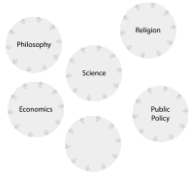
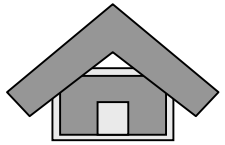
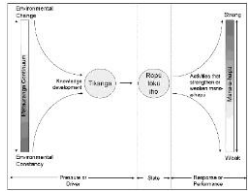
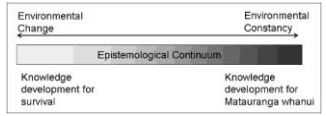
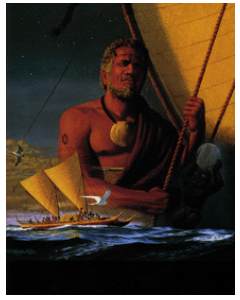



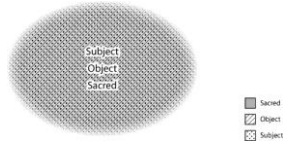









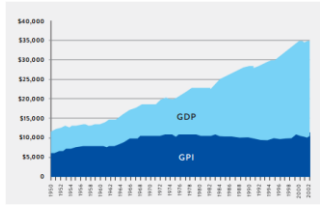


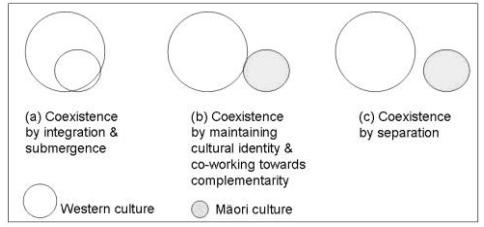










# Social and cultural assessment

## TANK catchments

# Anthony Cole

- Ngāti Koroki / Ngāti Raukawa ki te Tonga
- Kaupapa Māori / transdisciplinary researcher
- Māori cultural wellbeing and survival
- Whānau business (digital publishing and contract research)
- Work mostly with hapū
- Today - social and cultural impact assessment (TANK plan)

# 3 Key findings

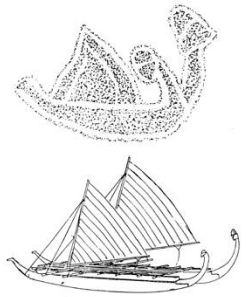
- Risk has been identified for some TANK sub-catchment communities linked with our current minimum flow scenarios (Ag First, Nimmo Bell and MEL)
- Recommendations provide suggestions for how this risk might be mitigated, reduced or possibly avoided
- The TANK plan (generally) and the question of minimum flows (specifically) touches on matters of social fairness and cultural survival that are of deep concern to Mana Whenua and local Māori communities

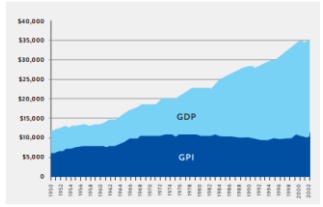
# Contents

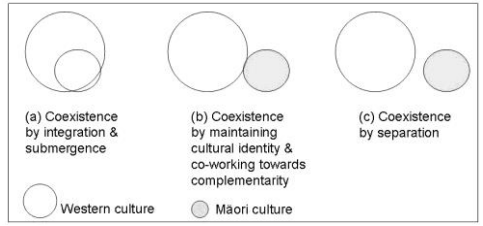
- How reliable are these results?
- Social and cultural assessment (SCIA) method
- Results
- Why? (NZ economic history)?
- Hawke’s Bay regional economy – structure
- Hawke’s Bay regional economy – social fairness
- Summary of findings
- Recommendations

# How reliable are these results?

## Proposed plan for the management of community ecosystems in the TANK catchments

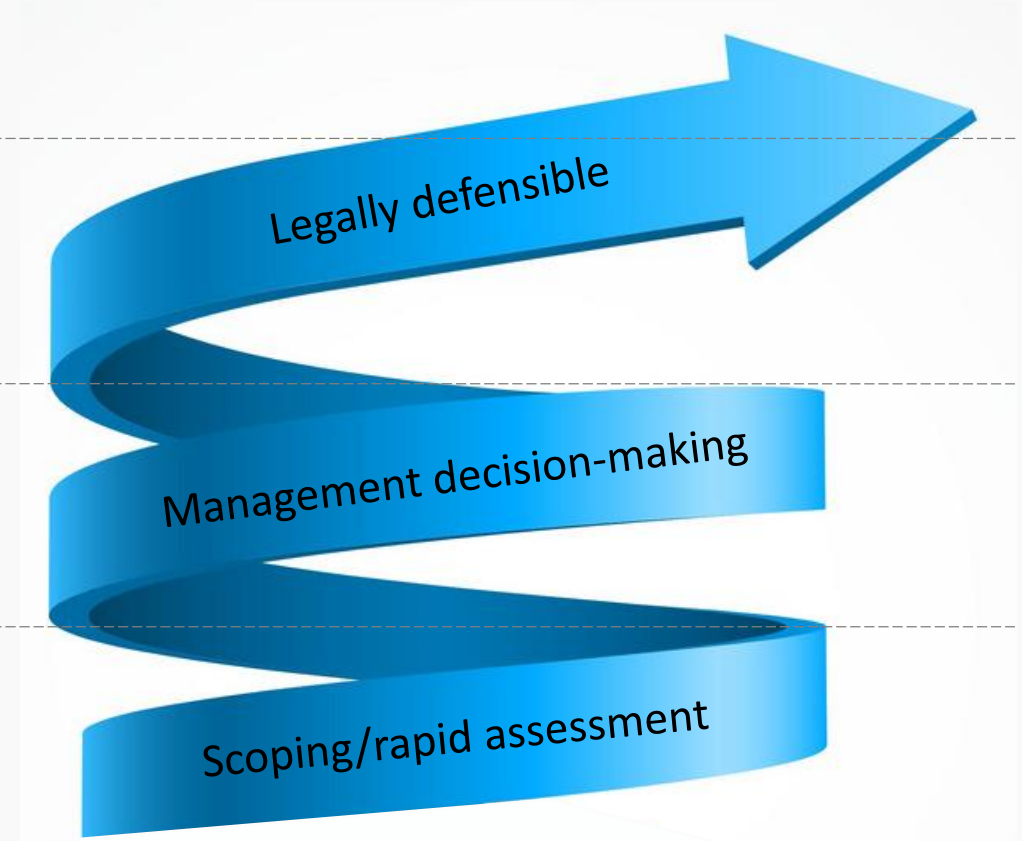




# Research outcomes spiral

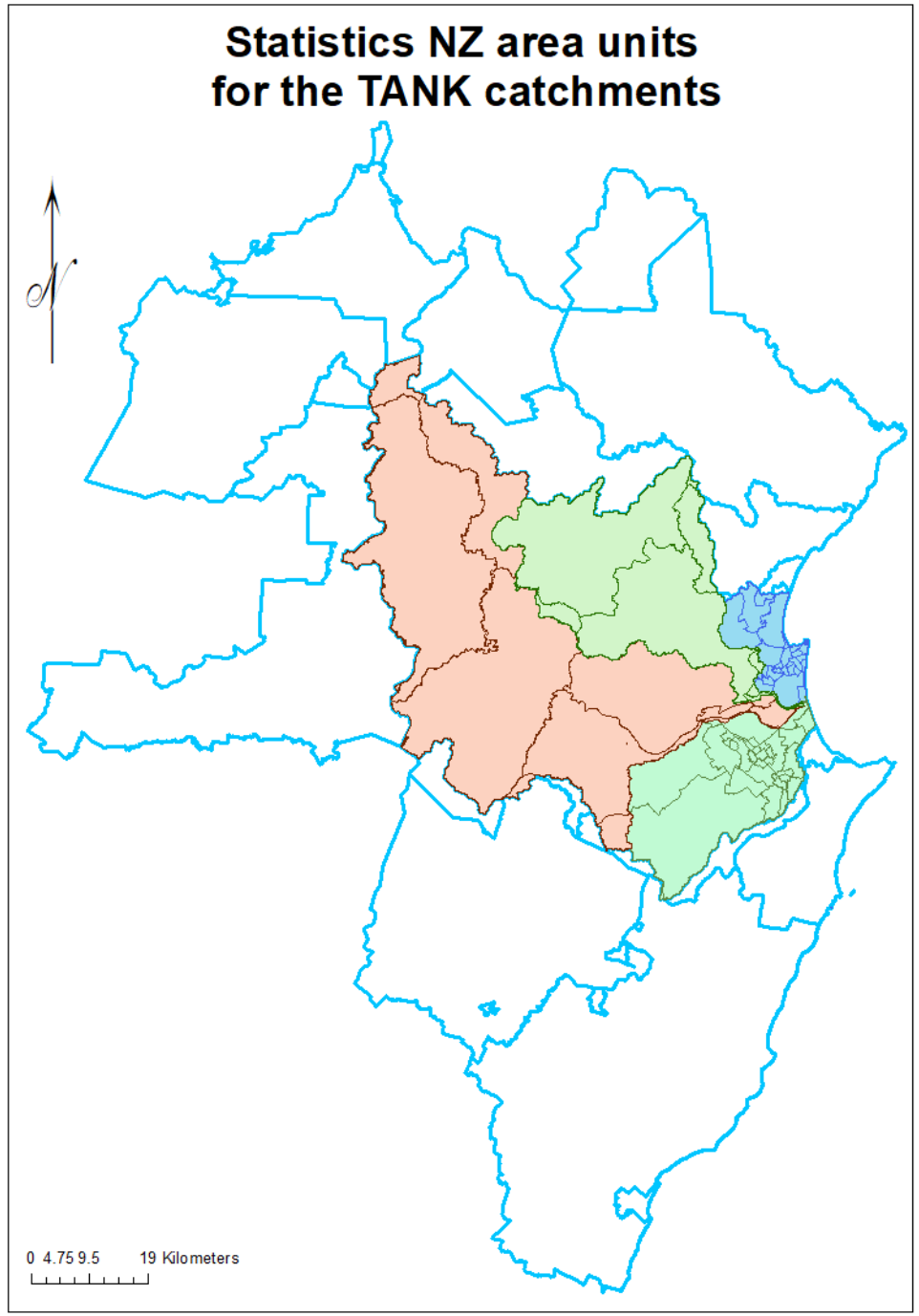
| Time | Cost |
|---|---|
| Long time | High |
| Adaptive | Medium-high |
| Quick | Low |



# Overview of assessment accuracy

- **Theory** – well established
- **Economic time series data** (Statistics NZ, Reserve Bank, NZIER)
- **Catchment boundaries** (HBRC shapefiles)
- **Area unit boundaries** (Statistics NZ shapefiles)
- **Application of area unit data** at catchment scale estimated by spatial apportionment
  - Over-estimation problem

# Statistics NZ area units for the TANK catchments

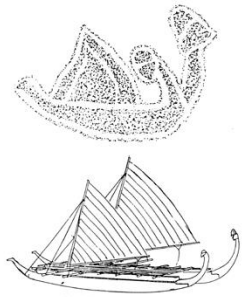


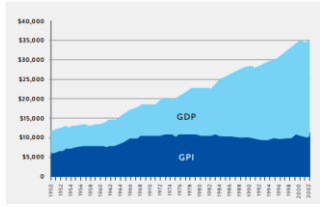
# Overview of assessment accuracy

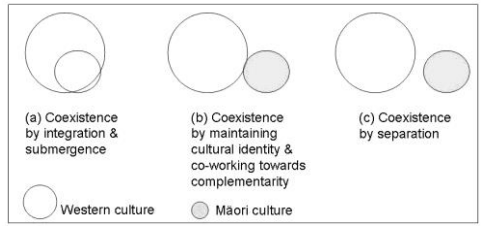
- **2018 Census data** is not yet available
- **Population growth projections** - averaged area unit growth rates (1996-2013) - this really needs a dynamic model
- **Variability** in some Statistics NZ data
  - Confidentiality policies
  - Not all Census questions are answered (i.e. ‘not stated’)
  - Some data is based on sample population estimates

# Social and cultural assessment (SCIA) method

## Proposed plan for the management of community ecosystems in the TANK catchments





# Assessment rationale

- Evidential *rather than discursive*
- Mixed units - total, percentage, indices, $ and sample data graphs
- Data structured by sub-catchment and area unit
- This presentation - key insights *only*

# Legislative responsibility (RMA 1991, part 2, section 5)

The sustainable management of *community ecosystems in the TANK catchments* while —

(a) sustaining the potential of *these* natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of *TANK* water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of TANK *community production and/or consumption* activities on the *catchment* environment.

