

# PRESIDENTIAL ADDRESS –

## New Zealand needs more production pastoral research

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Last year I took this opportunity to express my views on the advantages of on-farm research, which generated some interesting discussion. This year I would like to widen the frame and discuss the state of New Zealand pastoral research, and in particular the type of research that comes through our Association, from my perspective as a farmer and user of research.

I have taken a particular interest in New Zealand research, because I emigrated to New Zealand. Since I did not grow up here, with the benefits of experience or New Zealand education, I have found reading research papers and attending conferences such as this one, a very useful way of firstly getting up to speed and now advancing our operations at Castlepoint Station.

I have been concerned about the focus of New Zealand pastoral research in recent years moving away from production research. An example of this would be the volume of papers that come through our proceedings, which although useful in some contexts, in my view will not be useful in generating economic returns. This year over a third of the papers appeared to cover subjects that would not generate a return on farm, but rather focussed on social science and modelling issues. Some of that work is interesting, but how much of it will really make a difference to the economy or environment?

### Funding research

I am heartened by some of the recent changes in the science funding scene. We are moving away from the vogue of the 1990s when the relatively new Crown Research Institutes (CRIs) were expected to make a return on capital and pay a healthy dividend back to the Crown. While this may have cured some potential previous excesses and put in place some sound business disciplines, the pendulum had swung too far and research was hoarded in hopes of being able to derive a return from it. Silos sprang up with a bunker mentality of defending intellectual property. Of course this tended to stop information flow (Dalton 2011) when ideas and research results should have been the focus of further development and use for New Zealand good. Policy has been changed and information sharing and extension is now part of the CRI mandate so the pendulum is starting to swing back again.

The consolidation of Foundation for Research, Science and Technology (FfRST) and the Ministry of Research, Science and Technology (MoRST) into the Ministry of Science and Innovation (MSI), in February this year, is another step in breaking down the silos that had been erected. This is part of the change in policy that encouraged the CRIs to share information rather than hoard it in hopes of generating individual returns. It also mirrors changes elsewhere, such as the 2007 merger of Dairy InSight and Dexcel into DairyNZ. While having different groups allocating funding and looking after projects may give clear lines of accountability, it comes with administrative and communication costs. From an administrative perspective it might be nice to have formal processes for allocating funding, but they may not be any more effective than less formal ones. Dr Grant Scobie put in nicely many years ago when talking about ways to allocate research funding. “Finally, many of the models proposed have been complex, difficult to understand and costly to implement. They require a large investment by skilled analysts and often involve considerable time of managers and scientists. These are scarce resources and the value of the information may conceivably be less than the cost.” (Scobie 1984)

We should have known that having too much annually contestable funding lead to scientists spending too much time on writing funding grants and reports and not enough time on research. However, I'm optimistic that we are learning and improving. As Santayana said “Those who cannot remember the past are condemned to repeat it.”

There are many different organisations funding research, each with their own special focus. In some respects this may be administratively inefficient, too many people doing similar jobs. However in other respects it works well, depending on the type of work that needs to be done different groups can be approached. Who funds what is currently the subject of discussion with MSI.

### Production research

Farmers will pick up on research when they can see how it will give them an advantage. New Zealand farmers have a long history of adopting new innovations: aerial top dressing, rotational grazing, electric fencing,

pregnancy scanning, or new endophytes. The advantage can come in a variety of forms: putting more cash in the bank would always be a top measure, however saving labour or having a more reliable farming system are also of high value. Unfortunately the systems nature of farming can be a barrier to uptake of new research. One “problem” with good science is the isolation of variables to make sure the hypothesis is actually being tested. For a farmer this can make it difficult to see how to fit one specific result into a farming system.

