Challenges facing the farmers of Central Otago

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Introduction

The Central Otago region, with its cold winters and hot summers, and valley floors with uplift mountains is definitely "a world of difference". At the NZGA conference in Alexandra in 1966 John Hercus stated "Central Otago has a lure which sets it apart from the rest of New Zealand. Its characteristics of geology, topography and climate, its history of occupation and exploitation, its scenery at once forbidding and yet strangely fascinating – these features combine to cast a spell which few who have been exposed, can ever fully escape" (Hercus 1966). The region and its high country have an iconic status epitomised by the "Southern Man" stereotype. This places Central Otago deep in the psyche of the nation. With this goes a unique and significant set of conditions under which farming must take place. Not only does the region have the biophysical challenges of soils, water and climate to contend with, but a wider set of values, often imposed from elsewhere.

Fifty years after that first conference we remain challenged. What are the opportunities in front of us and how should we best accommodate the challenge of maintaining a viable enterprise and at the same time, respecting the intense public and customer interest in our use of land and livestock?

Central Otago and the associated high country of the Lakes district and McKenzie basin can be divided into three farming types. These are the valley floor irrigable type, the flat and downland dryland regions, and the high country. Each of these has challenges that are at times unique, but often overlap with problems faced in other regions.

Valley floor irrigable

Irrigation, land use change and water quality Plan 6a are significant challenge for these farm types. The question that is asked is what does my management mean to water quality. What does my decision mean to land use – do I go dairy farming, and what does that mean for my financial situation/debt? If irrigation is used, what does the landscape look like, and does that fit with the urban expectation? All sectors of the community need to look into the future to make sure that the investments will meet the outcomes that are required. Doubters may be proved right and farmers' worst fears may be realised if water quality gets worse and regulations force farmers from the land.

Irrigation is a potential catalyst for declining water quality and a change of land use. Practice changes must be applied in a way that is acceptable to the community. However, the tension between the needs of the farmer and the expectations of the community are delicately balanced. An example is provided by changes that would bring prosperity but also bring significant change to the fabric of the community. For example dairy farms employ three to five times as many staff as current dry stock properties, generate four times the spending power, and therefore create the on-going, sustainable and vibrant wider community. But the change brings new and different people into the community, water quality may change, the landscape changes and it has the potential to degrade the fragile soil resource and therefore potentially reduce long term sustainability. Impacts may include soil degradation, salt build-up, and variation in water supply.

The Manuherikia Water Storage Proposal is currently going through the feasibility stage. At present, 15 000 ha in the district is fully irrigated, with another 10 000 ha partially irrigated due to an unreliable availability of water. Additionally, water is over-allocated under the historic mining rights access to water, and during the summer water flows in some streams stop altogether. If the scheme does go ahead, it would have the capacity to increase the irrigable area to a total of 35 000 ha, restore acceptable minimum flows and provide security of water. Mining rights to water will lapse in 2021 and future allocation will be by way of an RMA resource consent. This, combined with much more efficient spray irrigation systems, will allow a huge increase in the irrigable area and in security of supply. The economic impact to the region would be huge. The Opuha Irrigation Scheme, covering 16 000 ha in South Canterbury, led to an increase of 500 jobs and an additional household income across the region of $20 million annually. The potential of the Manuherikia Water Storage Proposal to increase the irrigable area by 20 000 ha could introduce 60 000 cows and with a labour efficiency of 120 cows/labour unit this also adds an additional 500 staff and their families.

But there are challenges. Infrastructure and on-farm costs for the new areas could amount to $12 000/ha and while production increases will be substantial, embracing the scheme will require huge shifts in the nature of an enterprise, both in terms of land use and in its financial structure.