# Legislative responsibility (RMA 1991, part 2, section 5)

The sustainable management of *community ecosystems in the TANK catchments* while *achieving the goals of* —

(a) Social fairness

(b) Ecological sustainability

(c) Do no more harm

# Legislative responsibility (RMA 1991, part 2, section 5)

The sustainable management of *aquatic ecosystems in the TANK catchments* while *achieving the goals of* —

(a) Social fairness – poorly considered

(b) Ecological sustainability

(c) Do no more harm

(d) Māori cultural survival – missing from the RMA (1991)

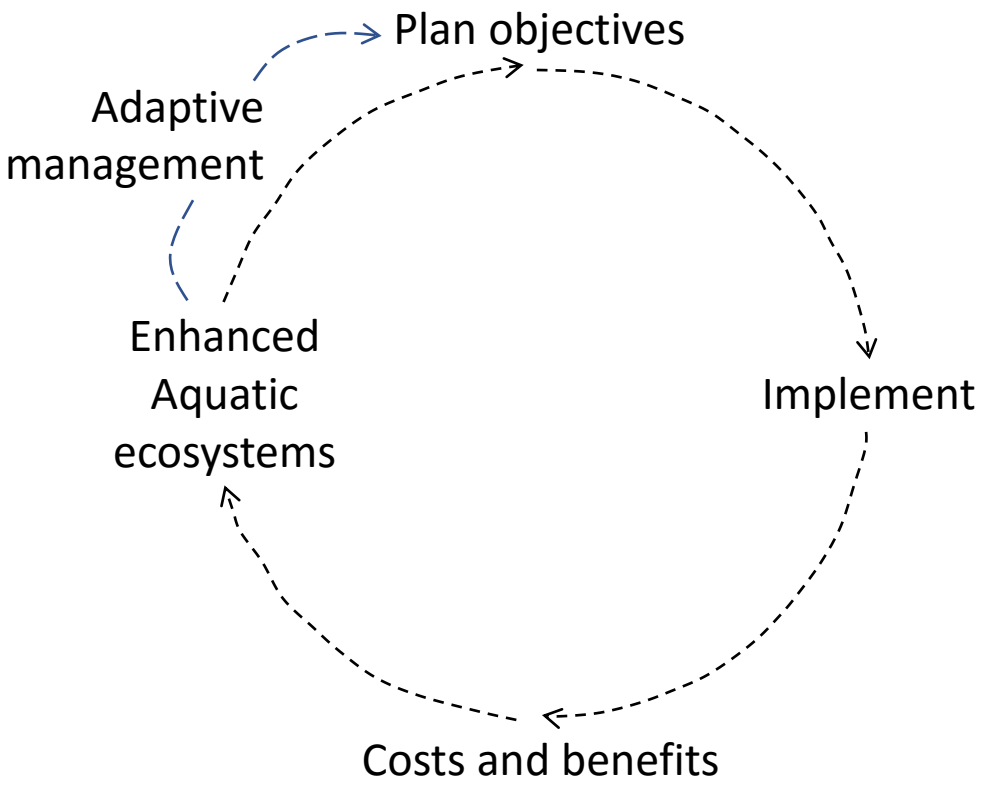
# Section 32 requires (RMA 1991, part 4, section 32)

- The most appropriate way to achieve the purpose of this Act …
- Have regard to the efficiency and effectiveness of policies, rules, or other methods …
- The benefits and costs of policies, rules, or other methods …
- The risk of acting or not acting if there is uncertain or insufficient information *(the precautionary principle)* …

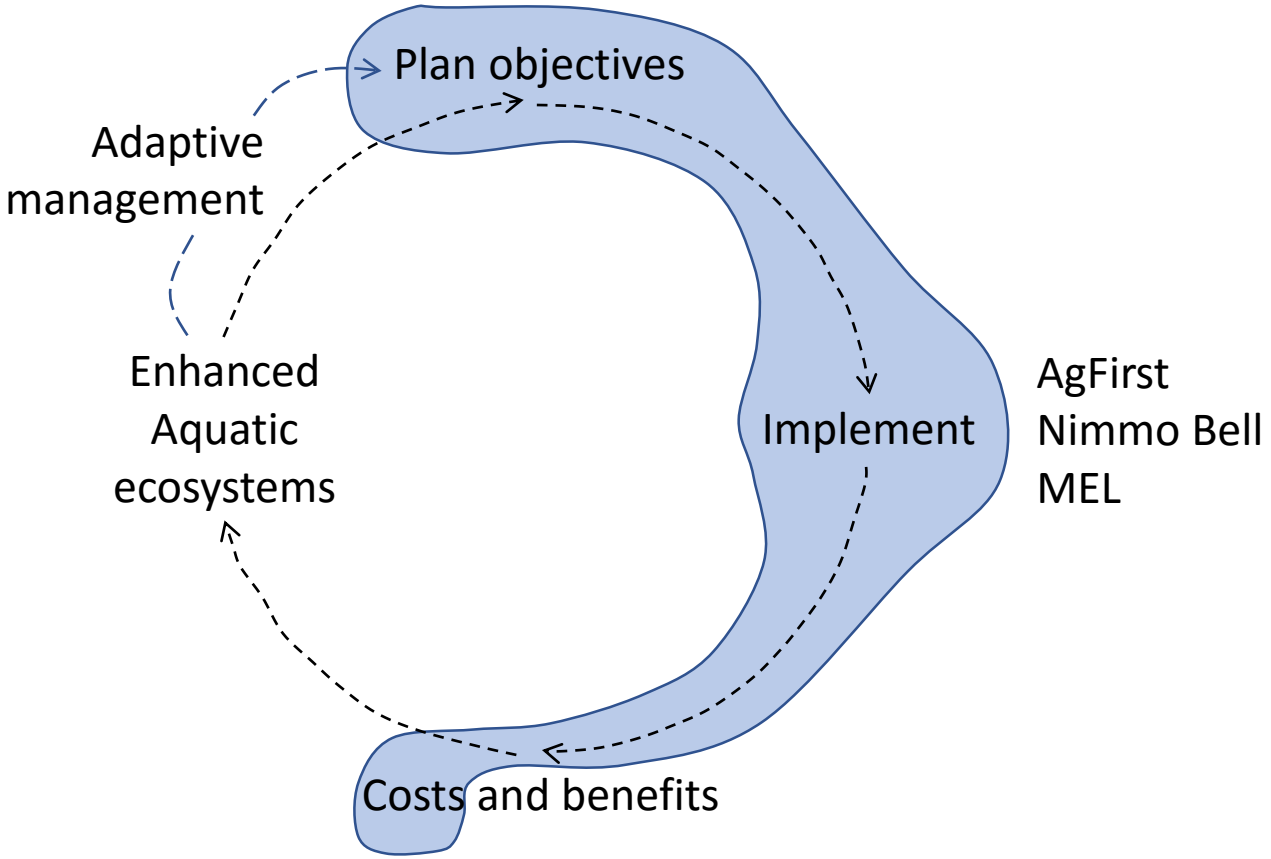
# The precautionary principle

- … implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk.
- These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result.

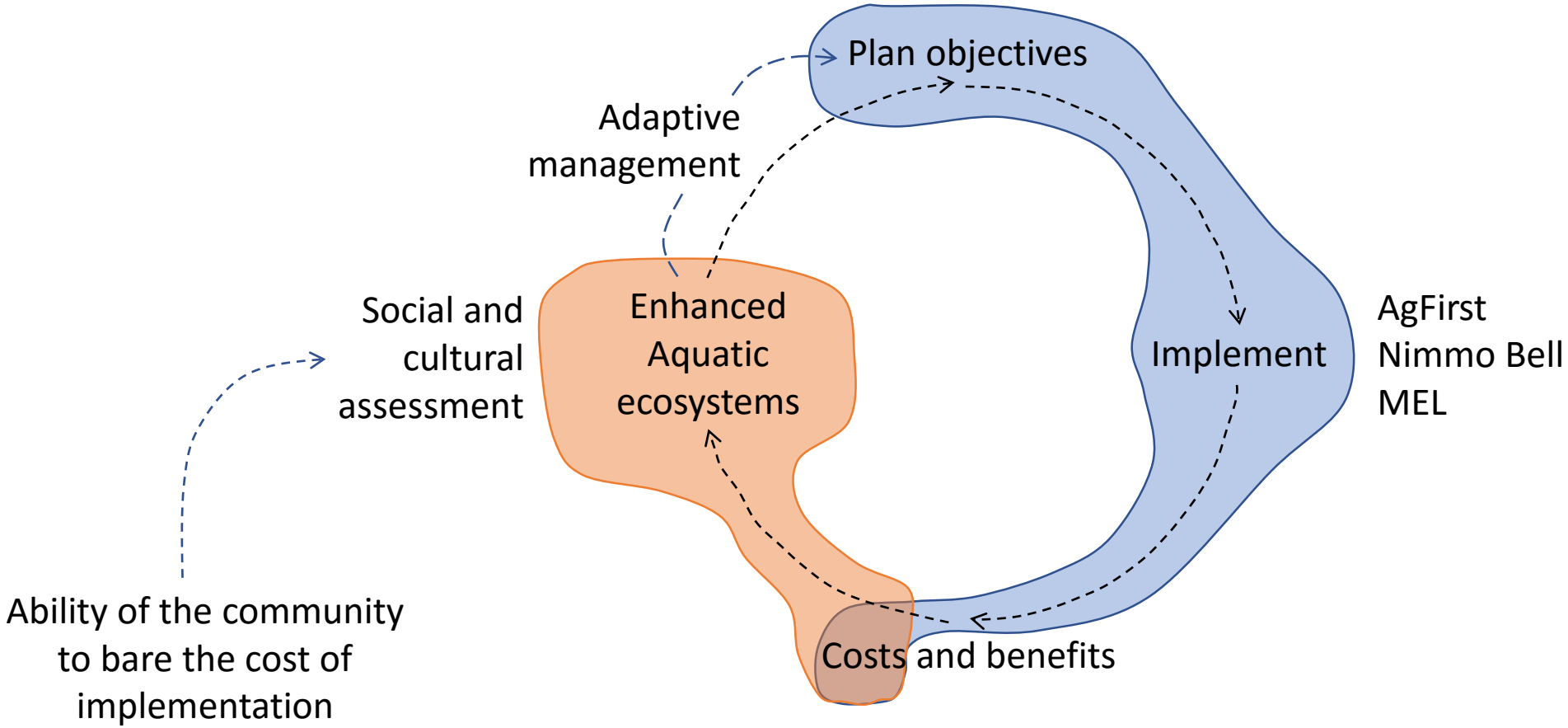
# TANK plan implementation pathway



# Section 32 (economic evaluation)



# Section 32 (social and cultural assessment)

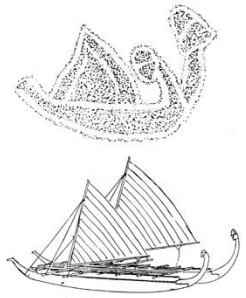


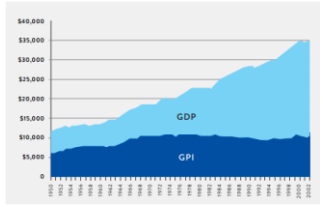
# The SCIA measurement problem

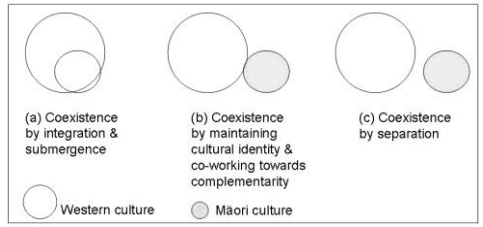
- Look at the economic affects of the TANK plan on TANK catchment communities linked with …
  - Implementation overall (compliance costs to all communities)
  - Minimum flows/land conversion scenarios (modelling work of MEL)
  - The above compared against the present (business as usual) – i.e. do nothing

