Future Pathways for New Zealand Hill Country Farming

September 2016

A supplementary publication of the Hill Country Symposium

Grassland Research and Practice Series No. 16



ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Contents

Summary 3

Purpose 4

Context 4

The Hill Country Symposium 4

Vibrant Rural Communities 5

Dealing with Change 6

Implementing Best Practice 7

Value Chains and Improved Profit 8

Environmental Management 9

New Innovations in Hill Country 10

Cataloguing in publication data
Supplement to Hill Country Symposium (April 12 & 13 2016, Rotorua, New Zealand)
Editor E.R.Thom, New Zealand Grassland Association
(Grassland Research and Practice Series No. 16/New Zealand Grassland Association/Occasional Publication No. 17/New Zealand Society of Animal Production)
ISSN (Print) 0110-8581, (On-line) 2463-4751

© Copyright 2016, New Zealand Grassland Association (Incorporated)

A Position Paper based on the 2016 Hill Country Symposium

Summary

"We can capture the prize if we work together"

Hill country farming contributes significantly to New Zealand's economy and regional communities. It is the nursery of our red meat industry; comprises 70% of our pastoral area and stewards 5.6m ha of land and associated fresh water catchments. However, dwindling investment and services will not sustain viable farm businesses and communities in the future.

Hill land must continue to be both an attractive home to rural New Zealanders and a productive, environmentally acceptable contributor to national welfare. This can only be achieved through clear, consistent vision and planning supported by central and regional government as well as the industry itself. A central government Standing Committee for hill lands and associate rural communities should be established.

Hill country families must be well connected locally, nationally and globally if they are to deal with future changes. Better connectivity for this sector is the responsibility of both individuals and regional/central government.

Programmes which motivate and give confidence to individual hill country farmers to implement change will be most effective. Accelerating practice change in hill country farming must be achieved by the Red Meat Profit Partnership programme.

Improved long-term profitability, knowledge and skills are required if current best management practices are to be more widely adopted. Research institutions, commercial companies and industry organisations need to collaborate more closely in developing and adopting new practices and technologies.

New value chains which deliver to customer specifications are expected to lead to improved profitability on-farm. Case studies demonstrating such gains should be documented and disseminated by processors and exporters.

Evidence is urgently needed to demonstrate the impact of farm system change on business and environmental performance. Beef + Lamb NZ needs to strengthen its technical capacity to support future environmental negotiations and associated changes in farm practices.

New innovations are required to realise the full potential of hill land resources. R&D relevant to hill country farming must be reinvigorated and guided by a cohesive, forward looking R&D strategy led by Beef + Lamb NZ.

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Purpose

The purpose of this Paper is to highlight key issues and opportunities needed to achieve an economically and socially viable future for hill country farming and associated communities. Both farmers and their communities must play an integral role in any future strategic planning and investment.

This Paper reflects the key messages of Symposium attendees and is independent of any formal organisation. Its purpose is to influence public, industry and business strategies that will affect hill country farming in the future. Ultimately, a clear, consistent vision, strategy and action plan is necessary for hill country farming to successfully contribute to national and regional policy objectives.

Context

Currently, 70% of NZ's lambs and beef calves are born and weaned on hill country and increasingly, less flat land is available for meat production. Hill country farms are therefore, the nursery of our red meat industry and will remain so for the foreseeable future. Hill country farming occupies 5.6m ha of NZ's 7.9m ha of improved grassland and fresh water catchments. It comprises 70% of our pastoral grasslands and is a significant feature of our 100% Pure NZ image. Responsible stewardship of these resources is important and expected. Thus, hill farming is an important contributor to both regional and national economies, tourism and community wellbeing.

As with all NZ farming, this sector must improve its profitability and resilience in the face of increasing costs, market volatility and climatic change. However, hill country farming must also overcome other challenges, including highly variable topography and climate and more dispersed, isolated families and communities. These unique challenges require unique solutions.

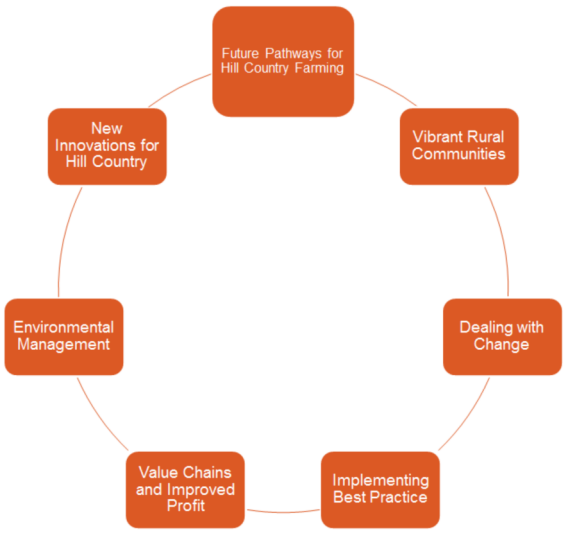
The Hill Country Symposium

The Hill Country Symposium was held in April 2016 to better position this sector for the future. It was a call to arms by and for people who are concerned about lack of leadership and dwindling investment and services in this sector.

