Māori Agribusiness: Collective Approaches to Production Systems and Land Use Change



WORKING TOGETHER

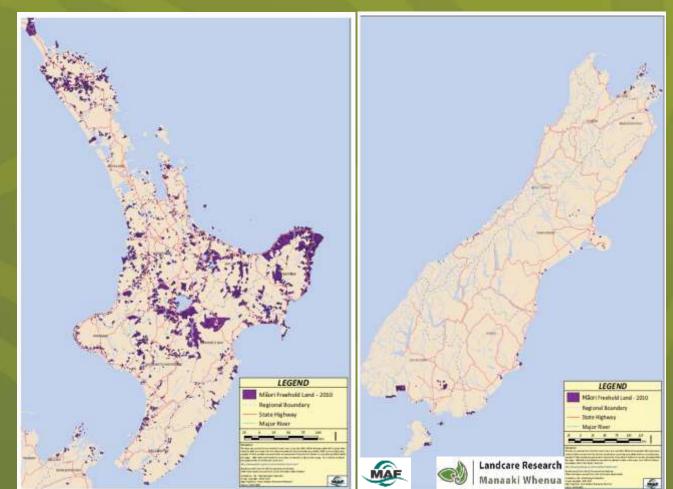
Tanira Kingi, Scion Phil Journeaux, AgFirst Reina Tamepo, Scion





The Māori Agribusiness Sector

- Maori 'freehold' land (Te Ture Whenua Maori Land Act, 1993)
- 1.7m ha or 7% of NZ's total land area
- 1.35m ha in the primary sector
- 632,000ha in forestry (47%)
 621,000ha in livestock (46%)



Source: Te Puni Kokiri 2014 2010 data

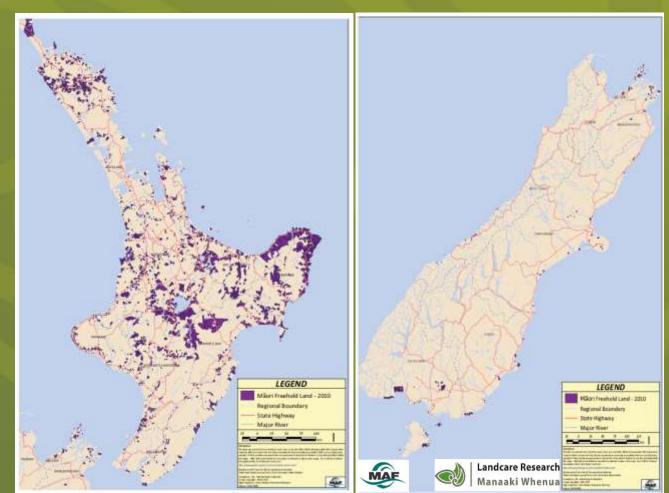






The Māori Agribusiness Sector

142 trusts & incs > 1,500ha (~60% of Māori land)
Almost 2,000 trusts < 5ha and 2,350 between 5-50ha*
20% of Maori land without a structure