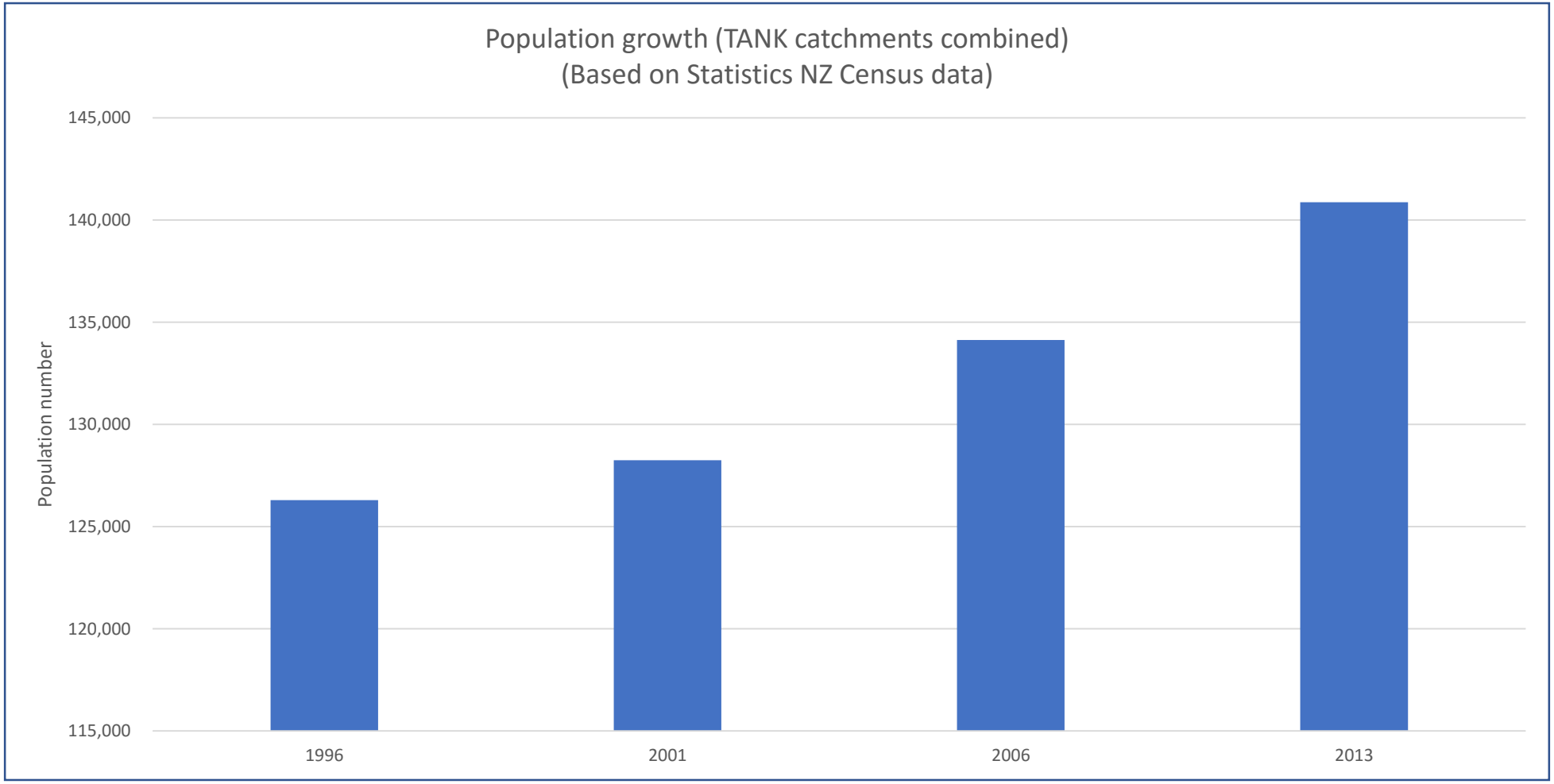
# Total catchment population

## Social and cultural evaluation of TANK catchment communities

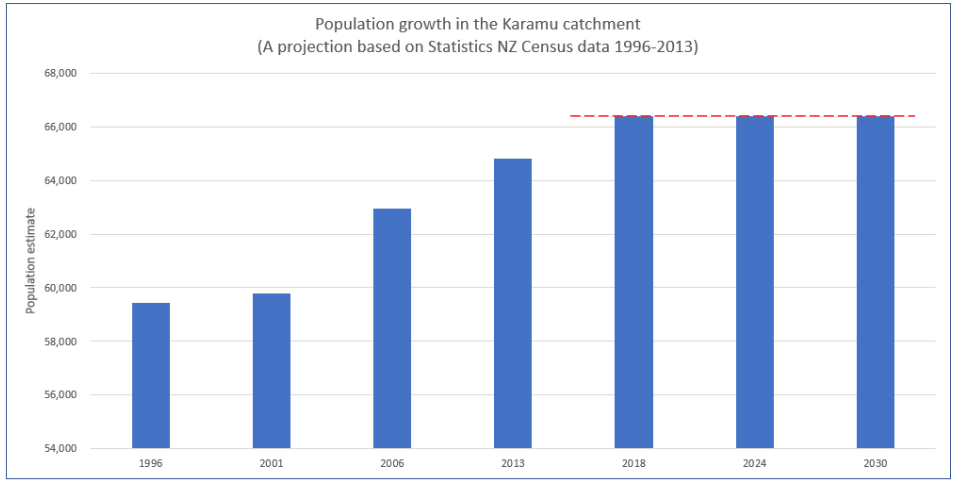




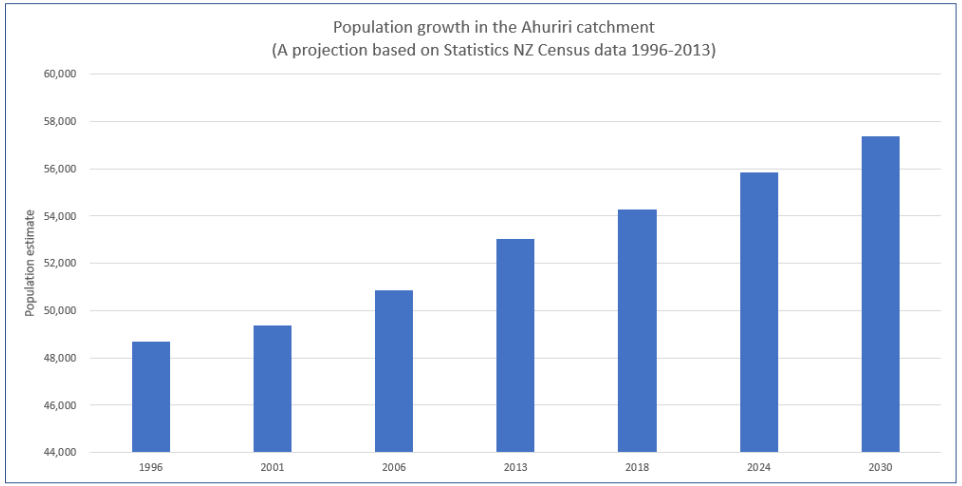




Population growth (TANK catchments combined)
(Based on Statistics NZ Census data)
Population number
145,000
140,000
135,000
130,000
125,000
120,000
115,000
1996
2001
2006
2013

