day-to-day operating costs, including staff wages, in return for a share of the milk payout (usually between 18% and 30%). About 1900 share milkers are on these contracts, which are often seen as a good first step towards eventual farm ownership as they don’t require equity. In a good year (such as in the \$8.40 payout year of 2013-14) they can generate a handsome return on an aspiring young farmer’s labour.

But this year “they’re getting smoked”, says Federated Farmers share milkers’ spokesman Neil Filer. “On larger farms they have a lot of fixed costs – a lot of labour, animal welfare and so on. Everything’s got to be done, and they can’t just fire all their workers.”

Allen says depending on the scale of the operation, variable-order share milkers will be down \$30,000 to \$200,000 for the season, without the ballast of equity in the land or a herd to keep them afloat. Concerted efforts are under way by Federated Farmers, industry body DairyNZ and Fonterra to find solutions such as shifting them onto fixed price contracts that will provide a guaranteed minimum income, or encouraging the farm owner to take over the payment of staff wages. But such solutions rely on the owner having enough financial leeway – and empathy – to provide support, and there are anecdotal stories in the industry of some variable-order share milkers simply walking away from their contracts.

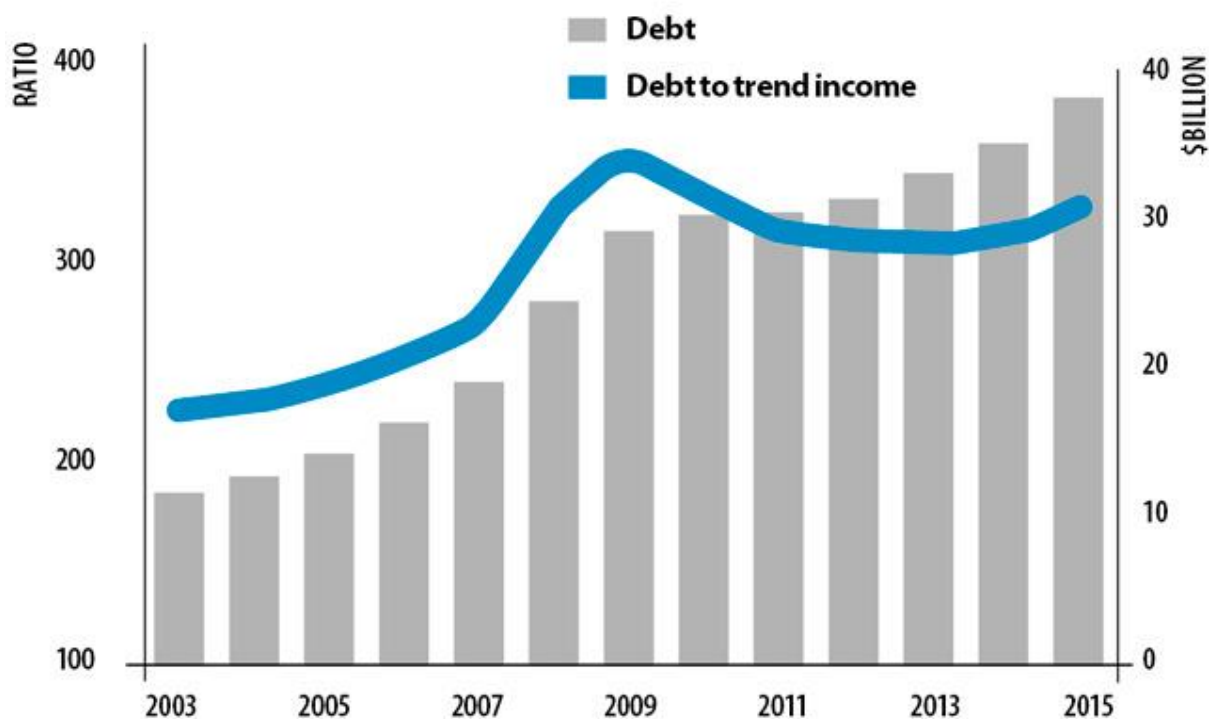
The trickle-down effect on rural communities of farmer spending cuts is already being felt. Winton vet Mark Bryan says farmers have been watching the global dairy auction price slide

and pruning spending over the last year. He's concerned that spending on animal health has dropped 20%, and fears an "insidious" impact on the welfare of both herds and farmers.