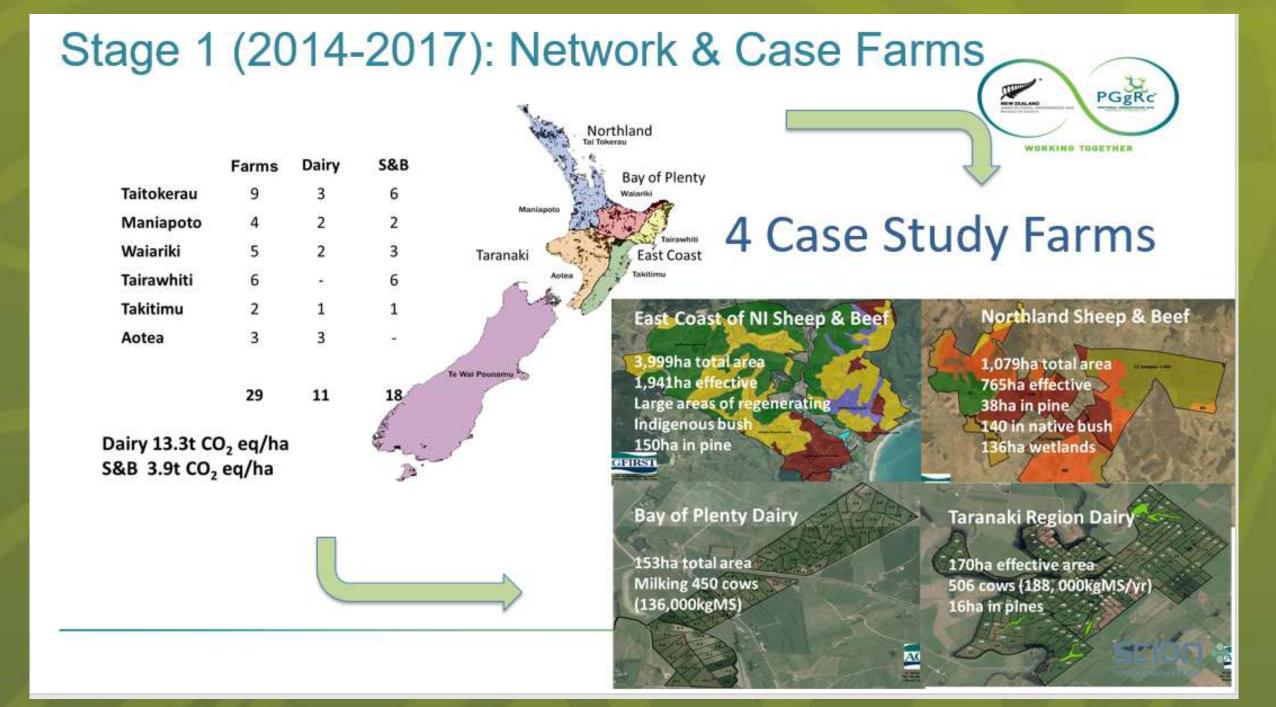




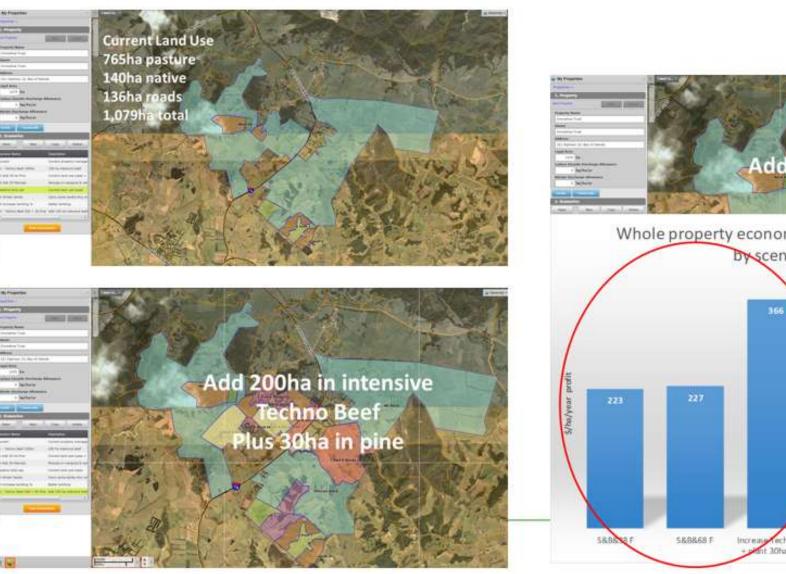
Source: Te Puni Kokiri







Land Use Change Scenarios

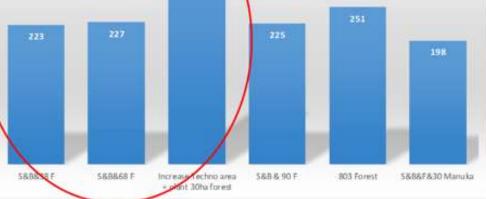




Add 30ha in pine

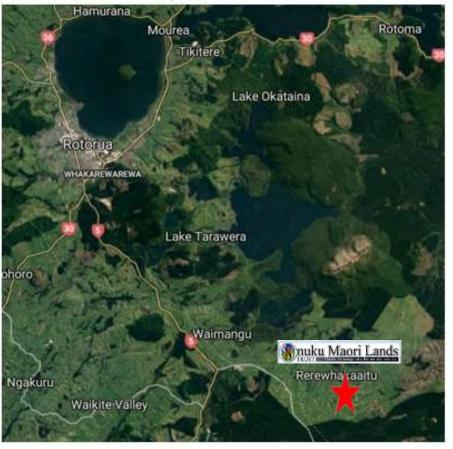
Whole property economics - simulation period average by scenario (\$/ha/year)

