

# Indigenous carbon farming in New Zealand & Australia

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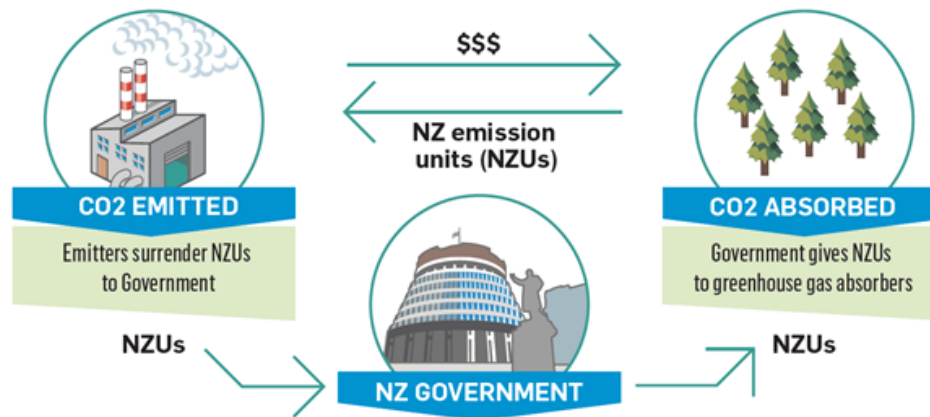
Capital thinking. Globally minded.

# Content

- Case study of Nuhiti Q carbon farming
- Multi criteria analysis results
- Wider implications of Māori landowners participating in NZ ETS
- The Aboriginal Carbon Foundation
- Comparison of indigenous carbon farming in Australia and New Zealand

# Carbon farming in New Zealand

- The NZ Emissions Trading Scheme - 2008
- “any land use in which landowners capture economic benefit from carbon sequestration” (Funk, 2009)
- Afforestation or managed reversion of forest species on eligible post-1989 can earn New Zealand Units (NZUs – 1tCO<sub>2</sub>e)



# New Zealand Unit Prices 2010 - 2020

\$NZ Dollars/tonne

R version 3.3.3 (2017-03-06)

Data: 'NZU monthly prices' <https://github.com/theecanmole/nzu>

2010

2012

2014

2016

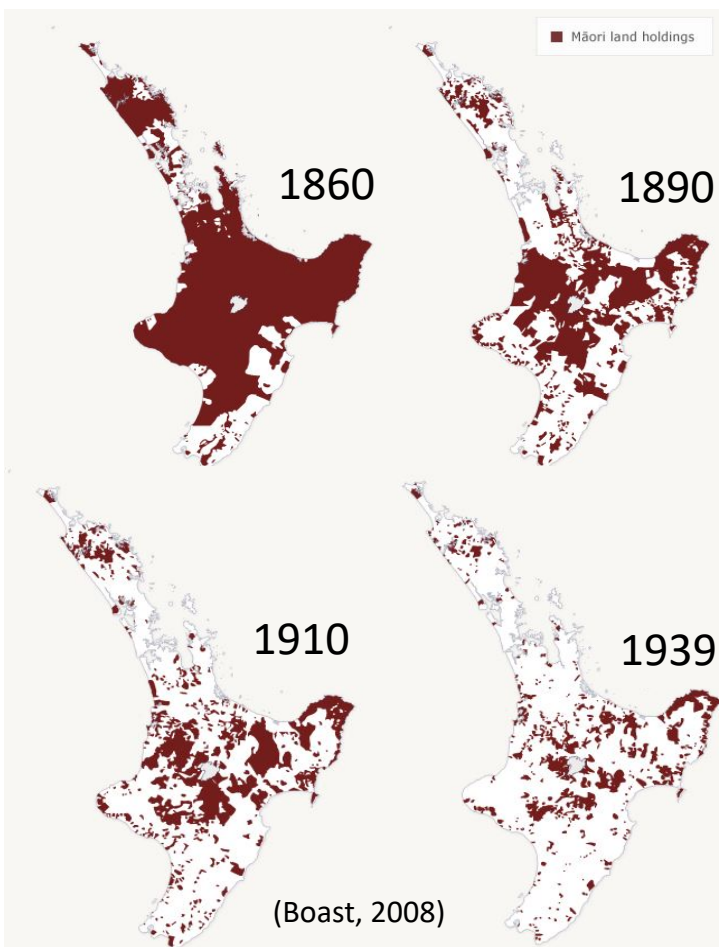
2018

2020

35  
30  
25  
20  
15  
10  
5  
0



# So, why is carbon farming relevant for Māori land in Aotearoa?



Districts	% still Māori	Sq. Km per Cap. (Māori only)
<b>Predominantly rolling or limited local relief</b>		
Waikato	12.0%	0.30
Taranaki	14.0%	0.37
<b>Mixed, steeper land and flatter</b>		
Auckland-Northland	18.0%	0.26
Hauraki	12.0%	0.18
Bay of Plenty	31.0%	0.47
Hawke's Bay-Wairarapa	17.0%	1.54
Wellington	23.0%	0.84
<b>Mainly intense local relief</b>		
Urewera	72.0%	1.95
Gisborne-East Coast	38.0%	0.45
Volcanic Inland Plateau	40.0%	1.62
King Country	47.0%	1.29
Whanganui	40.0%	1.28
<b>North Island</b>	<b>27.0%</b>	<b>0.67</b>