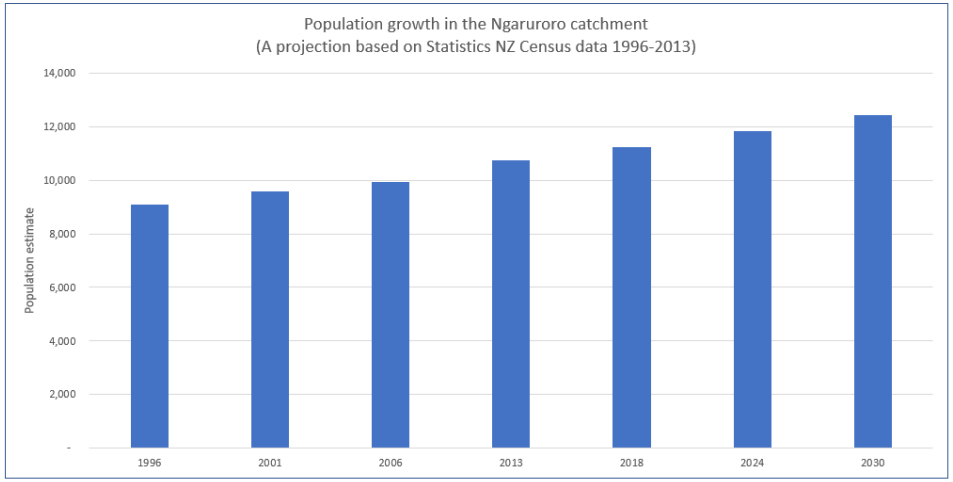
## Karamu sub-catchment



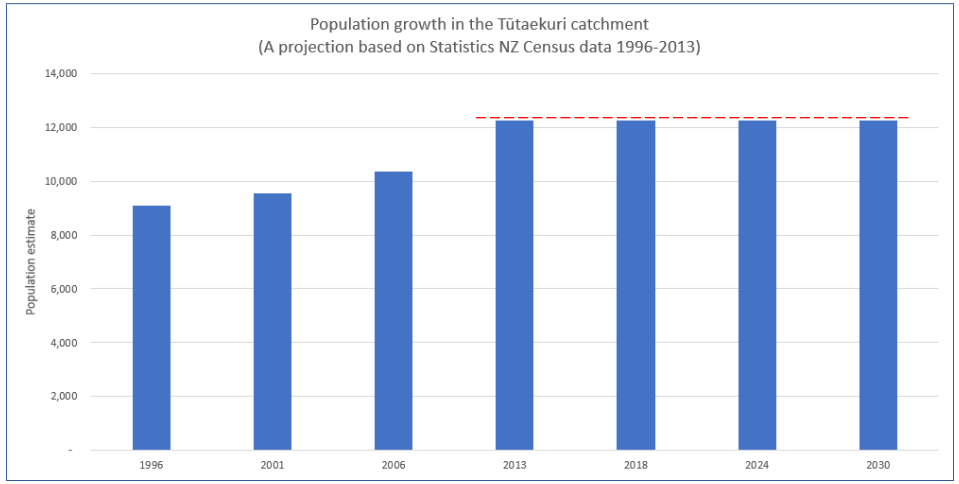

## Ahuriri sub-catchment



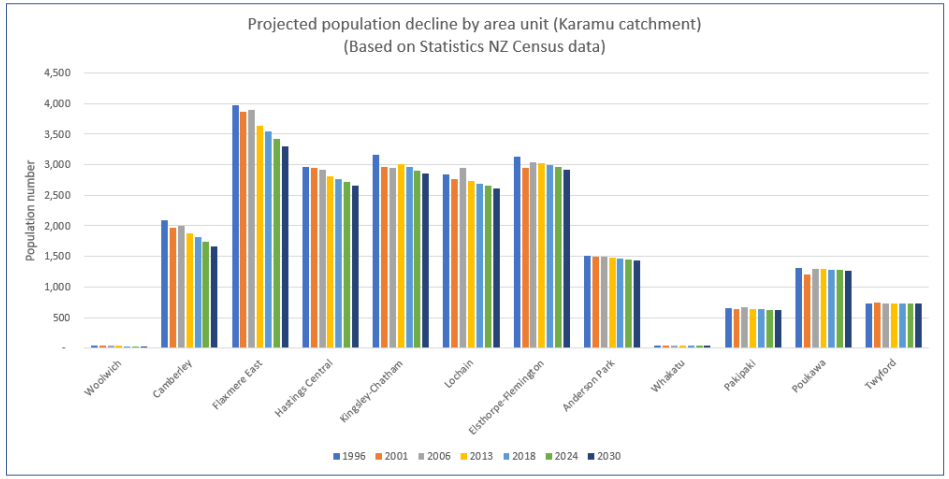

## Ngaruroro sub-catchment



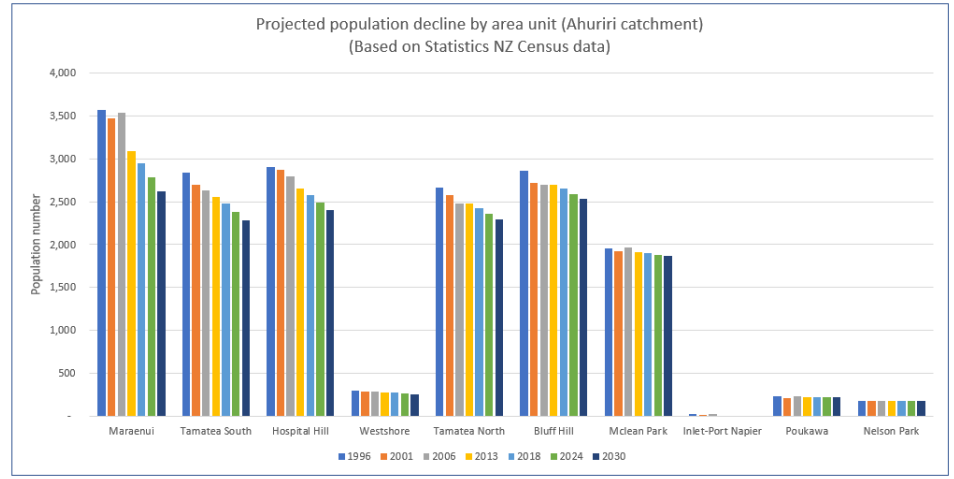

## Tūtaekurī sub-catchment



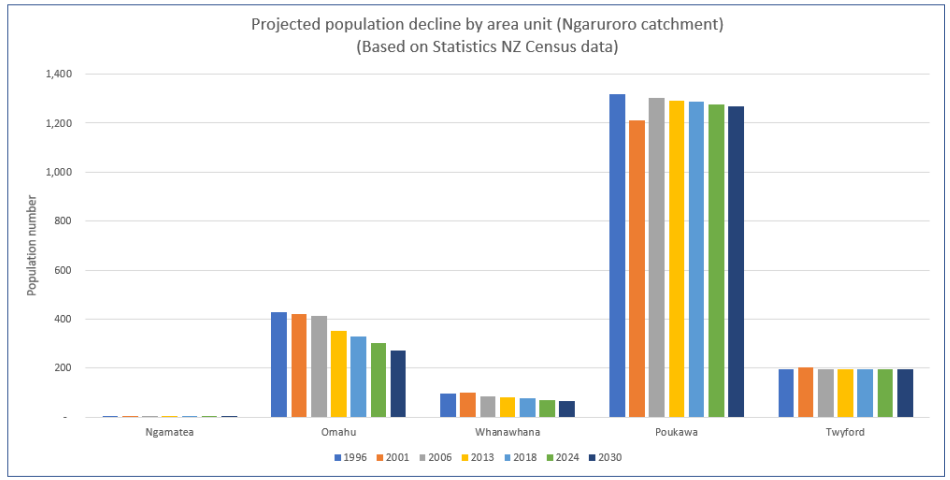
## Karamu sub-catchment



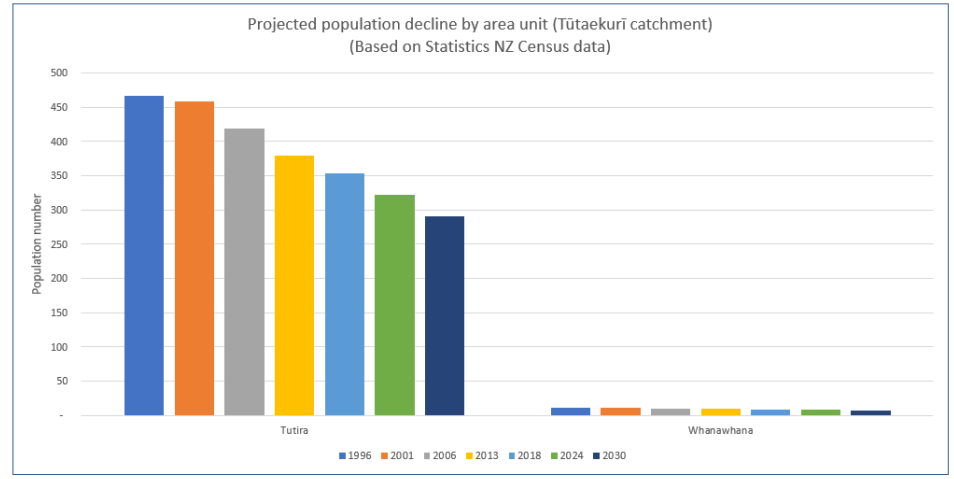

## Ahuriri sub-catchment




## Ngaruroro sub-catchment




## Tūtaekurī sub-catchment

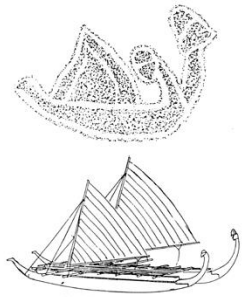


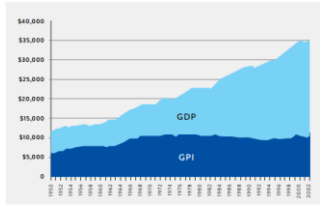
# Why is population stagnation a problem?

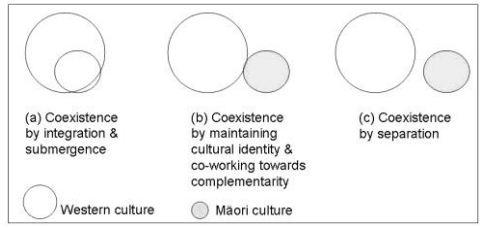
- Emigration - loss of economic, social and cultural capital
- Implications for the local labour market
- Question - why is there a ‘net’ outflow?