Foresty = \$251/ha/yr Mānuka = \$180/ha/yr Carbon = \$15/t



Stage II Programme (2017-2019): Diversified Multi-Enterprise Entities

Te Arawa Ahuwhenua Trust



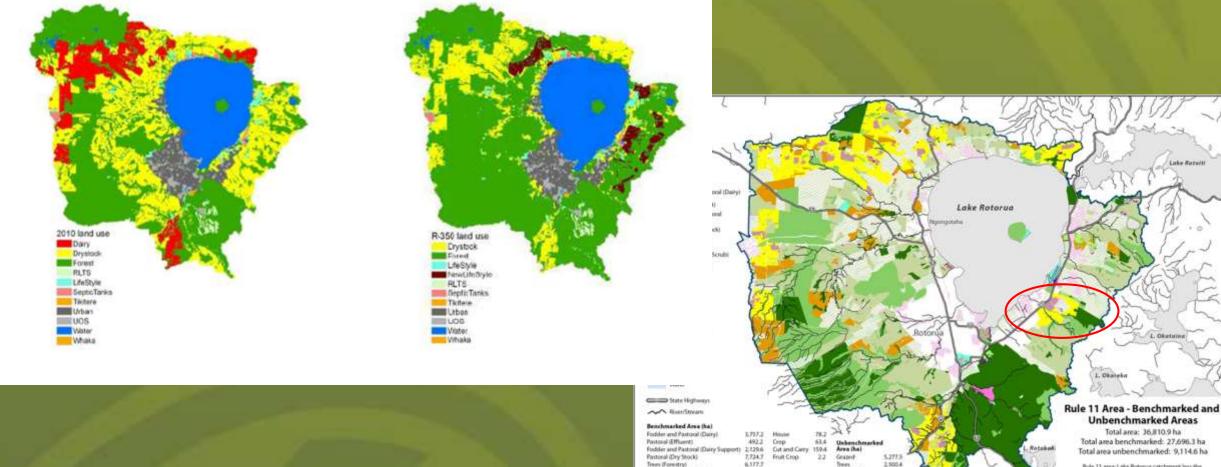
2,362ha

Ngati Maniapoto Incorporation 2,369ha





Land use change scenario for Lake Rotorua Removal/Reduction of pastoral farms (2010)



Frees (Bush and Scrub

6 Base of Phenry Respond Council. Topogenative and property lowerdary information from Land Micromation New Zealand UMZ

Non-productive

G/5-463495-6

1.324.2

Rule 17 area: Lake Rotonue catchment lives the lake area, road and hydro parcels and parcels lives than 0.4 ha not already benchmarked.

Waingaehe awa

Ngati Hurangaterangi Owhata marae Ngāti Te Roro-o-te-rangi Ngāti Hei Ngāti Korouateka Ngāti Tukutahi



Responding to Environmental Legislation and Regulations

	Mana Atua – Mana Tangata – Mana Whenua Te Mana o te Wai The health of our Wai: The health of our Nation	
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Mar Witaka	Na haere Kattlakitanga Manaakitanga Governance Stewardship Care. respect	To Matta o to wai - To Materi o lo wai To Marca Motubalo O to sou o lo tot o to babil lo to wai
Petincertal Mar Whakai		Te Naithalithanga o ngà fiapit ma ngà turi Mite wal
	pri/Máori Landowners/Whänau/Hapori) Crown / Community Certeal & focal growmants	Ta Mana Whatabasee o nga hapit ma nga lasi ki la wal





Greenhouse gases: Farm Planning Guidance

Opportunity	Greenhouse Gas	Potential Reduction	Page
Improve the efficiency of pasture and crop production			10
Minimise N-Surplus through reduced N-fertiliser use	NHO	Med	
Reduce N-Surplus through reduced use of supplementary feed	N ₂ O	Med	
Use inhibitor coated N-fertilisers	N2O	Med - Low	
Improve crop husbandry	NzO	Low	
Optimise soil pH levels	NbO	Low	
Reduce total feed eaten			12
Convert less productive land to indigenous or exotic trees	CH4 N2O	Med	
Cull less productive stock early	CH4, N2O	Med - Low	
Adjust stocking policy	CH4, N2O	Med - Low	
Reduce stock losses and optimise replacement rates	CH4, N2O	Low	
Increase animal performance through genetic selection	CH4, NzO	Low	
Convert more productive land to high value crops	CH4, NzO	Low	
Match feed demand with pasture growth and utilisation			14
Reduce bought-in supplementary feed	CH4, N2O	Med	
Use of lower protein forages	N#O	Med - Low	
Optimise pasture quality and production	CH4	Low	
Improve the management of livestock effluent			16
Use captured effluent as a fertiliser	N ₂ O	LOW	
Capture and store carbon in vegetation			17
Plant indigenous or exotic trees.	CO2	Med	
Minimise periods of bare land	CO2	Med	

RST

Production system optimisation and land use change scenarios

- Increasing area in forestry, either pines or indigenous
- Decreasing ewe numbers and increasing lambing percentages and beef weights
- Changing stocking rate and/or performance
- Increasing sub-divisional fencing
- Diversifying a proportion of the dairy farm into kiwifruit

