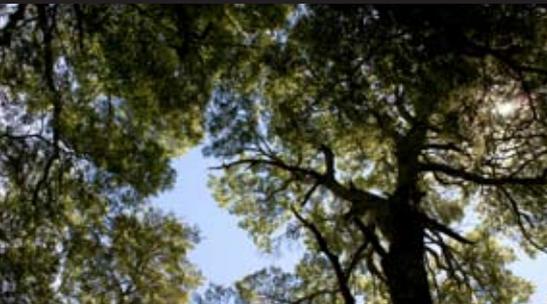


Factsheet 4: Farm Resilience for the Future



These fact sheets contain information shared through discussions with 20 Hawke's Bay farmers during the 2008/09 season.

“The trouble is that we’re all like sheep ... I think you’ve got to work out what is the best use of your land and do it as best as you can and you will catch the swings and roundabouts. If you’re trying to chase the pendulum you’re always behind it. Sustainability is to some extent keeping your feet on the ground and not chasing the limelight.”

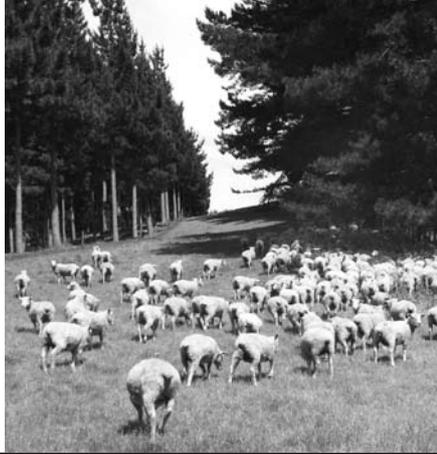
Farm resilience

The farm resilience picture incorporates:

- Trees providing protection systems.
- Efficient water storage and use.
- Diversification in keeping with land class.

- Smart management of soil fertility including a focus on soil organic matter.
- Pasture diversity and grazing management.
- A flexible and diverse stocking policy.
- Cropping options to provide supplementary feed in times of shortage.
- A good infrastructure to deal with climatic extremes.
- Aiming for energy efficiency and self sufficiency.
- Waste management.





“We’ve got to change the way we farm. We can’t farm the way we did 30 years ago. Our customers, who we sell products to, are demanding that we farm more sustainably. I’m responding to that message too.”

Comparing adaptation options identified by Bay of Plenty and Hawke’s Bay farmers

	Bay of Plenty dairy farmers	Bay of Plenty kiwifruit growers	Hawke’s Bay sheep & beef farmers
Water	Drainage improvements Irrigation	Water storage and allocation	Water security Fencing of riparian areas
Trees and shelter	Trees for shade	Artificial shelter developments	A greater role for trees for multiple benefits
Management systems & varieties	Drought proofing with more diverse pasture Crops to break pest cycles Changes to grazing and milking regimes Diversification	New varieties Hicane substitutes Increased plantings of Gold kiwifruit	Alternative pasture species Longer pasture covers More trading stock and fewer breeding stock, with more cattle Match land use to land class Diversification
Low input/organic approaches	Look at organic and biological approaches	More organic type approaches	Increased interest in low input and/or biological farming
Energy	Energy efficient machinery	Better cool-store design	

Thoughts for the future

- A change in the way we farm – a mosaic of land uses, working with nature, lower inputs, a more balanced approach, focus on soil health, more sustainable, future proofing regarding water.
- Economics – we need to be price makers more, pursuit of excellence, aim for the top ten percent of the market with sustainable farming, a ‘NZ Inc’ approach is needed.
- 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, develop partnerships west of the ranges.
- Capacity to change – there are barriers to change and positive actions that can be taken.

Barriers to change include the apathy of the NZ farmer, humans are living outside their means, most New Zealanders don’t plan long-term for their future.

Positive actions include striking the right balance between education and regulation, facilitation of change through people acting on the ground along with external drivers, focus on the farm, keep farmers well informed.



How 'smart farming' for resilience can effectively deal with climate change

'Smart farming' for resilience	Adaptation benefits (increasingly understood but need to be understood more)	Mitigation benefits (need to be understood much more)
Trees for multiple purposes	Shelter and shade benefits Stock fodder Erosion control Drought and flood resilience Biodiversity enhancement	Carbon storage Lower methane emissions from reduced feed demand with shelter & shade and improved feed quality Reduced fuel use with a well developed on-farm timber resource for local milling
Pasture - mixed species - low input regimes - longer pasture covers - deferred grazing - deeper rooting plants - focus on pasture quality	Drought and flood resilience Improved animal health	Carbon storage in soil from greater root mass to a greater depth Lower methane emissions from improved feed quality
Soil - lower inputs/soil biology management - clover and other legumes instead of N-fertiliser	Buffering against flood and drought from increased organic matter, soil porosity and soil health Improved animal health through improved pasture quality Reduced erosion loss with an integrated approach to soil management	Carbon storage with deeper rooting pasture and soil organic matter increases to a greater depth Reduced nitrous oxide emissions Lower fossil fuel use and emissions with reduced demand for and production of N-fertiliser and other fertilisers Carbon storage rather than carbon loss through effective erosion control
Stock - focus on quality rather than quantity - stock ratio and breed selection	Greater resilience through smarter grazing management Animal health improvements, more resilient animals	Reduced emissions through smarter grazing management and improved animal health
Water - storage - efficient reticulation and use - soil biology management - riparian protection	More efficient and effective water use Greater resilience	Improved carbon storage and reduced carbon emissions from greater moisture retention Lower emissions from a healthier, less water-stressed, farm system
Whole farm - an integrated sustainable management programme	Long-term resilience Off-farm benefits (e.g. catchment protection, biodiversity corridors)	Efficient capture, storage and cycling of solar energy, carbon, and water Reduced emissions

“The only way is to have working models. You can’t preach to farmers. They’re individuals and everybody has got a different farm and a different system. But farmers do like looking at models. If something is working they’ll take ideas and try things out on their own farms. So we need working examples of different management techniques.”

“It’s simply about generational farming and making this place sustainable so that it doesn’t blow away in a dust bowl in the summer and we can’t farm it because of a lack of water and shelter...and trying to make sure it stays here in those severe winter events. You try to balance things as well as you can with what nature throws at you.”

Further thoughts on actions needed to develop resilient farms and a mosaic of land use

- It has started happening.
- Planning long term – prioritizing.

Understand more of our physical resource.

Effective delineation of all land classes, aspects and microclimates.

Diversification of crops and activities.

Focus on nutrient balance instead of excessive fertilizer use.

Be proactive not reactive.

- Education of the issues governing land-use.

Show case role models/farms.

Understand the pasture production potential of each farm, and the range of that production.

Then be able to alter stock policy to fit that production range.

- Economics

Climate and economics will alter the mosaic of land use as time goes by.

Balance between financial commitments and future considerations.

Listening to signals.

- Water

Storage systems with bigger water storage, well maintained reticulated water, healthier for livestock.



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