From a community perspective, there are apprehensions around the inevitable land use intensification and the changes that will occur to that celebrated Central Otago landscape. Less emotional but more important will be what effects land use change will have on water quality. The Otago Regional Council has put in place a strategy to ensure water quality is maintained or enhanced – Plan Change 6A. It is unique in New Zealand in that it is an effects-based approach to managing water contaminants, giving farmers the responsibility to determine the most appropriate land management strategies to ensure that water does not exceed the thresholds set for contaminants. Land managers will have until 2020 to ensure that their land use systems comply with the thresholds, as the Council will at that stage pursue compliance vigorously. It is a bold and innovative approach, but its success relies on us as farmers embracing the concept, monitoring our streams and, if the water does not reach the standard, adjusting our management systems. If we don't deliver, the alternative down the track is that strict land management rules will be imposed.

Decisions around investment into irrigation and the resulting land intensification will clearly have to take into account the compliance thresholds come 2020. Do we have the ability and tools to have the vision to develop our own plans in the future?

Low altitude dryland country

Issues in the low altitude dryland country come from extracting the most value out of the limited amount of available water. The farm sizes are smaller, and cost increases have been outstripping the returns. Returning to profitability is the major challenge that these farm type face.

The opportunities in this class of farming largely centre around lucerne. There has been a dramatic increase in the use of lucerne with its ability to transform the economics of an enterprise (Stevens & Casey 2014; Moot et al. 2014). In parallel with lucerne is the huge interest in fodder beet for dairy grazing and beef production, with areas sown doubling this season (Donnelly pers. comm.). Under irrigation or where there is good summer moisture for crop establishment, beef fattening systems based on fodder beet are delivering up to 1kg of liveweight gain/day throughout the winter. This has the potential to absolutely revitalize the beef cow enterprise.

High country

Perhaps the most problematic area is the moist higher altitude country. It has acidic soils, coupled with high levels of aluminium and low P levels, hieracium is steadily encroaching, outcompeting the native vegetation, and by virtue of altitude, a relatively short growing season (Boswell & Floate 1992). For most farmers, improving this country to the point where white clover can exist as a permanent component is just not viable and its use is restricted to summer grazing of the native pasture. Alternative fertiliser strategies are needed to increase production in a cost effective manner (Stevens et al. 2014).

Although these low fertility, acid soils are widespread throughout New Zealand (Moir et al. 2014), their low productivity has meant that they have not been the focus for the commercial development of suitable legume cultivars which can thrive within such a difficult environment – consequently very little breeding and selection to develop tolerant cultivars has been done. As global warming increases, these higher, cooler and moist areas will become even more important as a reliable source of summer feed and we need to develop sustainable systems which can capitalise on that moisture.

These iconic landscapes also have significant amenity value in their tussock mantle. Balancing development with maintaining the visual amenity will be an on-going challenge.

Conclusions

Sustainability and viability of farming systems must face the challenges of soil fertility, soil acidity, lack of suitable plant genetic material, weeds such as hieracium and pest such as rabbits. These biophysical challenges are based around both regional and land class.

While the land classes and farming types have been separated out for discussion, in reality many enterprises may be combined on single properties, stretching from the valley floor up to the top the range. By far the most demanding part of capturing potential is fitting the various elements into a cohesive system. Resources generated from the highly productive country often subsidise the development of the high altitude country. A positive return on that investment is not expected for at least 5 years.

Social challenges will also be faced as people are needed to provide a vibrant community, and the skills and drive to change before they are compelled by regulation or desperation. Human capital will be needed to adapt farm systems.

Cultural challenges are also to be faced. Our tourist population wants rail trails, open skies, and big vistas. The MacKenzie Agreement was launched on 12 May

2013 in an attempt to bring together a shared vision of land use and land use change that met the needs of the wide range of participants. These included irrigators, tourism, farmers, the community, outdoor recreational representatives, various farming sectors from fine wool to dairy and guardians of the water and landscape. Integration of these multiple needs will be central to developing future farming systems.

Environmental challenges are already being faced through the implementation of Plan 6a by the Otago Regional Council. Here the opportunity lies in being able to determine the future and evolve to make the farming systems fit with the needs of the farmer as well as the rest of the nation who hold Central Otago to its iconic status, "a world of difference".

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