The Symposium focussed on issues that must be addressed to ensure livestock farming in hill country helps achieve national economic, environmental and social objectives. Other forums such as the East Coast Hill Country Conference (2015) focused on the wider issue of future hill land use.

The 320 attendees represented a good balance between farmers from throughout NZ; service company representatives; and staff from industry and the public sector. Subsequent publication of review and practice papers provides valuable reference material for those wanting to learn more about the sector; a series of popular articles will highlight the successes and challenges of hill country farming; and structured discussion sessions during the Symposium provided pan-sector input to develop key messages. This generated a clear view of the challenges facing hill country farming and necessary actions.

This Position Paper draws on content and actions that emerged from the following themes in the figure below.



ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Vibrant Rural Communities

Hill country farmers and their families are dispersed and generally located in remote rural communities. They must be connected to both domestic and global stakeholders so they can help shape and implement domestic policy and can understand and benefit from global value chains. Central and local governments have a responsibility to create and sustain rural infrastructures such as roads and telecommunication to achieve this connectivity.

"We must be efficiently and effectively connected to the world."

"Remember that urbanites and tourists also use and benefit from good infrastructure."

Community networks and other processes that facilitate discussion of key issues, such as economic development plans and environmental regulations, need to be encouraged and supported. Hill country families must engage in these discussions if regional strategies are to be effective and reflect community interdependence. Already too many regional plans give little consideration to hill farming's economic and social contribution.

Successful hill country farmers are highly motivated. They respond to constraints and incentives and their commitment sustains greater population density in rural communities than other land uses such as forestry. This is particularly important to Maori, as often these communities are their *turangawaewae* that hold their ancestral connections.

"The opportunity to improve the performance of Maori farming businesses is huge."

A living and working environment that attracts and retains people with both farming and business skills is vital for future success. This applies to both farm owners and employed staff as farming businesses are now multi-million dollar enterprises. Good housing and telecommunication, rewarding wages, professional development and a safe, secure environment for families and employees are employment priorities. Many of these are the responsibility of the farm owner, but access to good schools, health care and gainful employment for partners or spouses is both a regional and national responsibility which needs urgent attention.

The above emphasises individual responsibility and action and the need for a united voice. It also highlights the need for informed and stronger leadership locally and nationally. Hill land must continue to be both an attractive home to rural New Zealanders and a productive and environmentally acceptable contributor to national welfare.

Action: *Consideration should be given to establishing a central government Standing Committee for hill lands and associated communities. This committee would be responsible for developing a balanced strategy for NZ hill lands by pulling together the multiple, often conflicting, initiatives involving hill land and interdependent communities. This committee should be supported by a working group, similar to the National Land & Water Forum.*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Dealing with Change

"Social media will play a much bigger role in supporting change."

Given the uncertainties and variability of its future operating environment, change is both inevitable and necessary in NZ's hill country. The rate and extent of this change will largely be determined by individuals, not institutions. Traditional extension processes can support change, but it is farmers' collective action which generates the confidence and momentum to initiate change. Simply relying on general messaging to promote change will not be enough.

"In farming hill land there are multiple issues that overlap and it will be important to look at each one within the context of the whole farm system and local community."

"Consider the people factor and be inclusive of key stakeholders."

Those seeking to support change in hill country farming must understand underlying motivations to change (or not to change) and foster greater levels of confidence. Inclusion of key stakeholders is required, as is the engagement of the whole farm team. Hill country farming is highly complex and involves multiple, often conflicting, objectives.

Effective change processes must strengthen farmers' confidence to act, and often this needs to extend to bankers and service providers as change may involve financial investment. Evidence of the benefits and risks of change is thus essential, along with examples of successful change, consistent messages and easy access to support, information and tools.

"Advance Parties (operating in the deer industry) seem to have the right ingredients."

Greater interaction between early adopter farmers, research champions and progressive service providers is seen as essential in successful co-development and implementation of innovations on farm.

"Farmers and scientists need to be more actively engaged to exchange knowledge and experiences."

Action: *Those people who govern and manage the Red Meat Profit Partnership (RMPP) programme should consider these messages and the needs of the hill farming sector. Significant Crown and industry investment is currently being made into this programme to address these issues of change within the sheep and beef sector.*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Implementing Best Practice

The Red Meat Profit Partnership has revealed high performing farmers have diverse attributes. They are not risk takers, but are confident in what they do. Before doing something new, they will carefully test it over part of the farm before rolling it out further. They have a strong, interactive support team and are willing to seek out and pay for specialist advice. In hill country, these types of farmers have achieved high biological and economic performance despite the land class and climate in which they farm. Shining examples are the recent winners of the Ahuwhenua Trophy, who implement best practice.

