CASE STUDY: STUART NEIL

Making the border dyke transition

Janine Holland talks with Stuart Neil, a North Canterbury farmer leaving border dyke irrigation behind.

Getting rid of border dyke irrigation is not an easy decision, says Stuart Neil. For many farmers, there's an emotional and lifestyle connection to an irrigation system they and previous generations have operated for decades. However the North Canterbury farmer says it's a journey worth taking. The extra reliability and production gains achievable under modern spray irrigation, he says, leave border dyke for dust.

Three years ago Stuart wasn't in a position to compare. His and wife Elizabeth's 200 hectare farm just outside Culverden was intensively border dyked. As a 50-50 sharemilker, Stuart inherited about 30 hectares of border dyke in 1996 when the former sheep farm converted to dairy. Sticking with what they knew at the time was easiest.

"We ended up with around 170ha of border dyke which seemed like the right decision at the time. Our philosophy was to be a low cost grass based system farm and as we have heavier soils border dyke was quite efficient. We did wide borders initially and it was very cost effective. At that stage environmental consequences weren't even on the radar and the first pivots were just appearing."

Fast forward a few years, having bought the farm with equity partners, Stuart began to reconsider his investment in border dyke. Involvement with the Pahau Enhancement Group to improve the Pahau stream's water quality had brought sustainability concerns to the fore.

"Border dyke in our situation had actually been quite efficient in terms of water use but there wasn't a good argument around the environmental issues."

More compelling however from Stuart's perspective was the reliability argument.

"The decision to make the change was driven around risk assessment. It was obvious that border dyke in some years was going to be off for some time. We had some very clear projections from Amuri Irrigation Company about what this could look like. We did the maths and worked out we could be off water some years for six weeks. That's what drove us to change," says Stuart.

So three years ago, the first of the border dyke was ripped out. Although the decision made sense, Stuart says it wasn't easy to implement.

Changing the layout of the farm, including removing plantings he had personally introduced over the past 18 years, was difficult.

"It was wrenching. I had to pull out a lot of trees with the conversion and that was a mental hurdle to get over. But you have to move on."

For farmers still considering conversion from border dyke to spray irrigation, Stuart says several factors may be weighing on their minds.

"It's probably a generational thing to a degree. For the non dairy farmer it may be about cost. But if you're a dairy farmer, your farm will be devalued if you still have border dyke. The value of a border dyke dairy farm is pretty average and investors will know they have to factor in the cost of conversion. So it's not a question of if, it's a question of when."

"Border dyke was very low cost and labour efficient for us. Without the reliability issue and environmental consequences pushing us, we wouldn't have seen the need to change."

While regulatory pressure will eventually make border dyke untenable in Hurunui District, Stuart says farmers should be looking at spray irrigation as an opportunity to review all of their farm systems.

"It's changed our cost structure and use of technology. It's a total change of ball game."

To make the most of the investment in two pivots, grid irrigation, K line and sprinklers, Stuart says it's necessary to use monitoring technology to optimise irrigation and pasture performance.

Aquaflex tapes measure soil moisture and temperature at three shallow and one deep site.

"The deep site is to check whether we're getting nutrient loss below the root zone. It happens with rainfall events but not irrigation which is really interesting."

"The soil tapes are an absolute no brainer. I'm astonished people don't have them as you grow more grass with them. Soil that's too wet is a negative as well."

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CASE STUDY: STUART NEIL – CONTINUED…

All water on the farm is metered. "We know exactly what we are pumping and where it is going. It gives us a gauge of irrigation efficiency. I can actually measure our performance electronically now. We've got good records around grass harvest and the pivots outperform the rest of our irrigation systems by 30–40%."

Stuart says metered data also means he's confident the farm is meeting environmental requirements.

"It would be crazy not having meters because with them, I can prove I'm only using my allocation and where it goes and when. I can show, because of our deep soil types, that water is not getting into the root zone and I can prove our water use is efficient."

Since converting to spray irrigation, Stuart has seen production lifts in areas of the farm that historically weren't watered.

"What that has shown me is that irrigation is more important than pasture species or soil type."

When the dairy payout improves, Stuart will remove the K Line and sprinklers and replace with more grid irrigation in corners of the farm the pivots can't reach. Two buffer ponds that were introduced to catch nutrient loss from the former border dyke system now help with storage, providing an extra 15 days leeway during the season.

Farmers won't be pushed into converting overnight as the change is bigger than just physical infrastructure – it involves technology, having the right people on board to support you, and the lifestyle and labour implications of operating a spray system.

"You need to let people absorb the information and take their time. It's about being at the right stage in our business and life cycle to do these things. To be honest I am still processing the changes."

"The biggest risk is with water reliability. It's the reason why we have gone to pivots because I support Amuri Irrigation Company's argument about water efficiency."

"That's what drove us to change and we had an opportunity with the high payout at the time to do it. The other part is having a sustainable system long term for the environment. And I feel good about what we are doing."

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