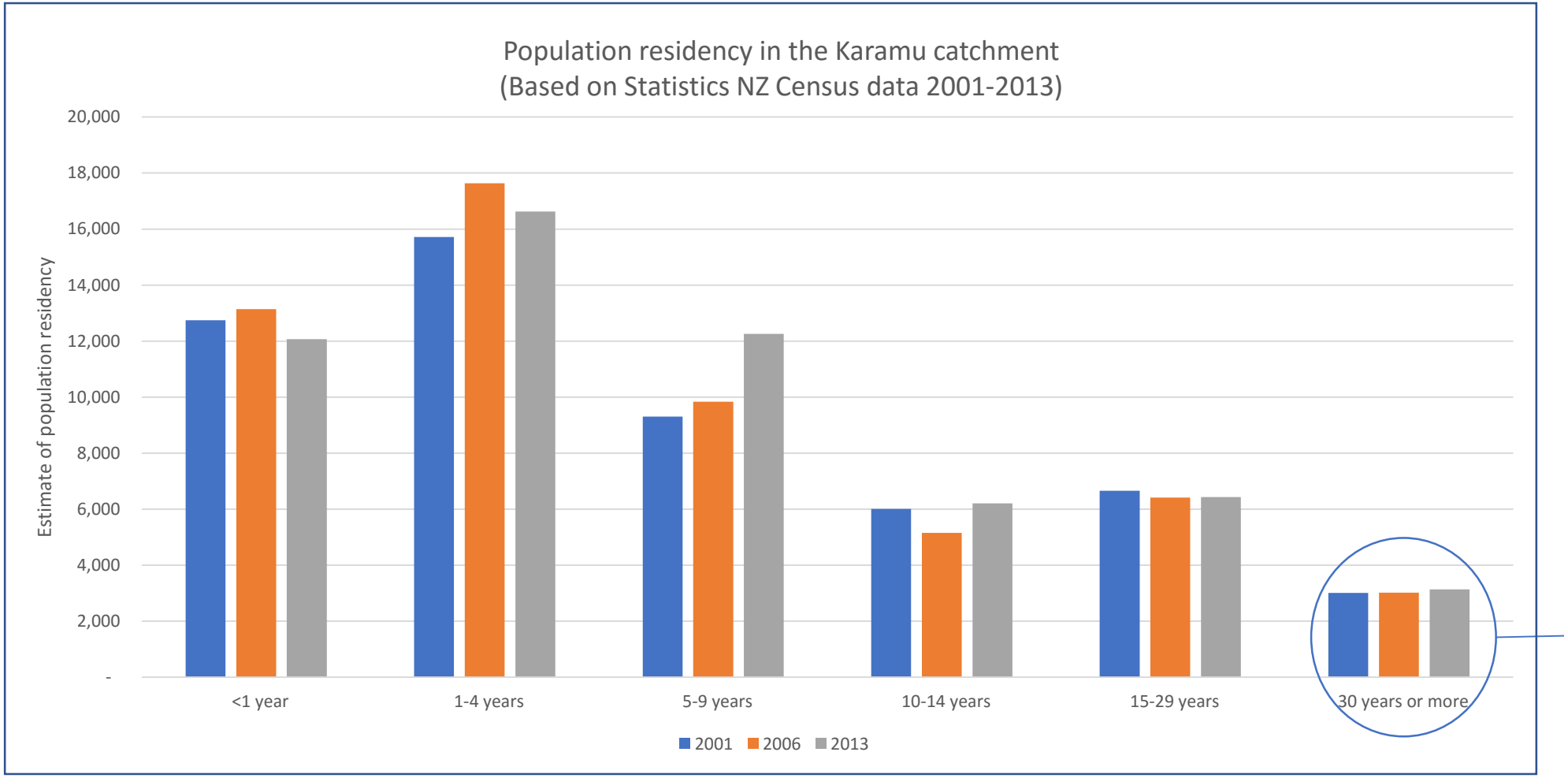
# Population residency times

## Tank catchments (2006-2013)

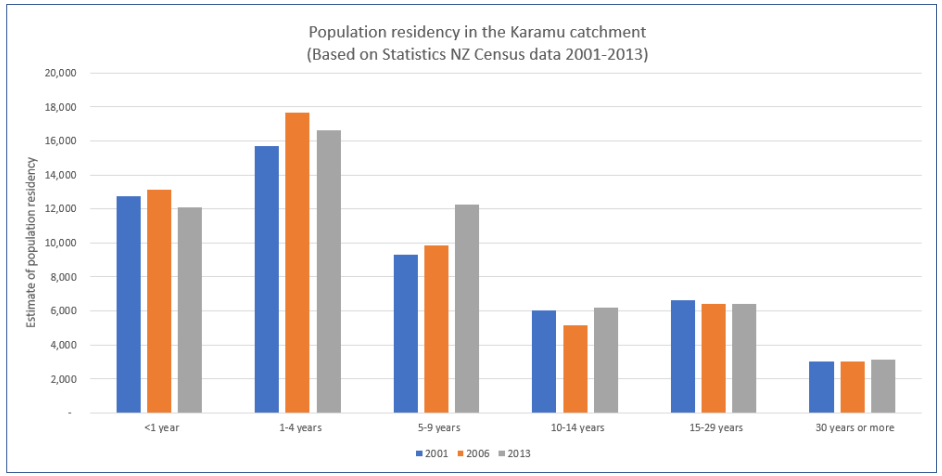




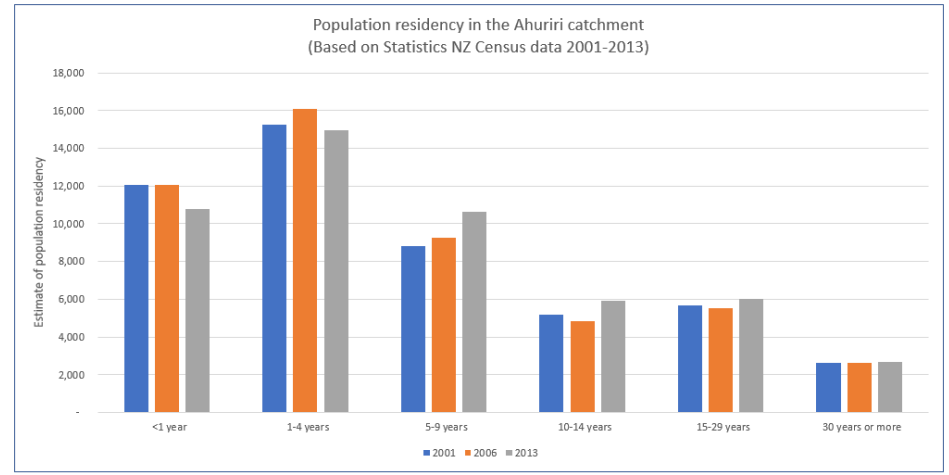




Population residency in the Karamu catchment
(Based on Statistics NZ Census data 2001-2013)
Estimate of population residency
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
<1 year
1-4 years
5-9 years
10-14 years
15-29 years
30 years or more
2001
2006
2013
Cultural memory

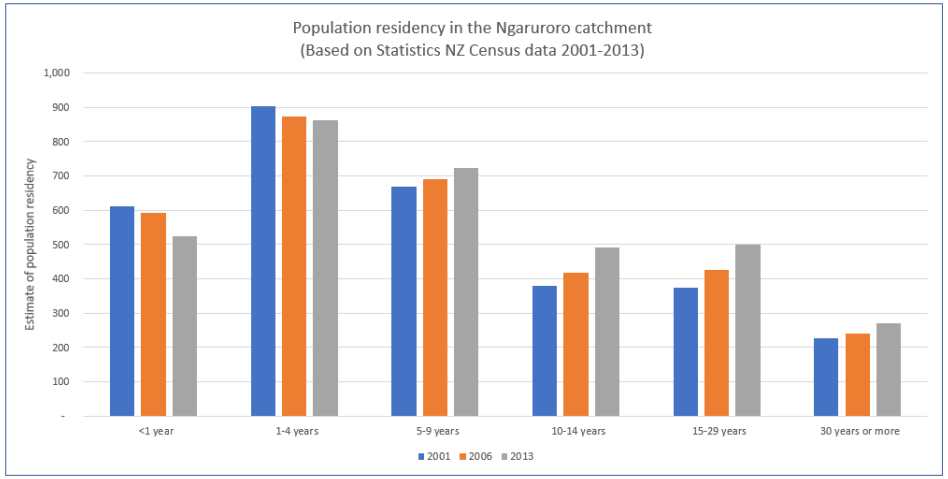
## Karamu sub-catchment



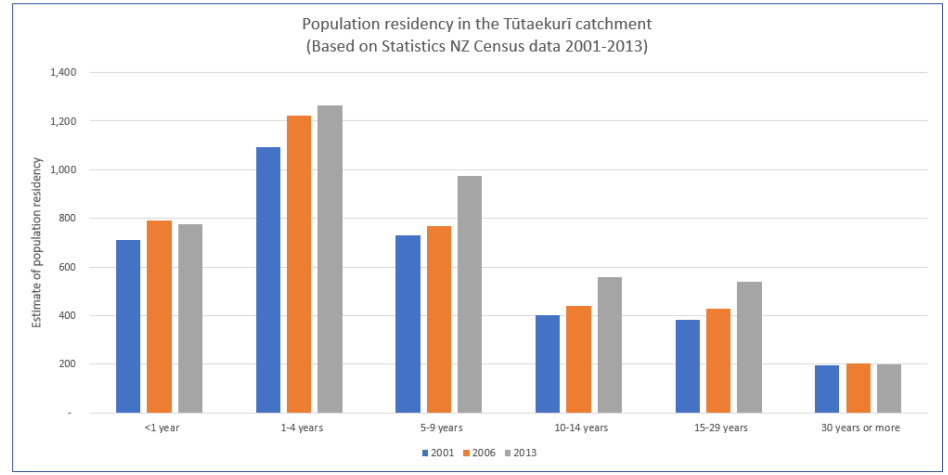

## Ahuriri sub-catchment

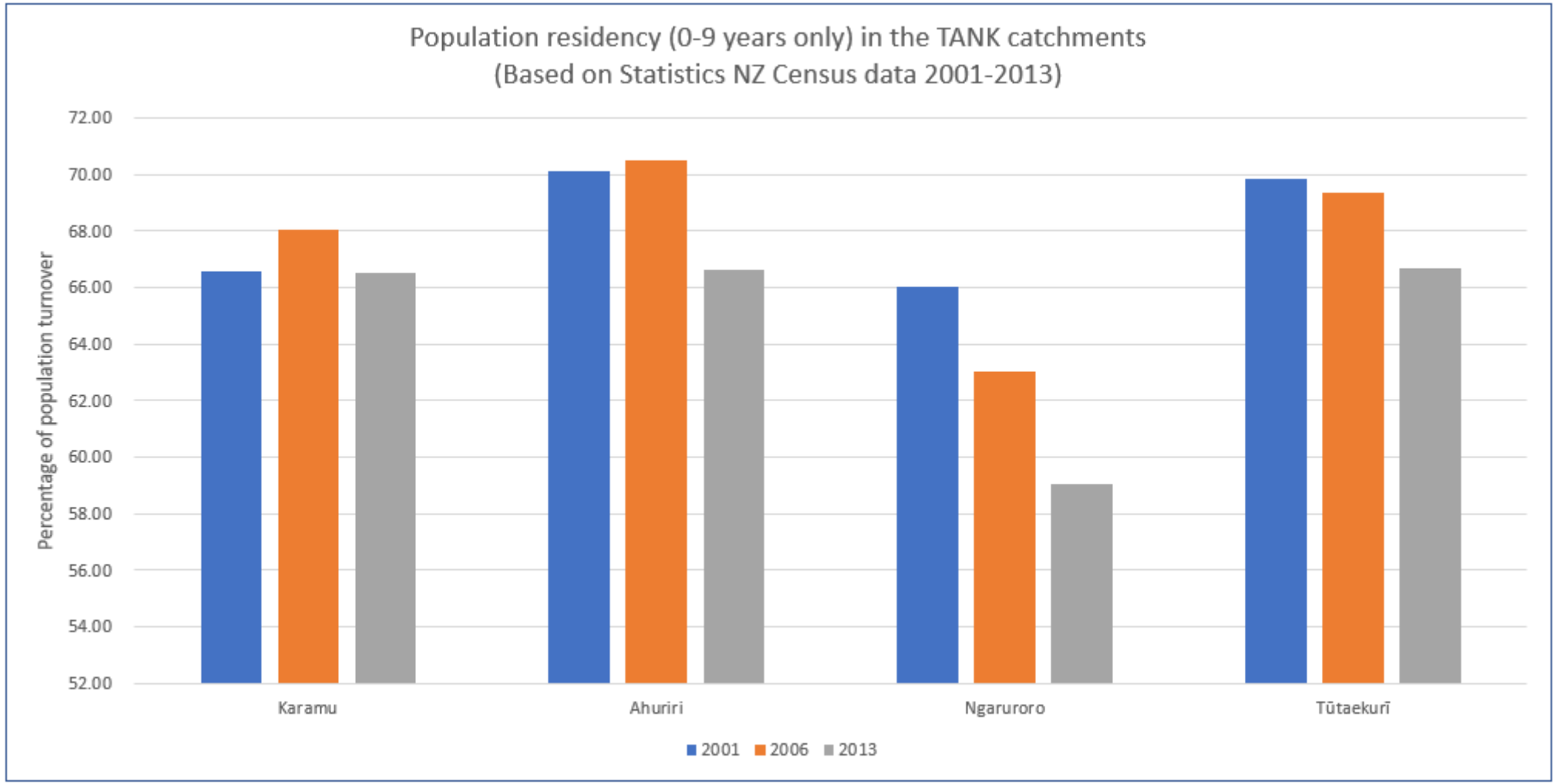



## Ngaruroro sub-catchment




## Tūtaekurī sub-catchment



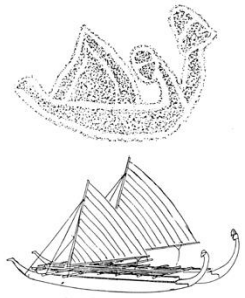

Population residency (0-9 years only) in the TANK catchments
(Based on Statistics NZ Census data 2001-2013)
Percentage of population turnover
72.00
70.00
68.00
66.00
64.00
62.00
60.00
58.00
56.00
54.00
52.00
Karamu
Ahuriri
Ngaruroro
Tūtaekurī
2001
2006
2013