If, for instance, the level of sub-clinical infection in herds is allowed to creep up to the point where the risk of clinical mastitis is increased, farmers could end up with an expensive problem to treat, which would also hit their productivity.

"It's the same with vaccination programmes, which are all about risk management. So farmers may make decisions not to vaccinate young stock this year and hope to get away with it – but they may not, and if they don't it will cost them, and in the current environment they then can't afford to treat the problem."

## Dairy sector debt



Source: RBNZ Annual Agricultural Survey, DairyNZ, RBNZ calculations

*Dairy debt has increased nearly 400% to \$38b since the early 2000s. Farm production has increased only 65%. Dairy land values have doubled in inflation-adjusted terms since 2000, but if payouts remain under \$5 for three seasons, the Reserve Bank forecasts land values could fall by 40%.*

### DRIVE FOR MORE VOLUME

How did it come to this? How has an industry that claimed to be enriching the country with "white gold", that has put ever-more cows (five million today, twice as many as 25 years ago) onto ever-larger tracts of land (1.7 million hectares, up from one million in 1990), been dealt such a body blow by milk prices that would have been considered normal just a few years ago?

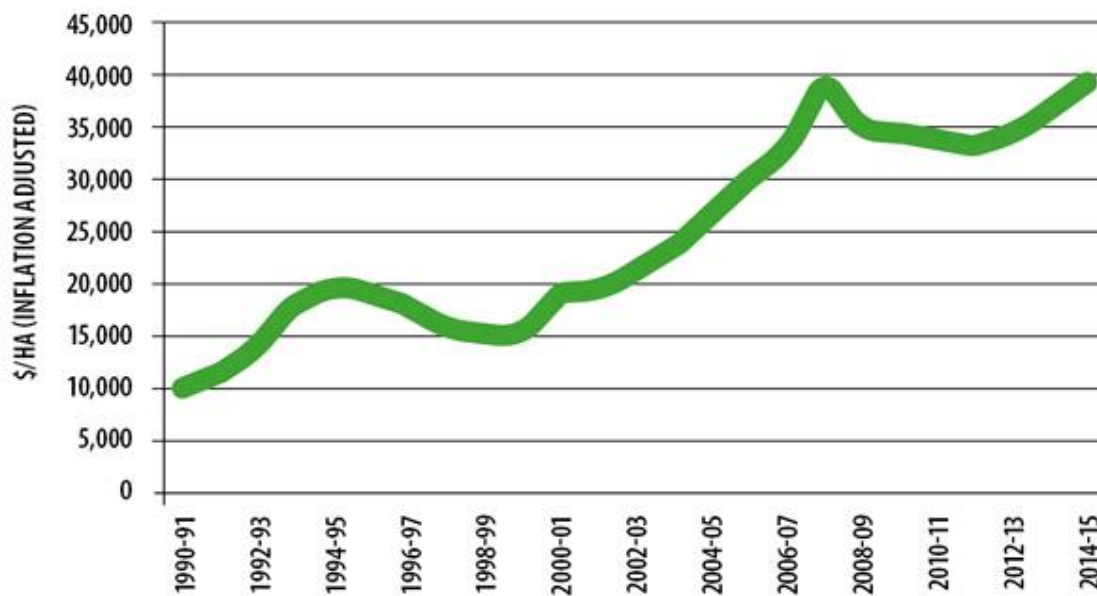
One reason is that the dairy industry has largely turned its back on the very foundations of its success – cheap grass. In the push for more production – from Fonterra, which has sought bigger volumes of milk, from the Government, which aims to double farm exports by 2025, and from feed and fertiliser companies selling product – most farmers have moved

away from the traditional all-pasture system. According to Dairy NZ, 15 years ago 70% of farmers relied only on the pasture grown on their farm to feed their cows, but by 2014 that had dropped to 30%. And even that may be an over-statement – agricultural ecologist, vet and former dairy farmer Alison Dewes says that based on information held by her company, Tipu Whenua, the number of all-pasture farmers could be as low as 15%.

In other words, somewhere between two-thirds and 85% of farmers now rely to some degree on bought-in feed such as palm kernel to sustain a more intensive production system than would be possible from pasture alone.

The outcome of this intensification has been more cows per hectare and more milk, but also more nitrate leaching into waterways and more greenhouse gas emissions.