This is where on-farm research has an advantage: by being on farm it has to fit into an existing system. Research farms on the other hand, can set up isolated trials in ways that commercial farms might not be willing to do, or long term trials where a commercial farm might not be willing to carry out the same practice for many years (especially if it isn't seen as profitable). This is why it is important to maintain research farms. However, research farms don't necessarily have to be restricted to things that might not be profitable on a commercial farm. On-Farm Research running the Poukawa Research Farm provides a model for doing research on a commercial basis. The Lincoln University Dairy Farm run by South Island Dairy Development Centre is demonstrating the latest dairy farm system best practice as well as conducting research, especially on environmental effects.

Close to home for me in the Wairarapa is Massey University's Riverside farm. It would be great to see this as a model for the best techniques in summer dry hill country. Historically this has been a goal (Parker *et al.* 1993) but currently the “model” doesn't seem to be the driver. To an outside observer it seems that as the farm tries to produce an economic return, there has been the perverse effect of research projects getting done elsewhere. I suggest this may be a small scale example of what has been happening with the CRIs. Pushing to produce an immediate annual return on research is very difficult, and can lead to significant unintended consequences.

### Time lag

Another issue which bedevils many of the scientists here is how long it takes for new research to be adopted. It is recognised that there can be long lags before new is put into practice (Fuglie & Heisey 2007). While slow uptake may be frustrating, research can also continue contributing for decades (Hall & Scobie 2006).

As a practical farmer I feel if a new research finding gets picked up within three years it is doing very well. Many decisions on farm are made only once a year. If new information comes out after the decision is made, then it can not be implemented until next year. Only a small percentage of farmers are the early adopters who

will pick up new techniques without seeing it done by their neighbour or other trusted farmer, so there are only a small number who may have used the information by year two. Once the early adopters have shown the way, their neighbours might start picking it up in significant numbers. These lags can make it difficult to quantify the return on R&D investments.

### Bang for buck

Research dollars need to be spent where they will produce dollar returns. We can hope that recent consolidations of organisations will help, as less money spent on administration and overheads should leave more available for research. This is where I feel the type of research comes into play. We should not only avoid spending valuable research dollars on administration, but we should also avoid spending it on research that can never produce a dollar return. Social research and modelling can be done on tighter time frames and less cost than most production research. This probably made it more attractive to fund under past policies. It certainly is an important area to cover; it can facilitate extension efforts (Bramley *et al.* 2003), however, I feel it has been getting an over-allocation of funding.

Another area where we may be missing out is research done by commercial organisations. Often they do not want to publish the results for fear of losing a competitive advantage. However, New Zealand farmers have been well trained to ask to see the science behind any claims. We get a few papers from commercial organisations, but it would be really good to see more of them. Publication of strong scientific trials is an excellent form of guerrilla marketing.

### Extension

New Zealand used to have an active corps of dedicated extension specialists from the Farm Advisory Division of Ministry of Agriculture and Fisheries (then (Journeaux 1997)). This has somewhat been replaced by various industry groups, such as DairyNZ Consulting Officers and Beef + Lamb Extension Managers, as well as private consultants. The industry groups have a very strong focus on the research that they have funded and are working hard on the extension side of things to try and make sure the levy payers get value from the research they have funded.

Private consultants do an excellent job with those people who value their services in their region. Unfortunately they aren't evenly spread around the country and small operators may find it hard to justify the cost.

There is a huge amount of extension going on. There is no shortage of field days, discussion groups, seminars and conferences to go to. Is there too much going on?

Of course we all know the best thing to do is attend a New Zealand Grassland Association conference.

### **New Zealand Grassland Association**

The New Zealand Grassland Association plays an important role in pastoral research. The makeup of our membership with scientists, farmers and agribusiness is unique. This provides fertile ground at our conference and symposia for both getting the latest research directly into the hands of practitioners and getting new ideas for research from those who will eventually use it. In the future by working with other organisations we should be able to provide constructive input for areas of fruitful research.

### **Summary**

1. I would like to see more production research.
2. After many name changes and reorganisations and policy changes I am optimistic that the structures around New Zealand science will work.
3. Social science and modelling are important, but we can have too much of a good thing.
4. The New Zealand Grassland Association can have a constructive role to play in suggesting areas for research.

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