The review and practice papers in the Symposium highlighted many of these best practices, for example:

- Knowledge and tools to manage soil fertility are available, but fertiliser still remains a significant ongoing and constraining cost of production.
- Improved pasture species, cultivars and forage crops are available for increasing forage supply of easier contoured land.
- Grazing management to improve animal and pasture performance, and the integration of more efficient stock classes.
- Pregnancy scanning, body condition scoring and improved nutrition of multiple lambing ewes to markedly improve animal performance.
- Improved genetics with the potential to increase fecundity of ewes and growth rates of progeny.

Expectations need to be balanced with reality, however. On many farms, a history of inadequate profitability and skill has limited implementation of many best practices.

"We need to remember that there are a lot of 'basics' which need to be addressed by a large group of farmers. During the 80's and 90's, infrastructure and soil fertility were run down – these farms are now playing catch-up. The reality is that these farms are not fit for purpose and it's important to think about the lower performers where focus needs to be on first principles: subdivision, stocking policy and pasture management."

This situation is well reflected in B+LNZ Economic Survey Data which reveals a wide spread in biological and economic performance between hill country farming businesses. Increased profitability is an important driver of change, but a concerted effort is required to strengthen both business and farming practices within hill country farming. Tertiary education will be essential in improving the knowledge and skill of future farmers and staff working in the NZ hill country.

While wider adoption of best practices across the sector is an on-going challenge, further refinement also remains necessary. For example:

"More efficient use of nutrients can be achieved by identifying land management units and applying different rates of fertiliser."

"As our systems intensify and become more demanding, we need better feed supply from the hills."

"We must reduce mortality in our high fecund flocks – this is high on the agenda of high value customers."

Action: *Research institutions, commercial companies and industry organisations must work together with farmers when developing and adopting new practices and technologies. A recurring plea at the Symposium was for a more collaborative effort by all parties given the constraints on available investment.*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Value Chains and Improved Profit

A common view is that NZ farming must be market focussed and higher product values will solve many of the challenges faced by hill country producers. Consequently, farmers expect new value chains which deliver to customer specifications will improve their profitability. If this is to eventuate, farmers must know their businesses well, and choose partners whose aspirations and systems align with their own. This will in turn depend on effective on-going communication between farmers and processors to enhance market understanding as well as the ability to deliver livestock to specification and on time. Both parties will have to accept risk, honour contracts and build shared values and trust.

"B+LNZ should not be the arbiter of commercial relationships."

With one exception, it must be noted that meat company representation was glaringly absent at the Symposium. This was surprising given that hill country farms are the nursery/foundation of the entire NZ red meat industry, and meat companies purportedly provide the vital link between farmers and overseas markets. Inclusive captains of these new value chains are urgently needed.

"Be clear and consistent around what is expected."

"Know your business and your partners' business – do good due diligence."

Successful value chains will enable farmers to connect with customers and accordingly, open and transparent relationships between all parties will be essential. For hill country farmers with predominantly breeding systems, these connections can be difficult to achieve. Therefore it is important these farming businesses participate in supply networks and share in the financial rewards.

To meet the standards imposed by highly specified value chains – and thus improve farm profitability – best practices will have to be implemented on-farm. Where new technologies and practices are required to successfully supply to specification, these must be considered in the context of the overall farm system. This is particularly so if the branding position for hill country products is 'natural' and 'sustainable'. However, necessary skills and resources for farm systems R&D are rapidly eroding.

Action: *Case studies which demonstrate farming systems successfully meeting the requirements of new value chains should be documented and disseminated. These should be undertaken by companies and industry bodies actively involved in several Primary Growth Partnership programmes.*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Environmental Management

Managing hill land in order to care for our environment is not new. What is new are different indicators of environmental quality and changing environmental regulations. In dealing with such challenges, we must consider past lessons. Hill country farmers must participate in shaping and influencing community-led policies.

Tension exists between the goals of profitability and environmental care in hill country, yet they are increasingly interdependent. Unfortunately, too little evidence is available about the impact of farm management changes on the balance of these two goals. How will profitability be affected if environmental goals are satisfied? Will these changes make any real difference to environmental quality? Will customers pay more if these expectations are met? What are the unintended consequences of focusing only on one single environmental issue? These questions need to be answered by a multi-institutional research effort.

"There is a glaring gap in expertise to help deal with future environmental regulations."

For fresh water, issues such as nitrogen, phosphorus, faecal dynamics and the long term effectiveness of mitigations in hill country need to be understood. Similarly for climate change, the integration of greenhouse gas mitigations into farming businesses needs to be better understood.