### Dairy land prices per hectare (inflation adjusted)



Source: DairyNZ Economics Group, Quotable Value, REINZ

Dewes and agricultural economist Barrie Ridler have long argued that this drive for more volume has not been justified by increased profitability, and has instead led to a more indebted and less resilient farming industry. Dewes has worked with farmers to develop low-input systems and found that the same amount of milk can be produced from 20-30% fewer cows per hectare, with the farm generating 60-100% more profit at a milk price of under \$6. Such a system also benefits the environment, with a 40% reduction in nitrate leaching and 20-30% less greenhouse gas emissions.

Ridler says in pushing for intensification, the industry has relied on flawed models that work on farm averages and benchmarks, and failed to identify whether the marginal cost of running additional cows and buying extra feed generates an equivalent increase in profit.

In a 2014 paper, he and agricultural consultant Peter Fraser argued that most dairy farms are systematically overstocked, with marginal costs that are higher than marginal revenue.

To support their case, they cited the experience of the high-performing Lincoln University dairy farm, which reduced cow numbers by 5% yet increased profitability by 15%.

Ridler – a former Massey University lecturer in farm systems – puts it another way: “Let’s say we should be running 300 cows on a farm, but because of intensification we are running 500 cows. Those extra 200 cows are parasitic cows. They are reliant on bought-in feed, they’re costing a whole lot more in labour, fertiliser, and shed costs. And because we are averaging returns across all 500 cows, we are saying ‘we are making money’. But we are hiding the big losses that those 200 extra cows are making. And at a time when the milksolids price goes down, suddenly that parasitic herd is finishing us off. It’s that simple ... the profitable herd has been disguising the losses that the parasitic herd has been making for the past six to eight years.”



*Dairy farmers Kimberly and Will Grayling say they need a payout of at least \$4.50 per kilo of milksolids to break even.  
Photo/Joseph Johnson*

## **RISING LAND PRICES**

But if Ridler and Dewes are right, this surely implies that the industry – and by association its bankers – have been behaving in an economically irrational way. Fraser says that’s where rising land prices come into the equation. Dairy debt has increased nearly 400% to \$38 billion since the early 2000s, but farm production has increased only 65% (despite the huge increase in high-intensity farm systems), suggesting the reward for farmers has come in the form of higher land values.

Fraser describes farm conversions as “real estate plays” – a sheep farm converted to an intensive dairy farm gains an immediate lift in capital value. “The question is to what extent



the banks have been lending against capital gain rather than cashflow and fundamentals. I think there has been a big chunk in there on capital gains.”

Dairy land values have doubled in inflation-adjusted terms since 2000. So what will happen to those values now, as a result of a payout that has left most farmers unable to pay their way? Under the Reserve Bank’s most severe scenario for the sector (in which payouts fall to \$3 this year and remain under \$5 until the 2019-20 season), land values would fall by 40%. Fraser thinks that figure is realistic, saying milk prices have reverted to the levels of the mid-2000s, so it’s reasonable to expect land values to falls to where they were at that time.

“At the moment they are about \$50,000 a hectare and back then they were \$25,000-\$30,000. So that’s a \$20,000 to \$30,000 haircut per hectare, or around \$30 billion written off farm balance sheets.”

However, the banks won’t want to “spook” the market for land by forcing indebted farmers off their properties, he says. “I think they will increasingly do trade sales and ease people out ... But if farmers are facing a total loss on land values of \$30 billion, they won’t be cashed up enough to buy that land when it comes on the market, and in any case I don’t think the banks will lend to them. The banks will be looking for someone who can pay cash, and that’s overseas money.”

University of Waikato economics professor Jacqueline Rowarth made the same point more bluntly in the wake of Fonterra’s \$3.90 announcement: “We are staring down the barrel of losing our best land overseas.”



*Photo/Joseph Johnson*

## GRASS IS GREENER

Dewes, Ridler and Fraser have long been regarded as renegades by the industry, but DairyNZ is now urging farmers to back off high-intensity farming systems and rediscover the competitive advantages of traditional grass farming.

Chief executive Tim Mackle says the industry organisation never abandoned the pasture-based model, nor did it push farmers into high-intensity systems. He says the 2007-08 season was a turning point, when soaring milk prices coincided with drought in the Waitako and farmers used imported feed to get them through the dry period. From then on, the use of increasingly expensive bought-in feed – including palm kernel, imports of which reached two million tonnes in 2015 – became embedded in the industry.

