Adapting to climate change in hill country Hawke's Bay

SFF Project C08/022

Farmer interview summaries
(Interviews completed from November 2008 to February 2009)

Prepared by Gavin Kenny, Garth Eyles, Mike Halliday

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Introduction

The following material is a summary of information drawn from interviews with 20 Hawke's Bay farmers. These interviews were completed in two blocks, the first in November 2008 and the second in February 2009. The primary focus of the interviews was on climate proofing, drawing on lessons from recent droughts and looking ahead to a future with climate change.

The farmers were selected for their geographic spread through the region and are as representative as possible of the diversity of climates and soil types in Hawke's Bay. Key questions were sent to farmers prior to the interview. While the key questions were covered in the interviews, the process was informal. The approach was to engage the farmers in conversation and invite them to volunteer information that they considered of relevance.

Key questions:

1. Introduction – overview of the farm.
2. What are current climate risks?
3. What management decisions have you made to deal with climatic events?
4. How do you feel you handled the last drought, including specific management details?
5. Would management change next time?
6. What does climate change mean to you?
7. What steps can you take to adapt, in order to be more resilient for the future?
8. What resources/support would you like available to help you adapt?
9. Some final reflections on future visions/directions for hill country farming in Hawke's Bay?

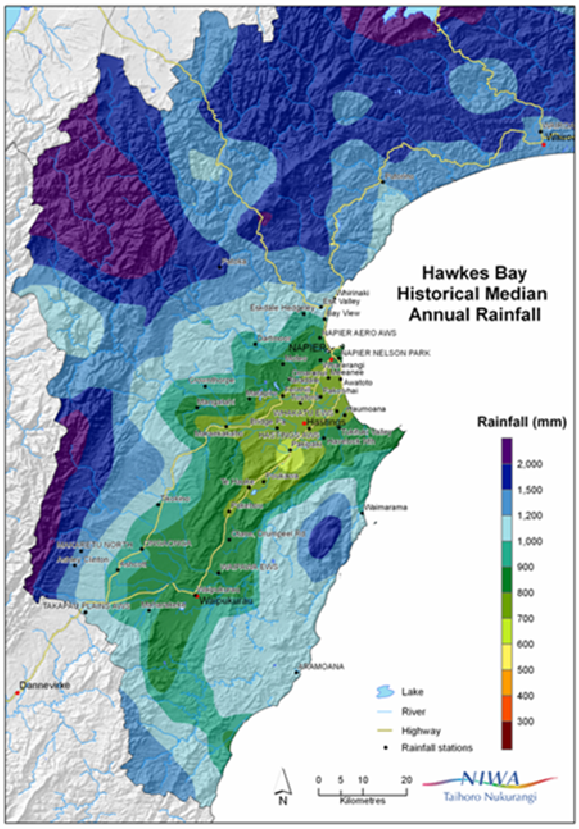
The following information summaries are drawn from responses to these questions to cover: climate, stock, soils, pasture, water, infrastructure, trees, information needs, the future.

The immediate purpose for collating these summaries is to provide feedback to the farmers who were interviewed, and to share this information more widely. The feedback to the farmers is aimed at providing them with an overview from the interviews ahead of a workshop that will be held on 30 July 2009. The intent of the workshop is to explore and discuss the key issues and options that have been identified.

Climate

Summary

- Rainfall variability is an inherent part of the Hawke's Bay climate.
- The rainfall pattern is what matters; some think this has changed in recent years while others think it has always been variable and always will be.
- At least 75% have rainfall records or neighbours with records, many going back 20 years or more. The majority are not formally documented (i.e. they are kept in farm diaries).
- The main climate risks are drought, dry autumns and springs; lack of water; extreme rainfall is a concern for the majority but not all.
- Wind is a big factor in determining drought.
- Every farm has its own unique microclimate and you have to farm to that.
- The majority believe that climate is changing, although some question whether it is cyclical or because of human influence.
- The main concerns with climate change are the potential consequences of hotter conditions and more extremes of flood and drought.
- Two farmers expressed their concerns with NIWA seasonal forecasts as factors that influenced their belief regarding climate change.