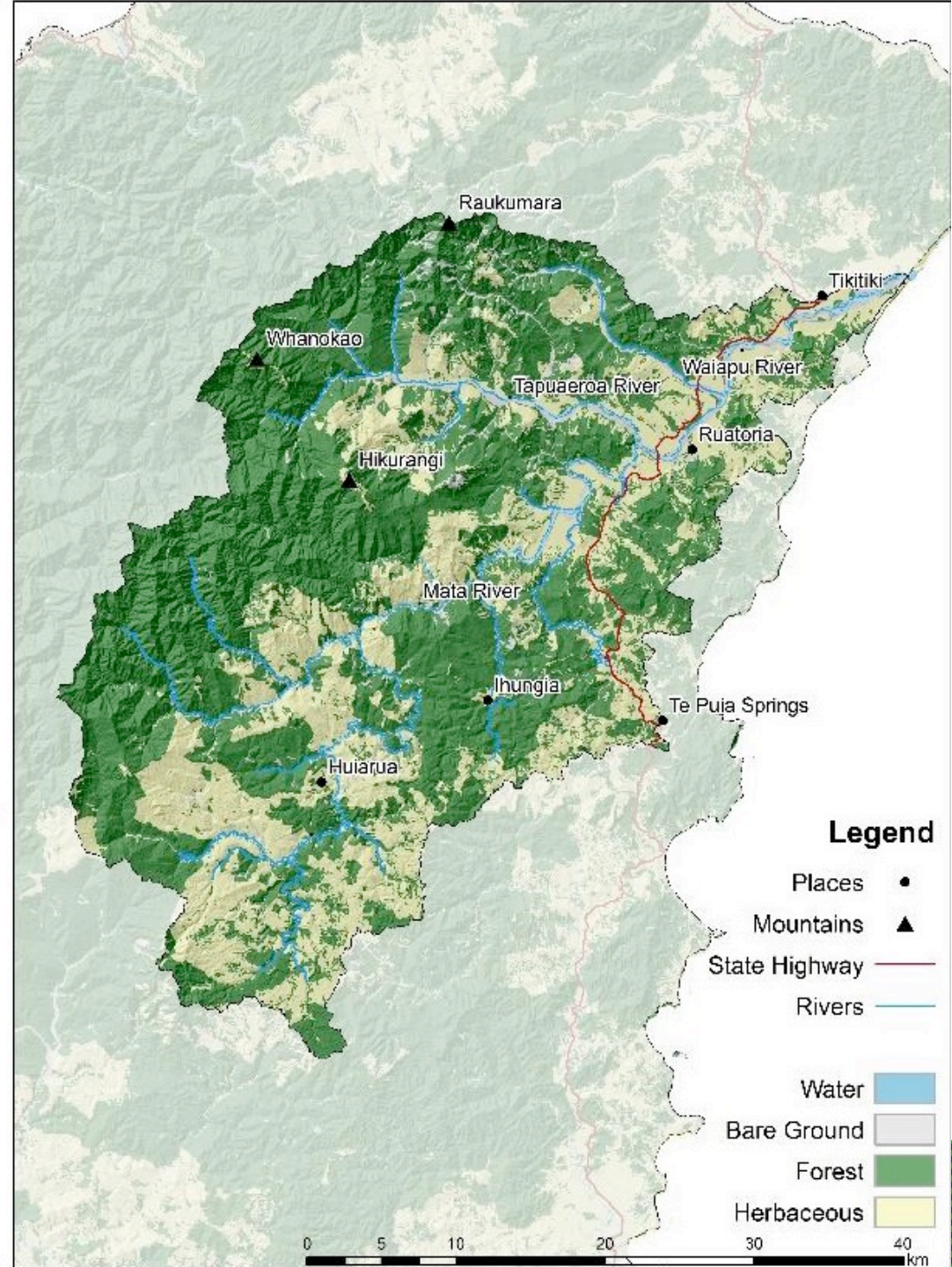
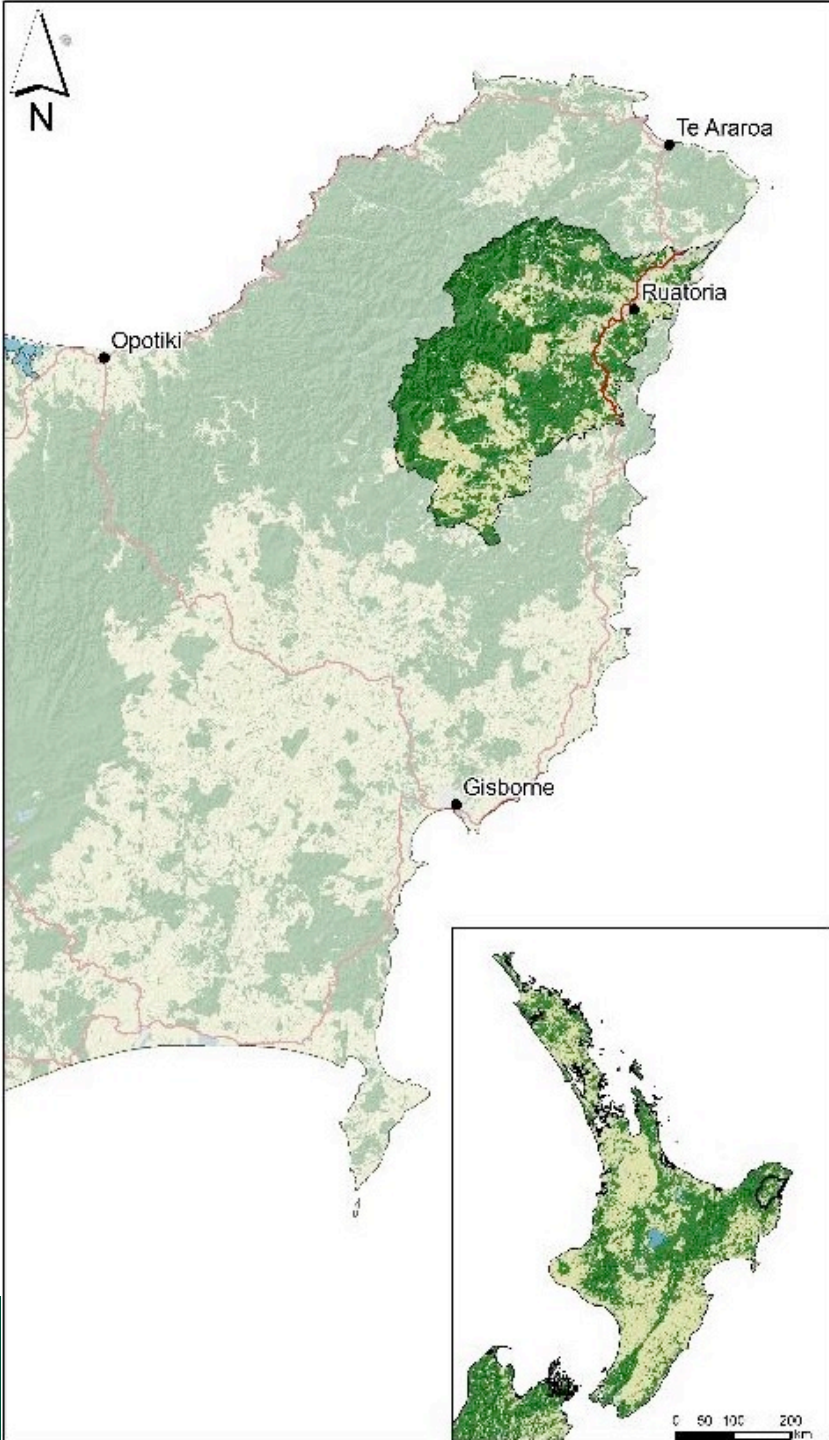
Land still in Māori ownership (%) and km<sup>2</sup>/capita: 1910, North Island Waitangi Inquiry districts grouped by dominant topographical characteristics (Ward, 1997)