Mackle says some farmers also chose high-input systems because of rising land prices. Those who might once have expanded by buying the neighbouring farm found land prices too steep and chose instead to extract more production from their existing farm by buying extra feed and increasing cow numbers.

He says DairyNZ is trying to turn things around and saying to farmers: “Work out how much your farm can grow and harvest, then adjust your stocking rate to suit that, as opposed to deciding how much feed [you] want to bring in and then adjusting things. What that does is put the emphasis back on producing home-grown feed.”

The organisation has been working on its “pasture first” campaign for the past six months.

He says DairyNZ is looking to farmers to challenge themselves to ask, “are they really pasture first, are they really understanding how much their farms can grow and how much they can harvest. This isn’t new. It’s just a matter of bringing it to the forefront.”

But after a decade-long shift away from that tradition, he acknowledges the risk that the industry has lost some of the intellectual capacity that supports a pasture-based system. “I do think we have lost our way a little bit.”

A 2015 study paper by Mounsey and distributed by DairyNZ suggests he’s right. Mounsey analysed low-, medium- and high-input dairy production systems and arrived at a conclusion that aligns strongly with what Dewes, Fraser and Ridler have been arguing for years – that the move to more intensive farm systems has not increased profitability, and has eroded the industry’s international competitiveness. Over the past 10 years, New Zealand’s cost of production has moved closer to the historically higher-cost systems of the US, Ireland and the Netherlands, according to Mounsey’s paper, with Australian and Irish production prices lower than New Zealand’s.

Dewes condemns the industry’s “pasture first” move as “too little, too late from farming leaders who should have been watching profit, not production. This misguided perception has now left so many farmers in a stranded position, because you can’t flip systems quickly – it’s a five-year process.”



*Photo/Joseph Johnson*

## **LONG SLOG AHEAD**

The vulnerabilities of the industry have been exposed by the global mismatch of supply and demand. European farmers surprised everyone by ramping up milk production more quickly than expected after the removal of quotas last year; sanctions against Russia following the annexation of Crimea have forced surplus supply into other markets; Chinese demand is down and it is sitting on large stockpiles. In Europe and the UK, producers are not yet responding to the “pain” of reduced prices by cutting production because market signals are muted by subsidies and support payments, says Rabobank analyst Emma Higgins.

“It really is just an over-supply issue at the same time as sluggish demand,” she says. “It will take a while for these fundamentals to rebalance. It will be a long slog and we are in a very prolonged trough, unfortunately, which we will take some time to climb out of. But once we do, New Zealand is well placed to maximise on any upswing in pricing.”

Massey University’s James Lockhart, Hamish Gow and Daniel Donaghy argue in a recent paper that the outlook is rather more complex and that the New Zealand industry has been the victim of its own assumption that dairy prices would keep on going up.

They accuse the industry of failing to spot big structural shifts in the global milk market, and argue that following the strong upswing in demand from Asia between 2006 and 2014, the world has entered a new “supply-demand equilibrium”.

Lockhart says while the industry was focused on rising demand from China, it missed the rising supply from other countries that have figured out how to produce milk just as well as

New Zealand. The removal of EU quotas, in particular, has freed up dairy farmers in central and eastern Europe to “increase scale considerably, availing themselves of technologies denied during the Cold War years”.

In China, 100,000 cow mega-dairies are under development, and New Zealand’s No 1 market could conceivably become an exporter – already there is “a high degree of certainty” that China has been trading milk with Russia while the latter was subject to sanctions, he says.

In Brazil, vast areas of agricultural land are being “turned on”; in Kazakhstan and Uzbekistan there is “a whole lot of New Zealand technology doing exciting stuff, which has a significant impact on their ability to contribute to supply. Yes, they have an emerging middle class, but they also have a resource base of land that is untold bigger than ours.”

It’s easy to assume that with 7.4 billion people on the planet, the demand for New Zealand milk can only go up, says Lockhart.

“But these countries’ abilities to feed themselves in the BRICs and other [emerging] economies that have suddenly got hold of development [skills] is absolutely fantastic.

“We have completely ignored those countries’ ability to supply.”