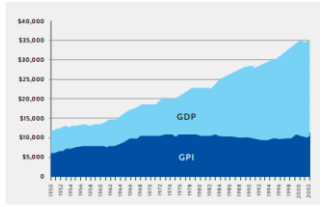
# Key issues

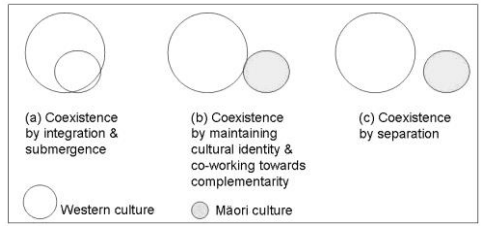
- The creation and maintenance of (Māori) ‘cultural memory’ is at risk
- Approx. 60-70% population turnover (0-9 years)
  - Need for ongoing education on local environmental context, policies, rules
  - Upward pressure on the housing market
  - 10 yearly shifts in sub-catchment population *age structure*

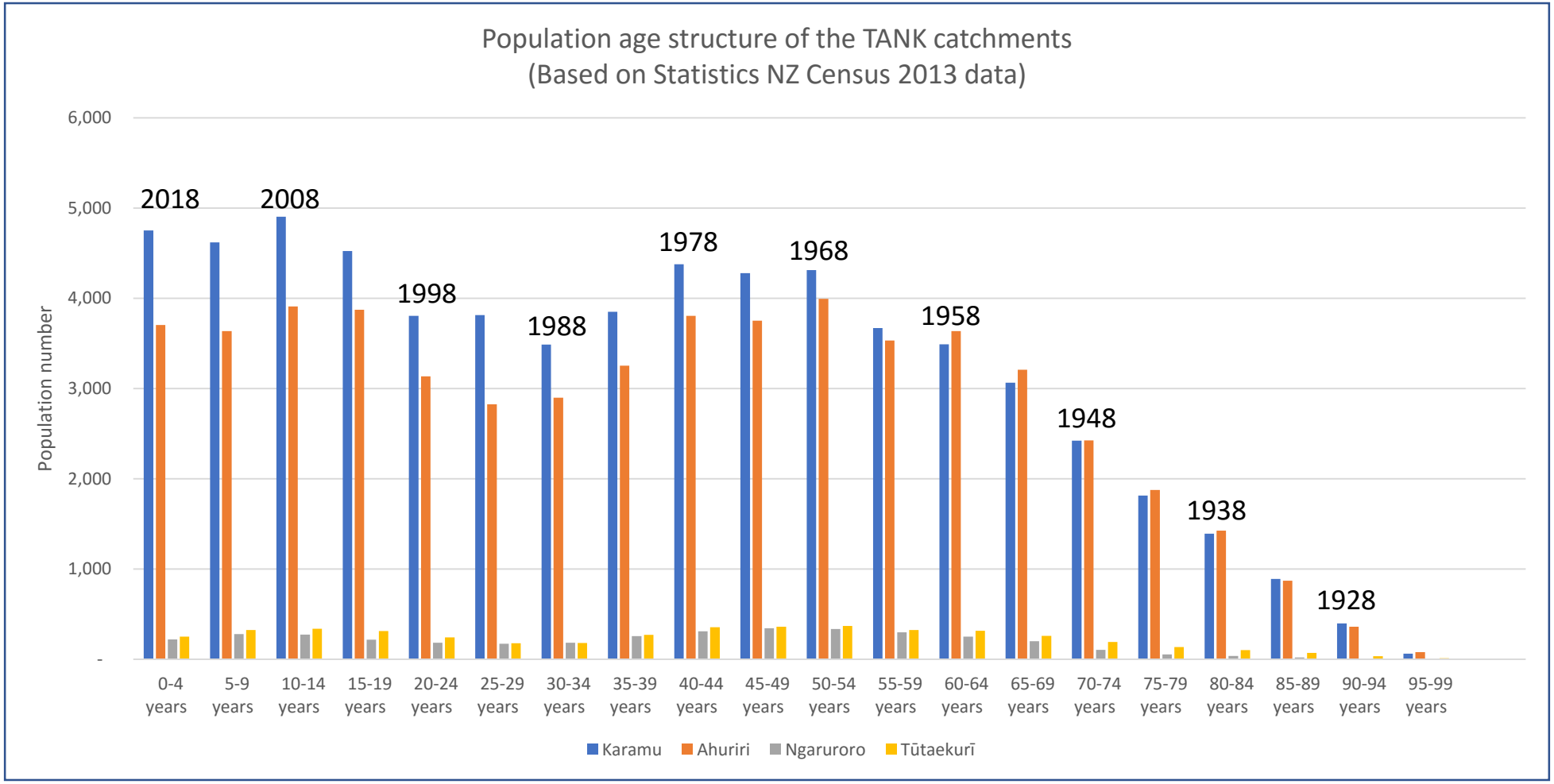
# Population age structure

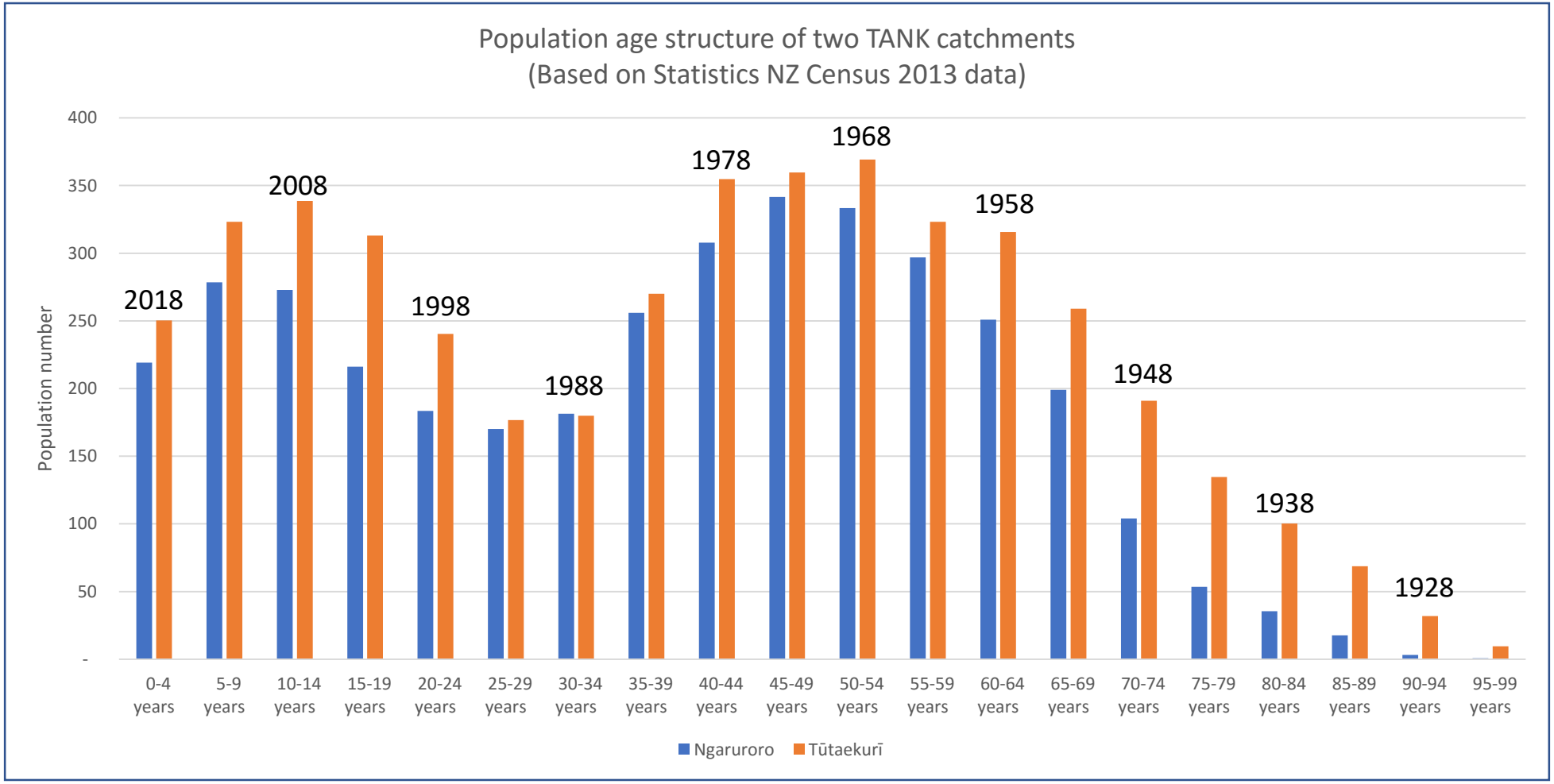
## Tank catchments (2006-2013)






Population age structure of the TANK catchments
(Based on Statistics NZ Census 2013 data)
Population number
6,000
5,000
4,000
3,000
2,000
1,000
-
2018
2008
1998
1988
1978
1968
1958
1948
1938
1928
0-4 years
5-9 years
10-14 years
15-19 years
20-24 years
25-29 years
30-34 years
35-39 years
40-44 years
45-49 years
50-54 years
55-59 years
60-64 years
65-69 years
70-74 years
75-79 years
80-84 years
85-89 years
90-94 years
95-99 years
Karamu
Ahuriri
Ngaruroro
Tūtaekurī

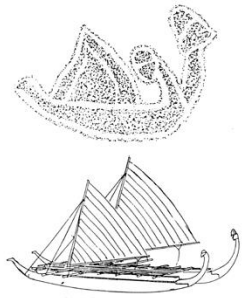

Population age structure of two TANK catchments
(Based on Statistics NZ Census 2013 data)
Population number
400
350
300
250
200
150
100
50
-
2018
2008
1998
1988
1978
1968
1958
1948
1938
1928
0-4 years
5-9 years
10-14 years
15-19 years
20-24 years
25-29 years
30-34 years
35-39 years
40-44 years
45-49 years
50-54 years
55-59 years
60-64 years
65-69 years
70-74 years
75-79 years
80-84 years
85-89 years
90-94 years
95-99 years
Ngaruroro
Tūtaekurī

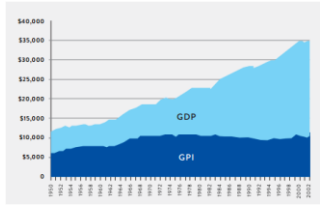
# Key issues and implications

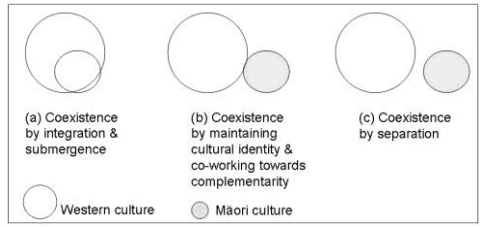
- An ageing population that spans the next ca. 50 years, followed by …
- A sub-replacement population (ca. 30 years)
- Expanding urban populations (Ahuriri and Karamu)
- Sub-replacement rural populations (Ngaruroro and Tūtaekurī)
- Implications:
  - Infrastructure and services for ageing population?
  - Labour market compensation will be needed (next 80 years)
  - Because of high population turnover (50-60% in 0-9 years) age structure is migration dependent (difficult to predict/plan for)