## Land use capability of Māori land across New Zealand

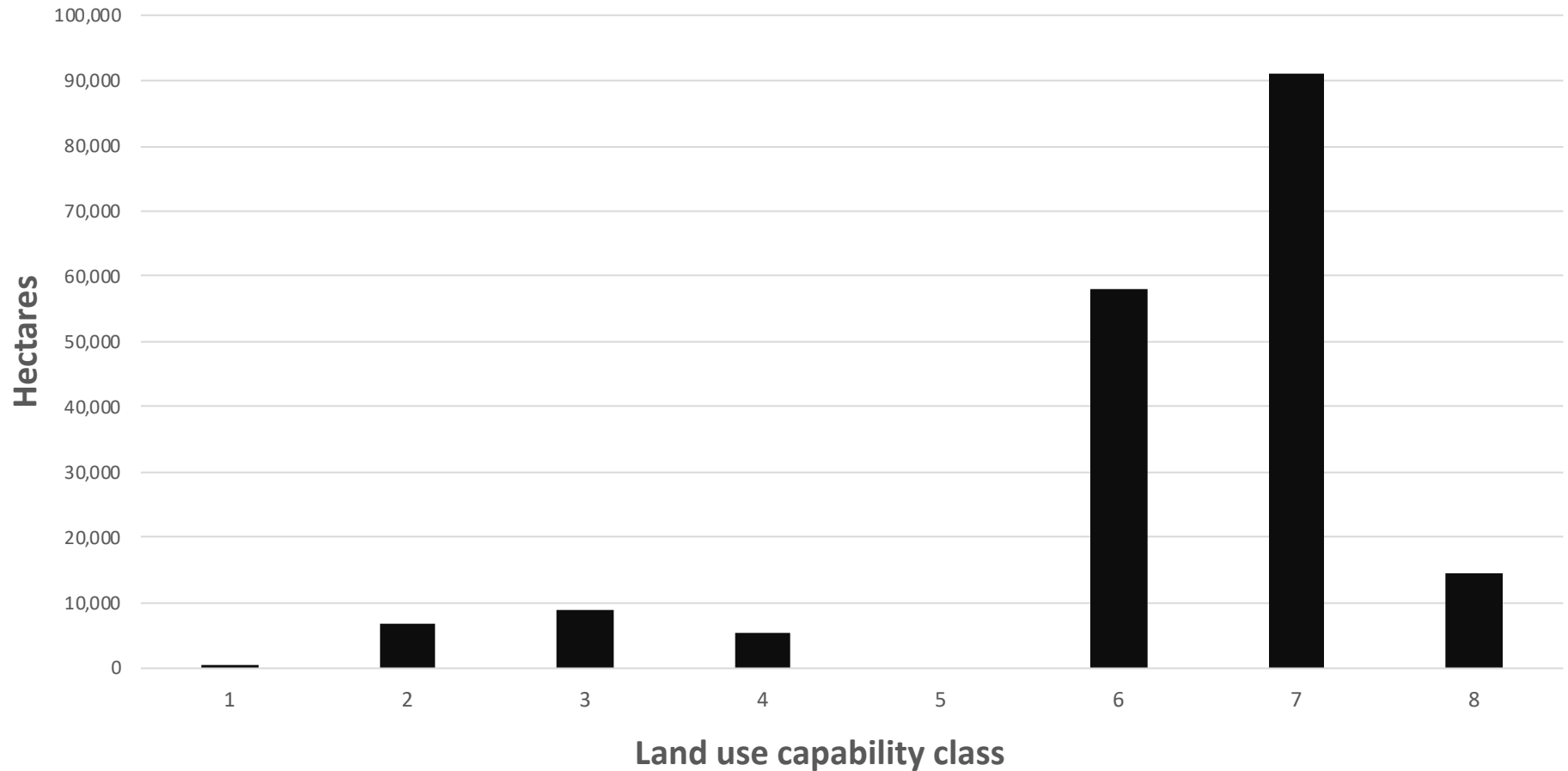
LUC	% of Total New Zealand Land	Māori Land area (ha)	% of Māori Land
1	0.7%	7,514.76	0.50%
2	4.6%	43,733.59	2.89%
3	9.2%	85,534.33	5.65%
4	10.5%	153,972.29	10.16%
5	0.8%	6,883.47	0.45%
6	28.1%	507,706.36	33.51%
7	21.4%	469,830.47	31.01%
8	21.8%	230,142.75	15.19%
Other	3.0%	9,752.96	0.64%
<b>Total</b>		1,515,070.98	
	(26,930,100 ha total)		

Potential of Māori Land by LUC – Landcare Research GIS 2010 cited in Harmsworth et al., (2010)