Conclusions

- There is a lot of anecdotal and informally gathered information on local climates that could be used more effectively in the region.
- Extended dry conditions, particularly in autumn, are creating serious management challenges on top of other issues.
- The effect of wind on drought needs to be understood more widely (i.e. beyond the farmers who know the effect it has)
- Understanding of climate change and opinions on the science are varied. More effective communication on climate change and climate information generally would be beneficial.

Stock

Summary

- Majority had lowered breeding flock/herd in favour of trading stock and altered sheep/cattle ratio in favour of cattle.
- Sheep/cattle ratios ranged from 75/25 to 0/100, average about 60/40.
- While many had other reasons for lower stocking rates and lower sheep/cattle ratios, all cited flexibility for destocking trading stock, and higher covers with lower sheep/cattle.
- Only two mentioned the balance between lower stocking rates and higher per head performance.
- Some looking at innovative ways for owning breeding stock e.g. JV's in safer rainfall areas.
- Some acquired land in safer rainfall areas.

Conclusions

- Over the last decade or so the vast majority of those interviewed had made radical changes to stocking policies, many of which were a result of climatic demands. This would possibly be at a variance to the thinking of some policy makers.
- As always some are constrained from drastic change by ongoing commitments, stud flocks, training etc.
- The general shift to trading stock raises questions about future supply of stock from breeding flocks/herds – will increased breeding performance, survivability and production per head cover this?

Soils

Summary

- At least 50% are currently focused on lower fertiliser inputs. Most are driven by economics, with 25% also expressing environmental concerns as a strong influence in their fertiliser inputs or management.
- 20% said they were implementing biological or organic practices, with a focus on soil moisture retention, soil carbon and soil health.
- Some reliant on residual P or lower P, some more lime based.
- A few focused on intensification of alluvial flats, with drainage.
- Majority aware of erosion risk and being proactive, some not as much.
- Mixed views regarding cultivation and conservation tillage.

Conclusions

- Surprisingly little known by farmers about their soils.
- Most know P levels and usually the pH, but few know about structure and management.
- Concern about effect of stock management on soil structure.
- Increasing interest in soil biology management and low input systems – but a lack of reliable, independent, information and support.

Pasture

Summary

- There is a strong awareness of the benefits of higher pasture covers.
    - Ties in with lower stocking rate and sheep numbers.
    - Benefits to soil moisture and carbon.
- Mixed views regarding Farmax vs observation.
- Strong disillusionment with recent pasture breeding.
- Strong belief in the 'tried and true'.
- Ongoing experimentation with diverse species (a number using pasture mixes) and management.
- Mixed views on supplementary feeding.

- **Cropping**
    - About 50% actively winter or summer forage cropping.
    - Different views, cropping and management systems.

Conclusions

- 'Grass grows grass'
- There is a total lack of confidence in the suitability of modern grass varieties for summer dry hill country.
- A real lack of support for those actively seeking alternative pasture species and management systems – a need for dedicated research.
- Management of spring and autumn shoulders is a challenge.

Water

Summary

- About 30% of farms have a fully reticulated water supply, 50% have a mixed supply (reticulated and dams & creeks) and the remainder are dependent on dams and creeks.
- A number of farmers monitor water/moisture levels including: a drought puddle, digging with a spade, observation of creeks and springs.
- In different parts of the region there were observations of lower spring and creek recharge in recent years, while in other localities no major changes were noted.
- A number of farmers (about 25%) are looking at soil management techniques (e.g., biological farming) to improve soil moisture holding capacity.
- About 50% of farmers have been recently, or are currently, actively working to be more water secure.
- Two farmers voiced their scepticism regarding irrigation of pasture, while one voiced it as an option.

Conclusions

- Concerned farmers are acting now to secure their on-farm water supplies.
- Extended dry conditions appear to be affecting local recharge, but there is no clear understanding of water sources, recharge rates, and long-term sustainability of local water supplies.
- There is an urgent need to better understand the water situation throughout hill country Hawke's Bay and methods for storing and conserving water (including information on storage dams, shelter benefits in reducing PET, soil management).