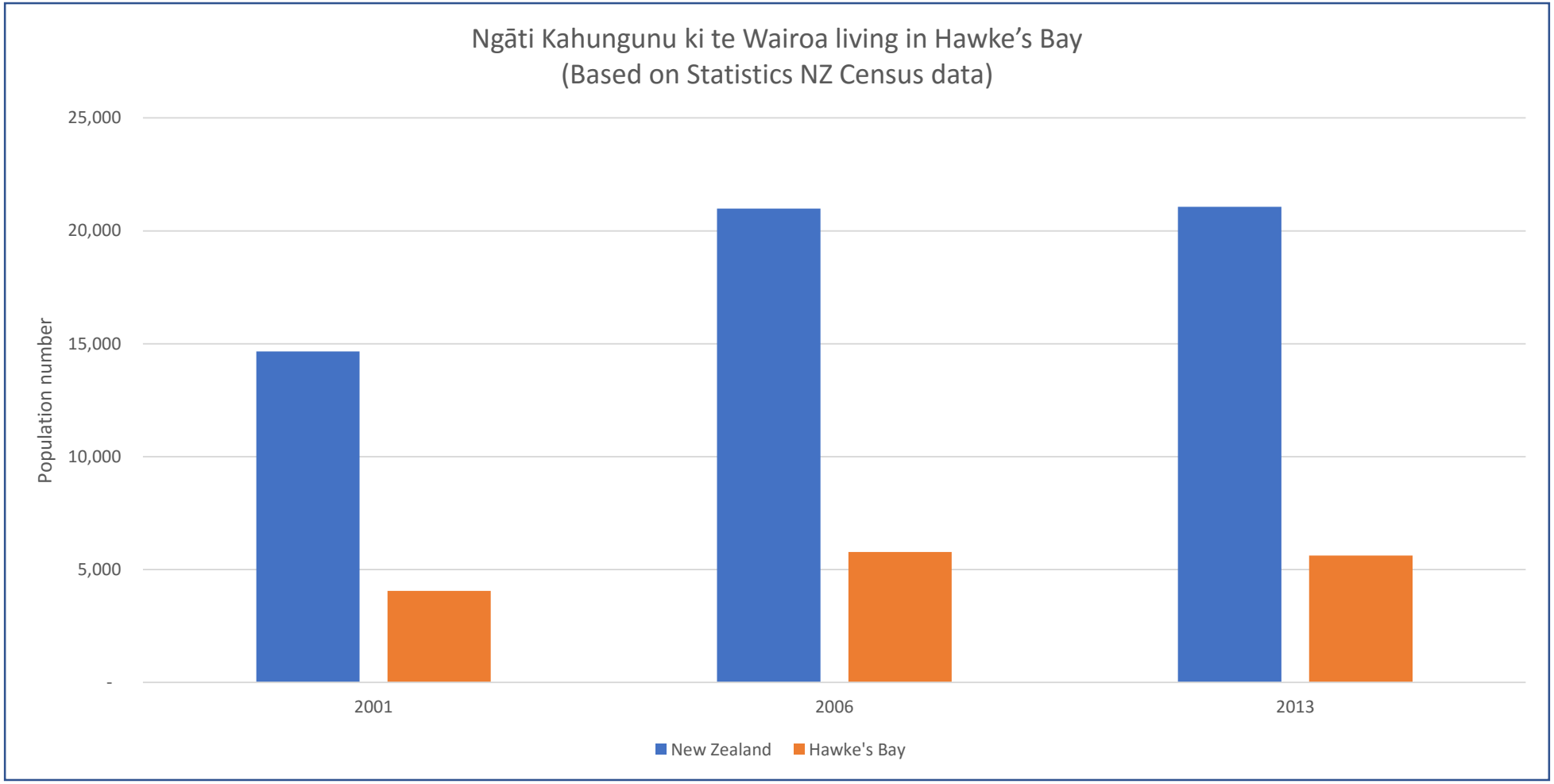
# Whānau Kahungunu

## Tank catchments (2006-2013)

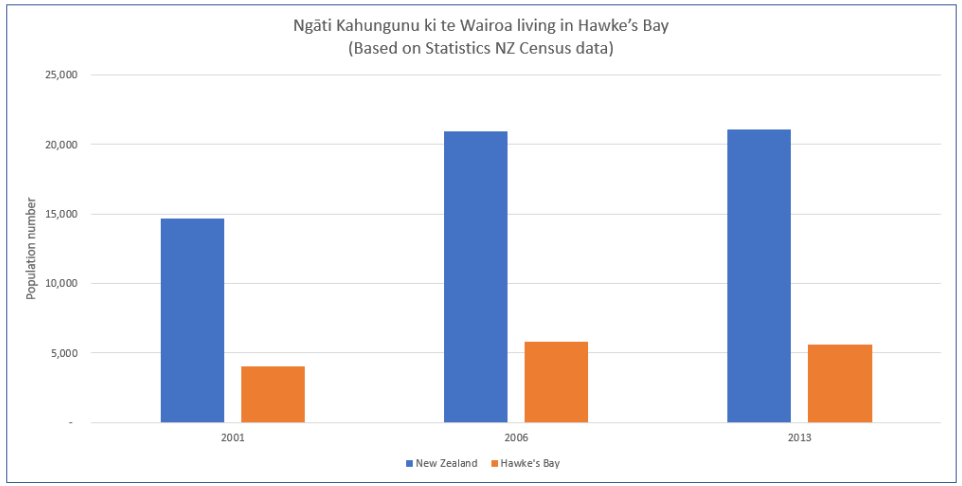




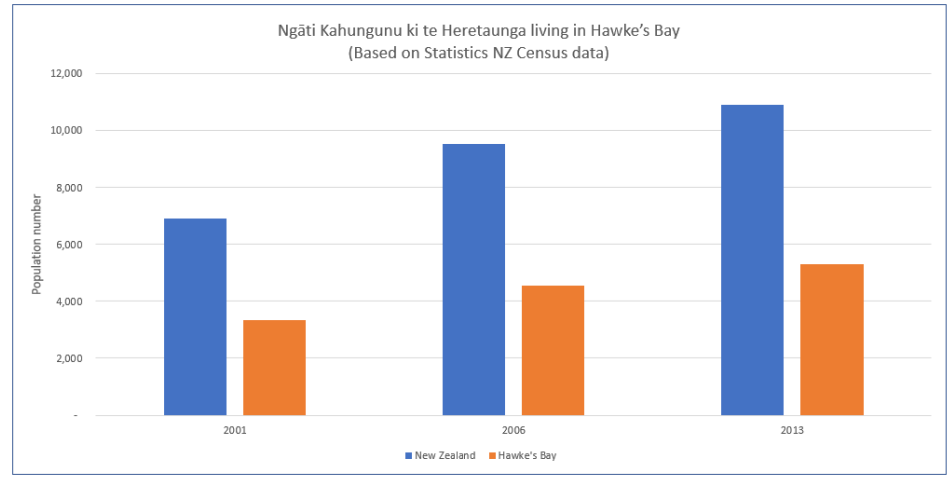




Ngāti Kahungunu ki te Wairoa living in Hawke’s Bay
(Based on Statistics NZ Census data)
25,000
20,000
15,000
10,000
5,000
-
Population number
2001
2006
2013
New Zealand
Hawke's Bay

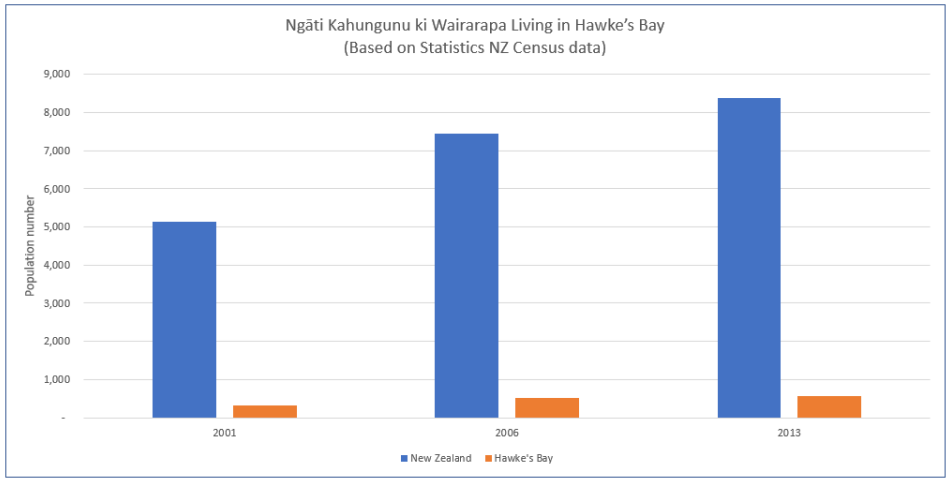
## Kahungunu ki te Wairoa



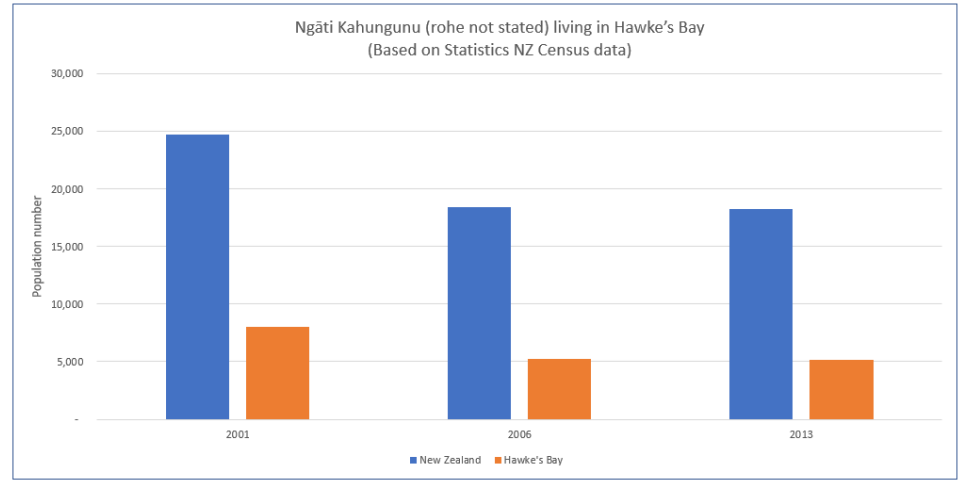

## Kahungunu ki te Heretaunga




## Kahungunu ki te Wairarapa




## Kahungunu (Not stated)



# Whānau Kahungunu residency implications

- Māori cultural wellbeing and survival = whānau Māori (1st priority)
- For whānau to come home they need jobs, homes, social and ecosystem services (An estimated 27,342 whānau members)
- This situation diminishes cultural survival prospects
- We need to think of Whānau Māori in the broadest possible sense – more than just a *nuclear family*
- When you are talking to Mana Whenua about ‘ecosystems’ you are really making reference to their family members

# The Māori family tree (whakapapa)

Papatūānuku ----------Ranginui

Tūmatauenga Tāwhirimatea Tāne Mahuta Tangaroa Rongo Haumia Tiketike Urutengangana Ruaumoko

Hine-ahu-one ---------- Tāne

Hime Titama Hine-nui-te-po

.

.

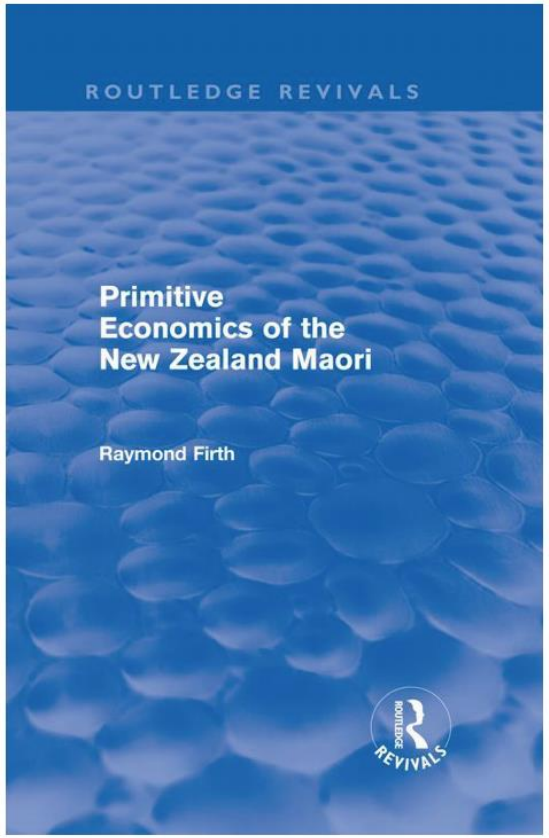
.