# Māori freehold land by region and Land use capability: Gisborne district (PwC, 2013)

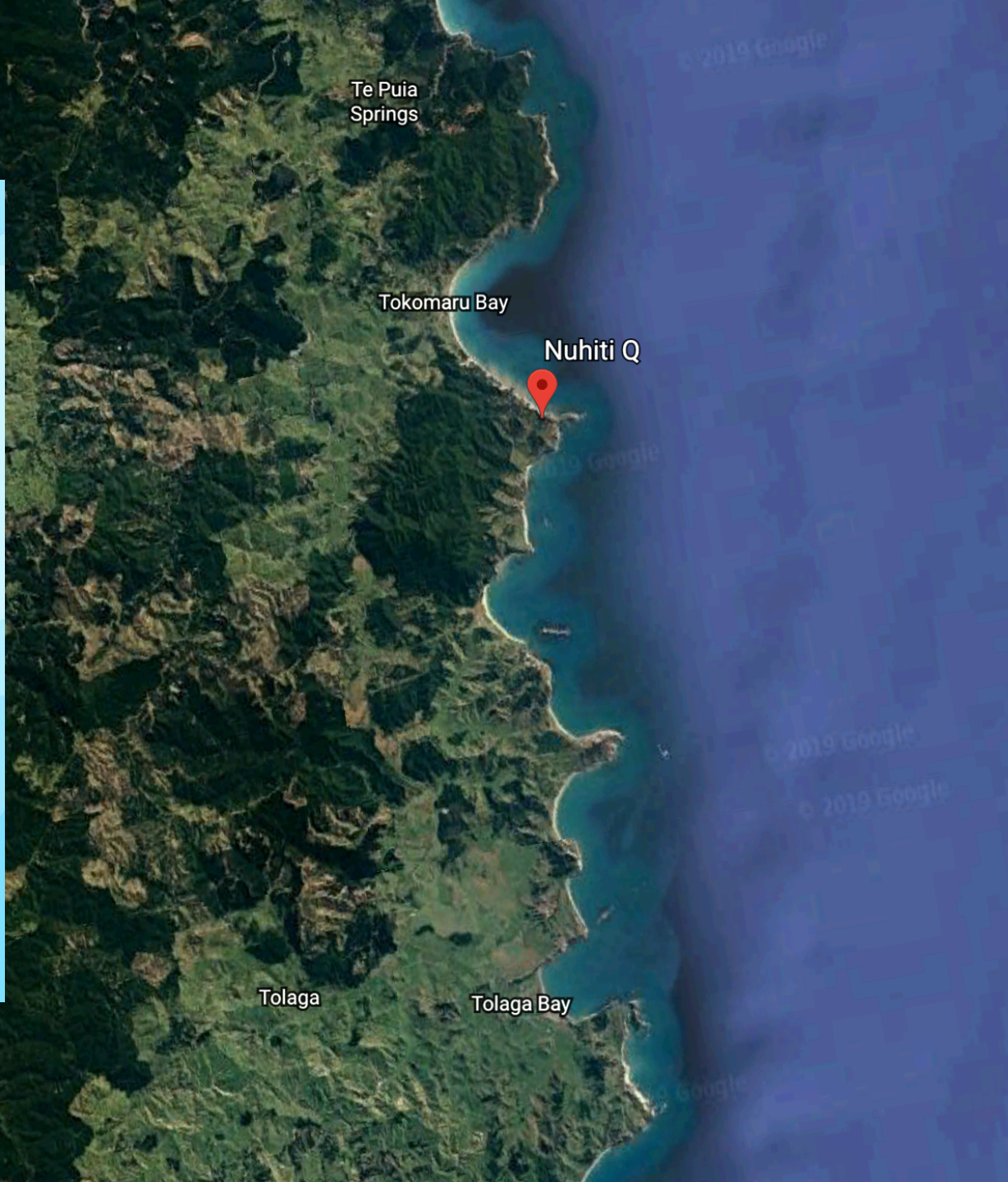


No land use limitations

Severe land use limitations

(Cropping, orcharding, dairying > sheep and beef > forestry > carbon forestry > conservation forestry)









# Nuhiti Q and Gull NZ

- 500+ha of highly eroding native regenerating land and 70ha of Eucalypts entered into the ETS in 2012
  - 32,000 initial NZU allocation
  - NZU entitlement at 2017 was 6000 NZU/yr
- Nuhiti Q partnered with Gull NZ in 2016 forward selling 12,000 NZUs at \$18.40 totalling \$220,000 over two years
  - Forward contract provided price certainty for Nuhiti Q
  - Certainty has allowed for intensification of the remaining pastoral areas and infrastructure improvements
  - Nuhiti Q actively diversifying into Macadamia orcharding and Mānuka honey