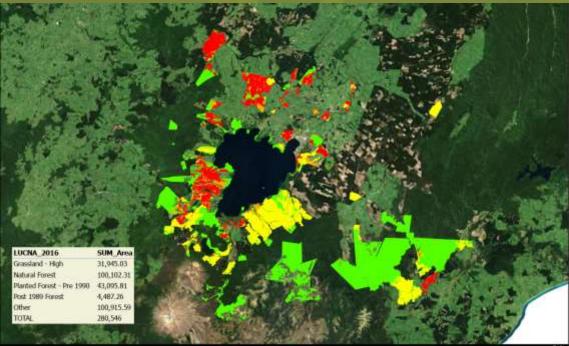




'Collective Approaches to Mitigation and Land

Pasture 32,000ha Native 102,000ha Pre-1990 44,000ha Post 6,000ha TOTAL 281,000ha

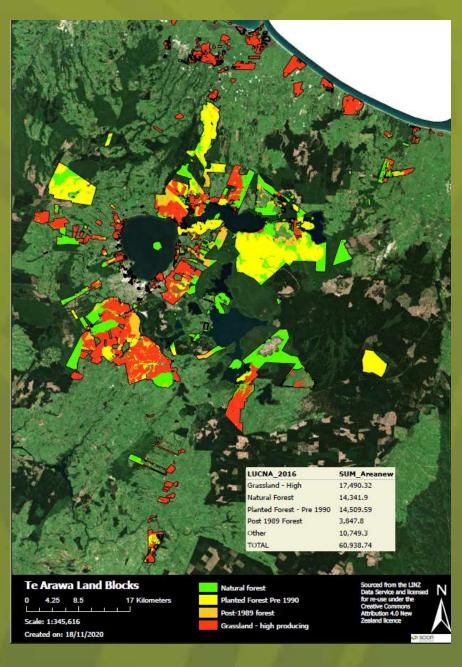
Use Change' Pasture 18,000ha Native 15,000ha Pre-1990 15,000ha Post 6,000ha TOTAL 61,000ha



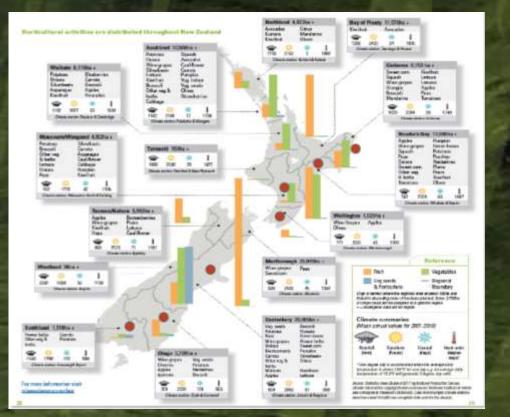
Tuwharetoa Land Blocks

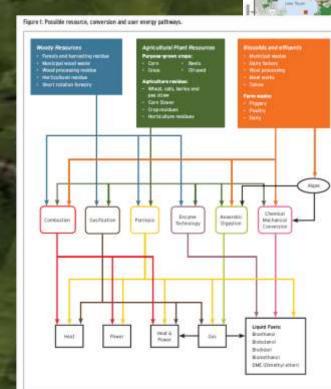
Scale: 1:690,000 Created on: 18/11/2020 Grassland – High pro

0 10 20 40 Kilometers



How does the Māori primary sector transition from high emission to high value low emission supply chains and marketing channels?









 Extension
 337,000

 Extension
 4,13 Mm²

 Extension
 333mml;

 Walkatul
 Walkatul

 Realibul
 10,9 L

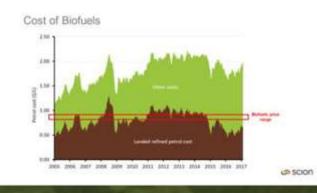
 Conformation (P) p.s.)
 6,51

 Conformation (P) p.s.)
 2,93

Opportunities;

Coal, wood process, Whakatane Coal, horticulture, Whakatane Dairy, gas, Reporoa Horticulture, gas, Reporoa Other, Coal, Mount Maunganui

KZ)≧



Developing new supply networks and market channels requires investment into processing and logistics infrastructure



- Squared cells: 25x25km
- Rectangular cells: 25x50km or 50x25km
- · Cells are useful to represent:
 - Separation of geo-climatic regions
 - Transport distances
 - · Location of current plant capacity
 - · Optimal location of new capacity
 - Location of ports
- Every cell is further subdivided into:
 - Land use
 - Terrain impediments
 - · Crop maturity for perennial crops
 - Land ownership
 - · Categories for product quality