Infrastructure

Summary

- 75% have some sort of water reticulation system, with the majority having had recent upgrades.
- Still an emphasis on dams for some.
- Many thinking about long term water harvest/storage.
- While many stated wind as a major factor in drought, few mentioned the use of shelterbelt systems to mitigate wind-run.
- Tracks and culverts a major issue for those on steeper country.
- Awareness of culvert size becoming more obvious; but only a couple are proactively upgrading for the next big storm event.
- Growing awareness of riparian plantings to protect gullies, waterways from erosion.
- Drainage an issue for some.

Conclusions

- High awareness of adequate water supply.
- Low awareness of the benefits of shelter on pasture production.
- Access could become a major issue for some should more extreme rainfall events occur.

Trees

Summary

- All interviewees involved in or would like to be involved in on farm tree planting of some form.
- 45% currently working with Regional Council with pole or other plantings.
- 45% current members of Farm Forestry Association.
- 40% have QEII blocks.
- A number of those who have established poplar and willow trees view them as important stock fodder in a drought.
- Different "outside the square" options are being explored including: managing kanuka trees for erosion control and shade; two-tier farming trials; organic fruit growing; on-farm tree selection (eg, walnuts) for shade and fodder.
- Only one currently interested in carbon farming, three openly sceptical.

- Wide range of views regarding planting programmes as expected. From "will only do it when finances allow", through "we have a programme and will carry it through in some form", to "just borrow the money and get the job done, the benefits are worth it".

Conclusions

- Farmers interviewed recognized the benefits of planting trees on farms, especially for the protection of waterways and erosion control.
- Some different views on the value of trees in paddocks for shelter and shade.
- Those with indigenous remnants on their property are showing an interest in protecting them.
- In Hawke's Bay there seems to be good awareness of the Regional Council's land management programme.
- There is some innovative thinking around the use of trees on farms.

Information needs

Summary

Some of the percentages quoted below may be understated. These are drawn from responses to a specific question about information/support as summarised above. Other farmers talked about issues relating to some of the identified needs but didn't specifically mention them when asked this question.

- 30% would like to see research on suitable pasture species for hill country Hawke's Bay.
- 20% would like information and research of relevance to either biological farming or for some form of low input farming system.
- 35% would like to see either working models (not monitor farms) and/or on-farm research of relevance to sustainable farming.
- 15% said they would like better information/knowledge regarding water (storage, management, stormwater management, groundwater).
- 20% said they would like better information from NIWA and/or better seasonal weather information. 15% said they were pragmatic about weather information and use what's available along with local observations.
- 50% would like unbiased, and centralised information of relevance to present and future options for hill country farming in Hawke's Bay. 30% said they aren't lacking information or the information is there if you want to find it.
- 30% identified economic constraints such as low returns, high land values, high compliance costs and at least one farmer talked about the need for incentives to change, rather than more costs and regulations.
- Three farmers talked specifically about climate change information. One said that there is enough information already available to work with, and two others said it needs to be communicated more effectively. One commented that it is in the too hard basket for many.

Conclusions

Three key needs have been identified:

1) A need for relevant on-farm research and working models of sustainable farming practices and systems for hill country farming in Hawke's Bay.
2) A need to review available weather and climate information, how it is used in decision making, and what gaps and needs are there. Is there a need for more or better information, and/or improved support for on-farm decision making with currently available information?
3) A strong need (by at least 50%) for unbiased and centralised information of relevance to sustainable farming practices and management in the hill country

The future

This section contains a collation of views expressed by farmers when asked about their thoughts/vision for the future of hill country farming in Hawke's Bay.

Summary

- A change in the way we farm – mosaic of land use, working with nature, lower inputs, more balanced approach, focus on soil health, more sustainable, future proofing regarding water.

- Economics – need to be price makers more, pursuit of excellence, aim for top 10% of market with sustainable farming, NZ Inc approach.

- Adaptability – be prepared to go outside the square, flexibility, just work around things, learn your lessons and put things in place for the future, be open-minded, learn from the past and go forward, grasp the concept of change as part of your business.

- Farmers working together more – sort out breeding and trading country within Hawke's Bay, partnerships west of the ranges.

- Capacity to change – apathy of the NZ farmer, the role of education vs regulation, change through people acting on the ground along with external drivers, focus on the farm, keep farmers well informed, humans are living outside their means, most kiwis don't plan long-term for their future.