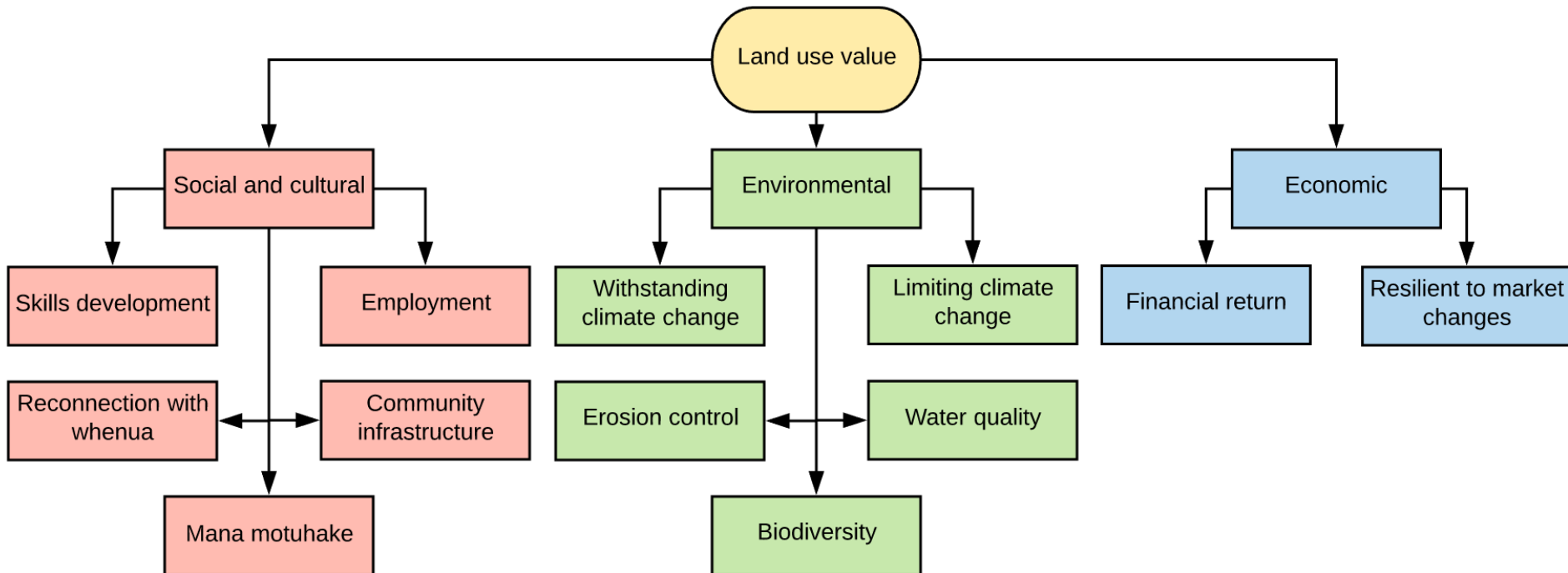






# Multicriteria Analysis (MCA)

- In light of the findings from Nuhiti Q's entry into the ETS, what other feasible land use options exist in the Waiapu catchment and what is valued by Māori land owners about these in comparison with native forest carbon farming?
  - Participants of the MCA were asked to collaboratively evaluate the land use alternatives presented by assigning an importance weighting to each criterion (co-benefit) & an importance score (between 1 and 5)



# Land use alternatives

## Flat land model (LUC 1-4)

1. Native forestry: mānuka, kānuka, totara
2. Exotic forestry: Pinus radiata
3. Sheep and beef farming
4. Perennial food crops: apple, macadamia, blueberries
5. Medicinal cannabis and hemp
6. Cropping: kumara
7. Cropping: maize

## Steep land model (LUC 5-8)

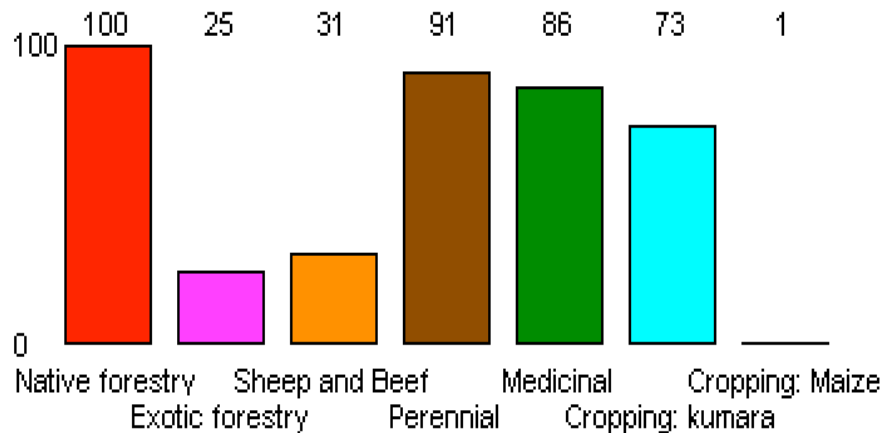
1. Native forestry: mānuka, kānuka, totara
2. Exotic forestry: Pinus radiata
3. Sheep and beef farming
4. Hunting and tourism

