

NZIAHS Forum

**“Where do we want our dairy industry to be in 20 years time?”
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Is there a better use for our flat, irrigable land?

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Irrigation New Zealand is about sustainable water management. We are known for our advocacy and we do a lot around education, training, and research and development. We are putting a package together for the irrigation industry, recognising that to get irrigation you need design, installation, operation and maintenance.

A question often asked about dairy taking over so much land in the South Island is whether dairy is the only farming on irrigated land. Dairying in the South Island has surged from 17% of farming in ?? 2002/2003 to 34% in 2008/2009. Growth in Canterbury has gone from 117,000 hectares to 188,000 hectares.

It is harder to get irrigation statistics. Ministry for the Environment reports say major problems are posed because of the way regional councils record surface-water and ground-water takes. This can be double-counted on the same property.

But the statistics say the South Island takes up about 80% of the irrigation (it hasn't changed that much) and 60% or so is in Canterbury. The first set of figures comes from a MAF report on the economic value of irrigation. The second set comes from the Agriculture Statistics Survey.

I have made some critical assumptions and say 100% of the dairy area in Canterbury is irrigated. I am not so sure about the Otago figures. But if we accept the Canterbury figures, the dairying area has increased in hectare terms, while it has declined as a ratio to irrigatable land.

In short, dairy production does occupy a significant amount of New Zealand's irrigated land area but it is not the only land use. A challenge for the irrigation industry is to dispel the myth that irrigation equals dairy farming. If we are going to move forward with irrigation it means all land uses – it is an enabling tool.

Whether dairy makes the best use of irrigable land is a key question. I have randomly gone to an economic analysis of one of the schemes, the Hurunui project. Dairying is a significant land use but so is horticulture. Data from the NZ Institute of

Economic Research as part of a research project for Environment Waikato looked at the flow-on benefits of irrigation. Again it showed horticulture doing well and dairy doing reasonably well, but the arable results were not so good.

But water isn't everything and there are many other drivers around resource potential, such as labour, the market, climate, soils and the crops being grown.

Determining the best use for irrigable land is more complex than whether you should have irrigation, basically involving how much water is available and the reliability of the supply. Pastoral systems can work quite well with low reliability: farmers are getting constant returns and can bring in feed or can decide to move stock elsewhere. With arable farming and horticulture, however, low reliability impedes high-value cropping.

Reliability requires multi-purpose water infrastructure. Development of this is not being delayed by Resource Management Act regulatory process as much as it is by people's approach to it. A collaborative approach probably would be helpful.

Overcoming the misinformation and misunderstanding about water irrigation is another challenge. Irrigation can be highly beneficial when it comes to improving the environmental picture.

Farmer uptake was easy in the days when government funding was available and basically 75% of farmer support was enough to develop a scheme. Nowadays 100% support is needed. Otherwise supporters have to carry extra costs.

The other aspect of reliability is that it deals marvelously well with the externalities. Management systems improve when you have reliability. If you have uncertainty you tend to take a "just-in-case" approach because you never know when you will be turned off or where your next water is coming from. You are always topping up, taking a risk-management approach. But when you are certain you can turn the tap on whenever you want, you can maximize your use of rainfall, enabling you to do some really intelligent things. Optimal water use means optimal environmental performance, which means you need less water per hectare and your use of rainfall means you need less storage in the first place. If you are minimizing your losses from the rooting zone then you obviously will get less leaching, which all contributes to improved water quality and coping with those externalities.

There are two aspects of allocation. Setting the allocations calls for value judgements to be made and translating them into objectives and goals and into standards and limits. The important bit is transferability. Many people are talking about the need to re-allocate water, but in my view it is already allocated we have lots of infrastructure in which investment already has been made. What now is needed is transferability, to enable the movement of water to the best use. This brings technical efficiency, allocated efficiency and economic efficiency into considerations.

First thing to do is set limits. Without these you will end up with major problems. The other scenario to be managed is a community based process, working with those involved where you have an over-allocation. You will find that most farmers, when a problem is put to them, will find a solution.

There is a range of ways of giving effect to transferability. I doubt a market trading system will work in most places in New Zealand. For a market to operate volume and depth are needed in terms of numbers of people to create demand and resource scarcity, The Canterbury Plains is an exception: you have a good market place potentially for storage systems.

Water-take permits need splitting into take and use components, something likely to happen soon. The “use” bit will be for use on the land; the “take” bit requires clear definitions of the areas in which transfers can freely take place.

Part permit transfers need to be considered, too, and are likely to be introduced.

In summary, the answer to whether dairying is it the best use of irrigable land, probably it is at the moment. But the future will involve creating an enabling environment and letting the market operate. It also will involve setting limits, making value judgments, ensuring reliability and introducing transferability. The best use then will look after itself.