"We need evidence of the benefits and consequences of management changes."

"We need clarity around what is expected – consistent industry standards and environmental plans."

Farmers expect if they comply with environmental regulations, they will be rewarded with a social licence to operate. They also hope to be rewarded

"History demonstrates that changes to resource management takes time and requires financial support and technical guidance."

with increased product prices, although little evidence of this can be seen in existing supply arrangements. To realise these expectations, a much more effective link between farmers, processing companies and regulators is required.

Recent experiences in formulating environmental regulations in the Horizons' One Plan and the Healthy Rivers Wai Ora Plan indicate mixed livestock farmers in hill country have been under-supported in the negotiation process. Rather than lock financial and biophysical resources into a one way, possibly dead-end strategy, these should be maintained as a platform for future land use opportunities.

Action: *B+LNZ should strengthen its technical capacity to support future environmental negotiations and changes in on farm practice. There is an ever growing demand for adequately trained and experienced rural professionals to develop and certify environmental farm plans. Should that responsibility be left to regional councils?*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

New Innovations for Hill Country

Current R&D investment and capacity relevant to hill country farming is close to non-existent. The steady erosion of innovation over the past 15 years reflects the lack of cohesive, forward looking R&D funding. Yet many solutions are urgently required if NZ's hill country is to be a productive and an environmentally acceptable contributor to national welfare.

"A clear and cohesive research, development and adoption strategy that deals with the needs of hill country farming is required – B+LNZ must take a stronger leadership role."

Environmental management is the first obvious need as outlined previously. Evidence is required to show the impact of changes in land use and management practices on farm productivity, profitability and asset value and in the environmental improvements that are being sought. Robust analyses of case studies where such changes have been implemented are urgently needed. Importantly, transformational solutions that will generate more sustainable production systems with smaller environmental footprints in hill country will require long term public funding and the restoration of essential research capability.

"The inglorious quote of 'spray and pray' is not acceptable."

As more is demanded of the hill country, increased production of high quality feed from hill pastures will be required. It is accepted that the basics of fertiliser, subdivision and grazing management must be addressed first and that useful pasture species/ cultivars are already available for some landscapes. However, better adapted plant types, particularly legumes, are needed for the difficult soil and climatic conditions common to many hill farms.

"We want to see something transformational such as plants that take hill country pastures from 7 to 10 t DM/ha; do not need an Olsen P of 30; have long taproots and drought resistance; and are tolerant of high soil aluminium."

The current market for these plant species is small, necessitating a more innovative method of plant development compared to the existing commercial model. To realise this aspiration, R&D in the plant ecology-management-plant improvement triangle must be restored. This will also be critical in giving farmers confidence that they will benefit technically and financially from over sowing new seed into hill pastures. The pan-sector Pastoral Industry Forage Strategy will need to encompass the expectations of hill country farming.

"At a sector level, innovations must be scalable and transferable across farms."

Given the scale and topographical variability of hill country farms, precision agriculture has exciting potential. Fertiliser company efforts to develop tools that link variable rate applications of fertiliser to land management units will benefit both farm productivity/profitability, and environmental outcomes. Importantly, aerial sensor technology has other applications such as improved weed control.

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Monitoring methods, information management and decision tools to support more timely and accurate decisions and actions will be needed to improve resource use efficiency, supply product to specification and lift environmental performance. The challenge for these innovations is that they be developed and used to reduce workload, not increase it, particularly for smaller, owner-operator farmers.

To achieve these innovations, the hill country farming sector must be ambitious about securing long term funding. If it is not, it will continue to lack coherency and R&D will continue to be hand-to-mouth. These achievements will take time and will require taxpayer funding. B+LNZ's support is pivotal – without it, the concept of innovation in hill country farming will not fly.

Action: *B+LNZ must take a stronger leadership role and develop a clear, cohesive R&D strategy that meets the needs of hill country farming. This strategy will need to cover environmental management, development of adapted legumes and wider application of precision agriculture.*

ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)

Prepared by Frank Scrimgeour, Waikato University, and Gavin Sheath on behalf of the Hill Country Symposium Organisers and Attendees, April 12-13, 2016.

The Hill Country Symposium Organising Committee represents the New Zealand Grassland Association, New Zealand Grassland Trust and the New Zealand Society of Animal Production.

Members of the Committee: Graham Kerr (chair), Anders Crofoot, Chris Logan, David Stevens, David Chapman, Grant Edwards, Gavin Sheath, Mark Illston, Steve Morris, Pat Garden, Marie Casey, Errol Thom and Martin Hawke.

Based on the review paper produced by Frank Scrimgeour, Waikato University 'Pathways ahead for New Zealand hill country farming' 2016. Journal of New Zealand Grassland Association 78: 73-82



ISSN 0110-8581 (Print) ISSN 2463-4751 (Online)