Flat land model 1 comprised 7 participants

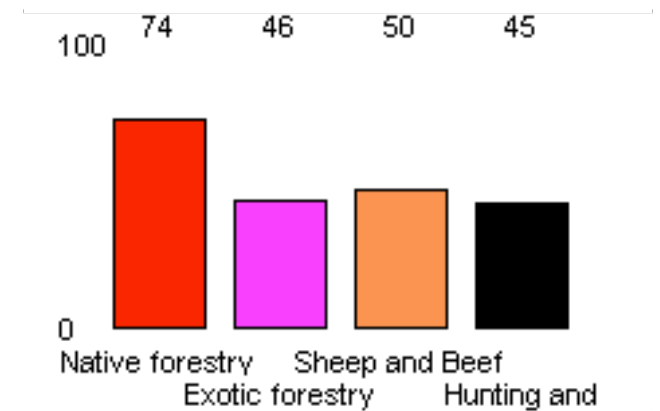
Steep land model 1-3 comprised 12 participants and ran concurrently

# MCA aggregated scores

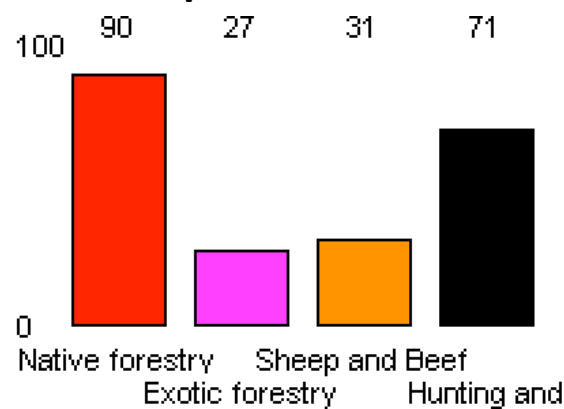
## Flat land model 1



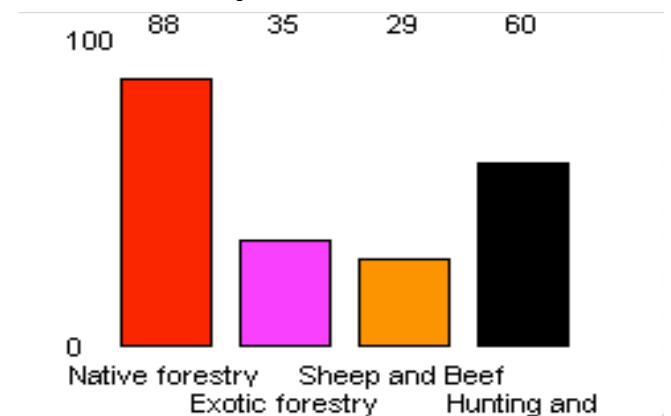
## Steep land model 1



## Steep land model 2



## Steep land model 3





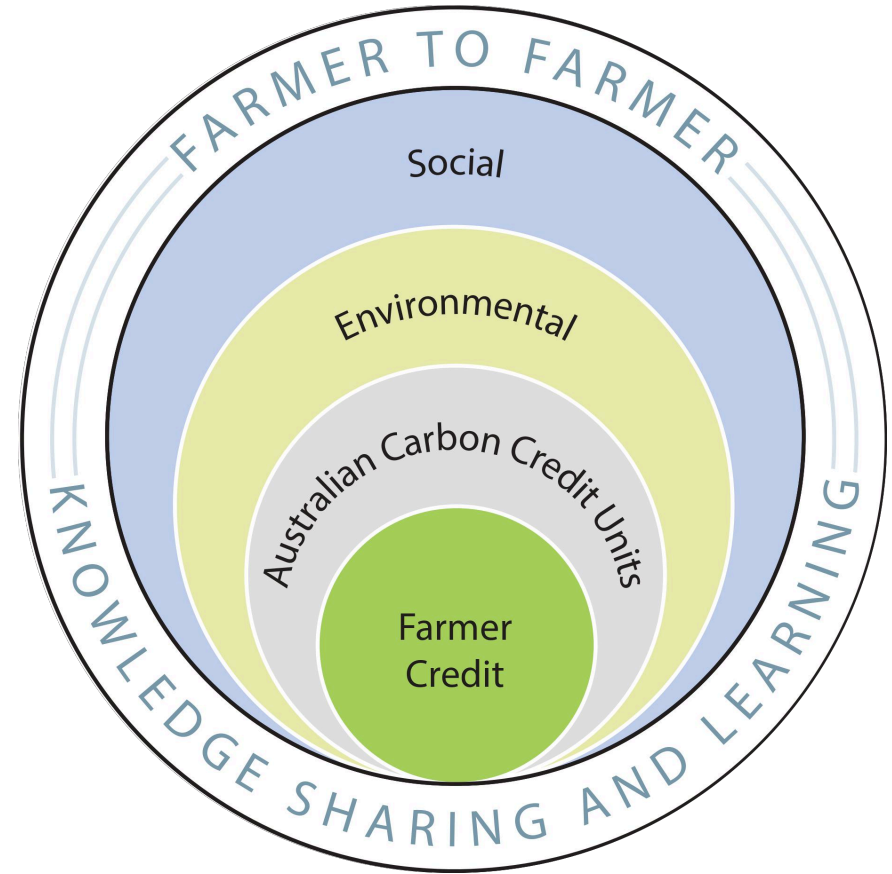
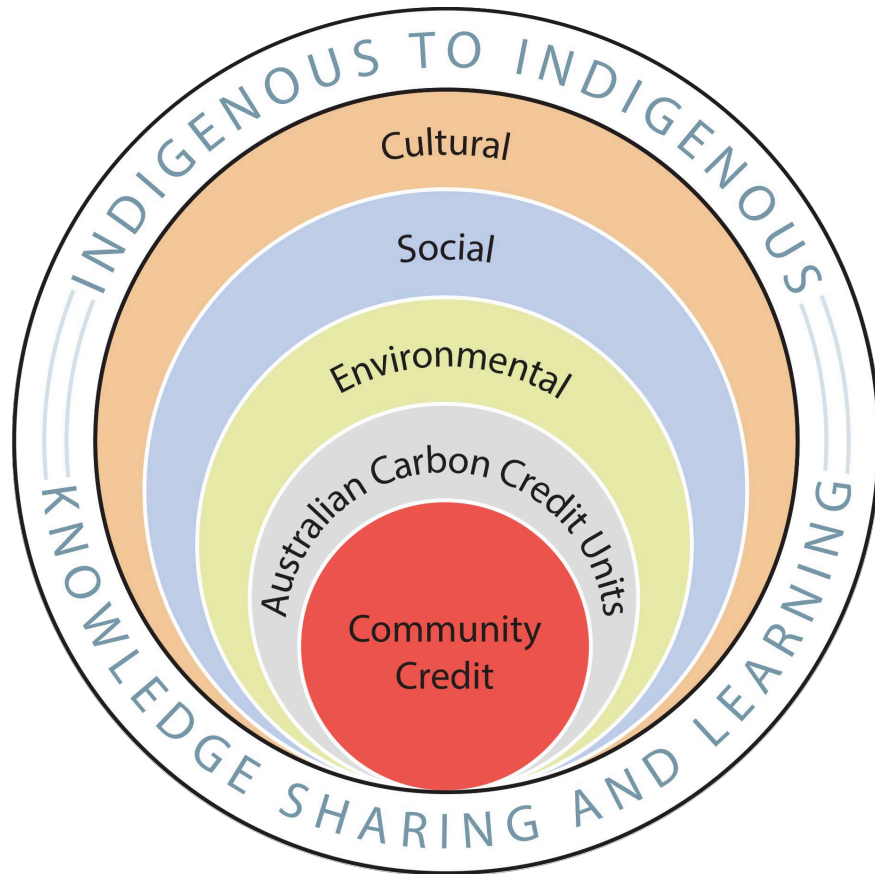
# Wider messages

- Land use preferences broadly falling in line with local and central government objectives regarding afforestation for sequestration and erosion control
- Maori own a disproportionate share of ‘marginal land’ in NZ
  - Inherent issues of equity when considering historical land alienation, and the push for Māori to carbon farm considering the negligible contribution by Māori to NZs historic GHG emissions
  - Assisting the decision making process with independent expert advice and finance is key to supporting more Māori landowners to fulfil their land use aspirations + supporting innovative trusts/incorporations and local champions
  - Resilience, diversification and mosaic of land uses desired

# Aboriginal Carbon Foundation

- Supports traditional owners to reduce emissions from out of control wildfires with early dry season controlled burns
  - Savanna burning methodology under the ERF affirms indigenous knowledge and land management
  - On average reductions of 1.3 million tonnes of CO<sub>2</sub> are achieved through savanna burning projects (DISER, 2020)

# Core Benefits Verification Framework



(AbCF, 2020)

# Learnings from New Zealand

- Whilst flawed, and largely toothless for the majority of its existence, the NZ ETS (when given teeth) can be an efficient and stable emissions reduction tool
- Lowest cost abatement has led to huge swathes of productive sheep and beef farmland being converted into monoculture *pinus radiata* plantations



# Learnings from Australia

- Real opportunity to replicate the Indigenous to Indigenous core benefit methodology to ensure that carbon abatement provides maximum benefit to indigenous communities
- Assuring provenance of ACCUs, and variety of ACCUs can work to suit suppliers and purchasers
- Purchasers of carbon credits ensure purchasing power has maximum beneficial impact

# Learnings from Australia cont.

- Adeptly combines traditional knowledge and Western science in a hugely innovative way
- Collectivisation serves to limit risk and smooth bureaucracy which limits risk and over exposure
- Generates sufficient quantity of credits to satisfy the requirements of large emitters