Posts from Keith Woodford

Commentary on agriculture, rural development, and wider issues

Agricultural GDP leaves out more than it includes

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Agricultural GDP catches well under one quarter of the agribusiness system. As such it fails to capture the importance of agribusiness to the economy.

One of the problems facing New Zealand's agriculture is a widespread urban perspective that agriculture is not important to the New Zealand economy. To a large extent, this perspective is built around the fact that agricultural GDP, as officially measured, is only between four and five percent of GDP.

What few people understand is that the definition of agricultural GDP depends on historical notions of what a farm was and is. The notion goes back to the days when agricultural output was largely the output of what the farmer himself did. And in those days, it really was a 'him' who relied on his own muscle power and that of his horse.

To cut to the chase, agricultural GDP excludes all farm inputs as intermediate goods. Those exclusions include, for example, all animal health inputs including veterinary services, plus the value of fertiliser inputs.

Agricultural GDP even removes the economic contribution of shearers and every other contractor that comes on to the farm. These contributions go into a 'support services' category that sits outside of agriculture.

My interest in the issue of agricultural GDP and how it is mis-used was piqued by a recent report by the New Zealand Institute of Economic Research (NZIER). This report was written under a contract carried out for Fish and Game, Forest and Bird, and Greenpeace.

NZIER used figures for dairy's GDP contribution to develop their claim that "New Zealand's new fresh water regulation rules will have no major impacts on the national economy". Yeah, right, I said.

With statements like that, it is no wonder that there is a huge urban and rural divide. How can such a statement be correct?

The NZIER headline claim, supplied by NZIER itself, was not specific to dairy, However, the report itself did focus totally on dairy. That in itself is intriguing. Many sheep, beef and arable farmers would be more than a little put out that their own issues are not worthy of mention as being relevant to such a broad-ranging claim.

The answer to the extraordinary NZIER claim is that it is based on using a very narrow definition of GDP. That definition assumes that all the rural contractors, consultants, truck drivers, rural vets, fertiliser company workers, and so on could find other things to do if there were no agriculture industries, and would suffer no loss of income.

In economic language, these resources are assumed to be transferable across the economy.

As for the current value that these people are providing, that is already allocated to other sectors such as manufacturing and professional services. Some are even allocated to agricultural support services, but this does not then make its way back into agriculture itself.

I have even been advised by Stats NZ that sharemilkers belong to the agriculture support category and are not within agriculture itself, although I have been seeking further confirmation on that. If correct, that would be truly remarkable.

NZIER does acknowledge that dairy's importance extends beyond the farm gate. Accordingly, it does bring back into its overarching figure the value-add associated with dairy processing. But it is only the core of processing that is added.

On this basis, NZIER calculates that between 1991 and 2017, the average combined direct contribution of dairy farming and dairy manufacturing was 3.09 percent of GDP.

I have checked this figure for the most recent available year which is 2017 and I have no question in relation to its technical accuracy. If I calculate the numbers on the same greatly flawed basis, excluding all inputs to the farm, excluding transport to the processor, and also excluding anything after the processor as being part of the separate food and beverage industry, then I come up with a similar number.

The problem is that it is based on concepts that belong back in the dark ages.

Way back in 1957 two academics at Harvard University, John Davis and Ray Goldberg, came to the realisation that agriculture was so much more than the net value of what was added on the farm. As a consequence, they wrote a book called 'The Concept of Agribusiness'.

Davis and Goldberg realised that agriculture and agribusiness were really a network of interdependent activities spanning farm inputs, farm production, product processing and marketing. If we want to measure the value of this interdependent system then we have to look at the total value of output.

In New Zealand we have been slow to embrace those notions of an agribusiness system. It is as if there is still a firm divide between what happens inside and outside the farm gate.

When I was considering coming back to Lincoln University in 2000, following 20 years of working internationally, I was only interested in coming back to Lincoln if my professorial title spanned the agribusiness spectrum.

At my interview, I said that I wanted to knock down the psychological importance of the farm gate, and if that was not consistent with the Lincoln vision of the future, then don't appoint me.

When I retired from Lincoln at the end of 2014 and moved to an honorary position, I negotiated a new title as Professor of Agri-Food Systems. There were two reasons for this.

One reason was that I wanted to create space for whoever was the new professor of farm management and agribusiness. As it turned out, Lincoln decided to revert to the to the old title of 'farm management' as held by my predecessors.

The second reason I chose 'agri-food systems' was because it seemed to me to be very important that recognition be given to the notion that agriculture fitted with a system that was much broader than just business. There was a need to look at the whole agri-food spectrum as something that integrates the biological, ecological, social and business spectra.

Linked to this is the notion that although farm managers manage within the farm gate, nearly all of the big decisions are a function of what happens outside that gate.

Calculating the total value of the agribusiness sector is not easy. But here is a start using Stats NZ data for 2017.

The value of all agricultural inputs in that year was $13.7 billion.

The added value on-farm (what Stats NZ calls agricultural GDP) was $11.3 billion.

The farm-gate value of production was therefore 25 billion.

The value-add of basic processing of agricultural products (excluding sea-food) was $8.4 billion.

These all add to $33.4 billion, comprising 12.4 percent of traded GDP.

This still does not include any of the marketing contribution.

In contrast, most of GDP is made up of services that we sell to each other. Examples are financial services ($15 billion), professional services ($25.5 billion), retail trade ($12.3 billion), media and telecom ($6.7 billion), rental and real estate ($19.7 billion) and government services (> $40 billion)

Starting from a different point, and looking at exports, I note that pastoral exports in the June 2019 year were $28.6 billion and total primary-industry exports were $46.4 billion. These comprise 48 percent and 78 percent respectively of total exports. I also note that it is exports that drive the New Zealand economy.

Now, as someone who has actually spent periods of his life working as an economist, I also know that some economists will want to argue with me. Their key point will be to go back to the notion that if dairying or other parts of our agribusiness system were to go away, then that would liberate resources to be allocated elsewhere.

My counter is that most of the resources currently allocated to agriculture and in particular pastoral agriculture do not have a lot of value elsewhere.

Most of our pastoral soils are totally unsuited to arable farming. Yes, we can grow trees on a lot of them and then sell the carbon credits to the urban folk so they can continue their current lifestyles. But that won't earn export income. The credits will be just monetary transfers within New Zealand to help avoid having to purchase carbon credits overseas.

So, I want to hear from the urban folk (of which I am one) as to where we are going to earn export income to pay for all of those items we use in our daily life (cars, trucks, buses, planes, computers, smart phones, pharmaceuticals, overseas travel, and so on) but for which we have no international competitive advantage, and which we do not produce ourselves.

And I do say, how dare you ignore that challenge.

I trust that in answering that challenge the focus will not simply be that 'there has to be change'. All serious participants in the debate accept that change has to occur. Some of us are actually working on what that change could look like.

The NZIER report I referred to can be found here.

Update: Stats NZ has now advised me that sharemilkers are included in dairy farming but contract milkers go into support services and therefore their contribution lies outside agriculture.