Tangata whenua

# Tangata Whenua (Teina – younger siblings)

# Raymond Firth (1929)

- “The life of the Māori, cannot be explained on the assumption that economic interests and needs have created their social structure ... Though modified by them, that structure had biological and social foundations of its own ... The economic activities of the Māori were developed, in short, within a framework set by the family ...”



# 2 models of economy in NZ

**NZ mixed market economy**

- Pākehā worldview
- English language
- Incentives and rewards
- Theoretically (value-free)
- Property rights
- Profit-making
- Free markets
- Pākehā cultural survival
- Whānau Māori decline
- Rules, laws, customs

**Whānau Māori = Ōhanga Māori**

- Te Ao Māori
- Te Reo Māori
- Incentives & rewards
- Kaupapa-based
- Whānaungatanga
- Manaakitanga
- Kotahitanga
- Whānau Māori survival
- Maintains whānau Māori wellbeing
- Kawa, kaupapa, tikanga

# The Ōhanga of our tūpuna

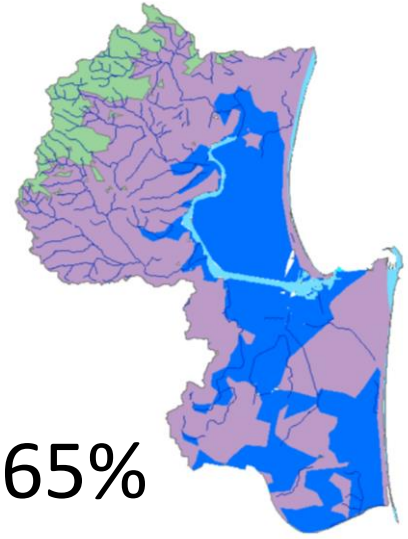
- Our tūpuna lived on these islands for 800–1,000 years while maintaining the survival and wellbeing of *themselves and the natural world* (i.e. Te whānau o Rangi rāua ko Papatūānuku)

# Capitalism and the market economy

- Within approx. 170 years, the introduction of a new model of economy has driven hapū and the natural world into decline, in some cases to the point of extinction

# TANK (indigenous forest)

pre-1840



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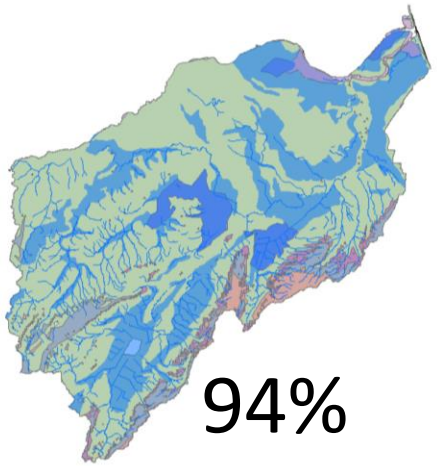

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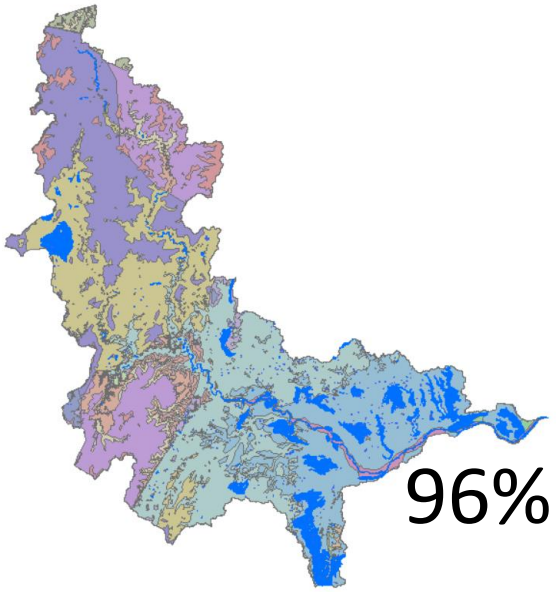

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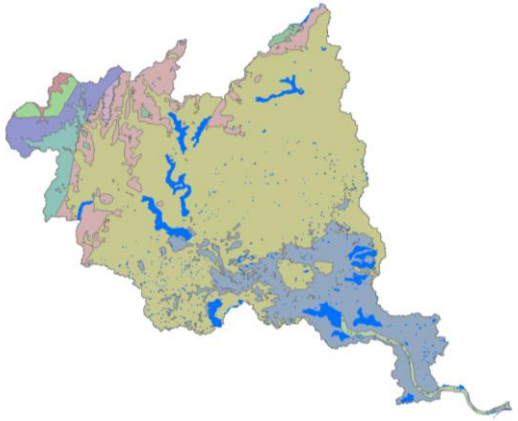

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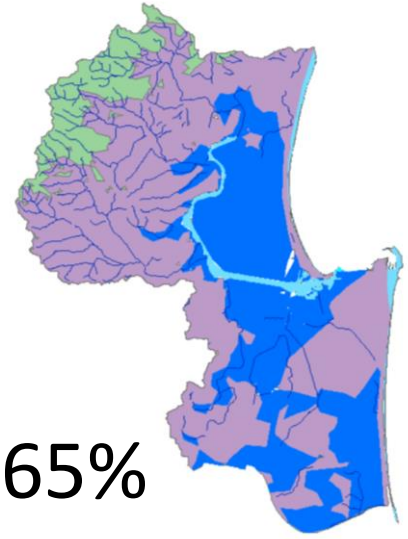
# TANK (indigenous forest)

pre-1840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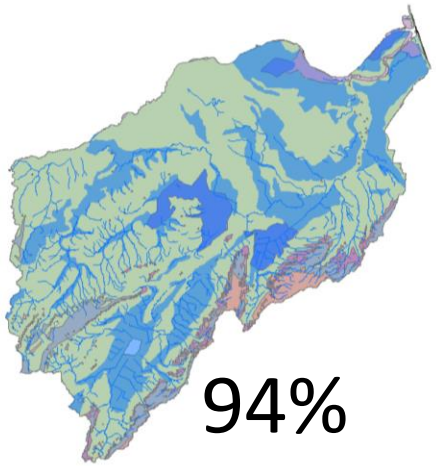
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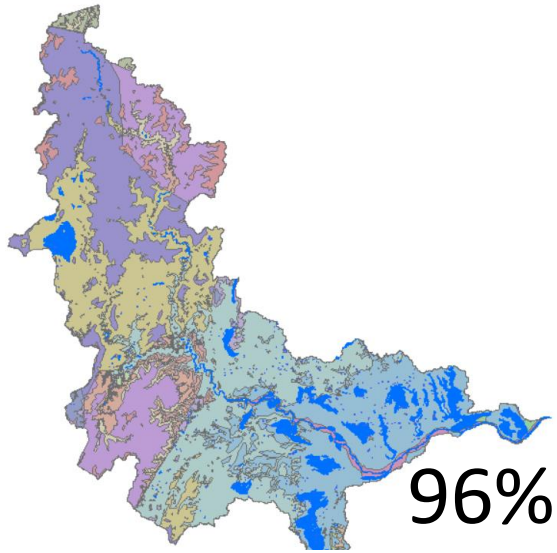
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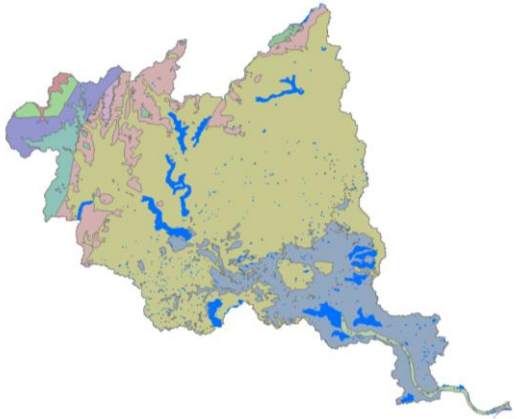
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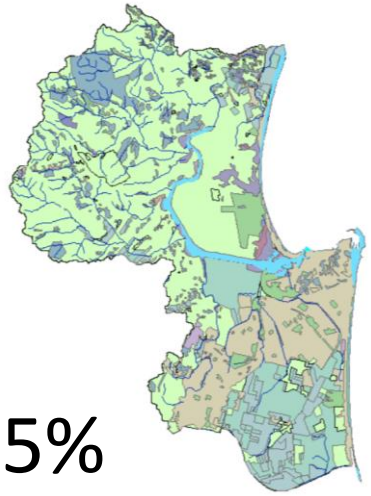
2012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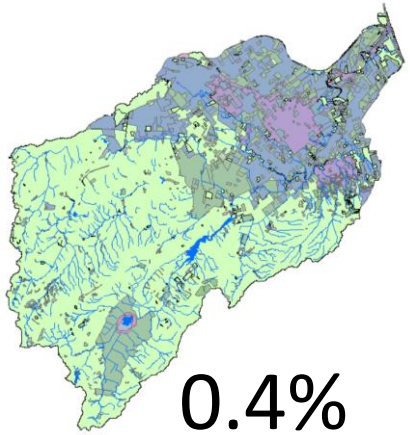
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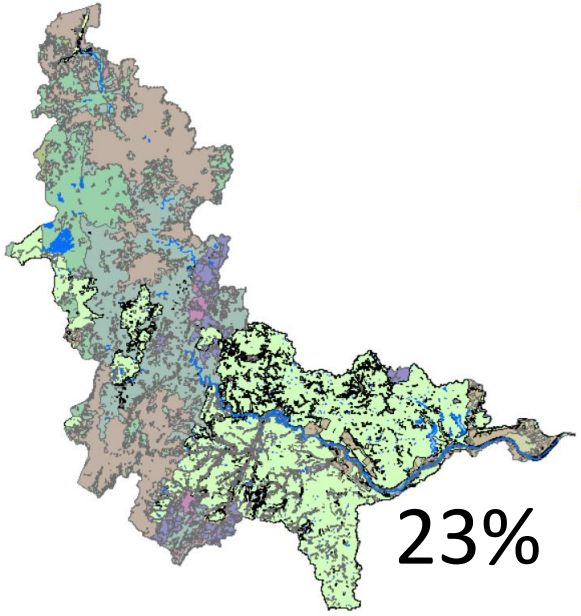
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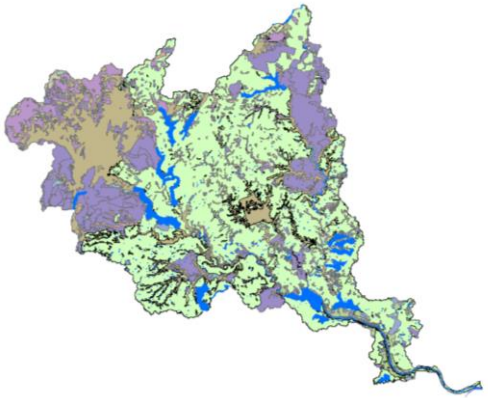
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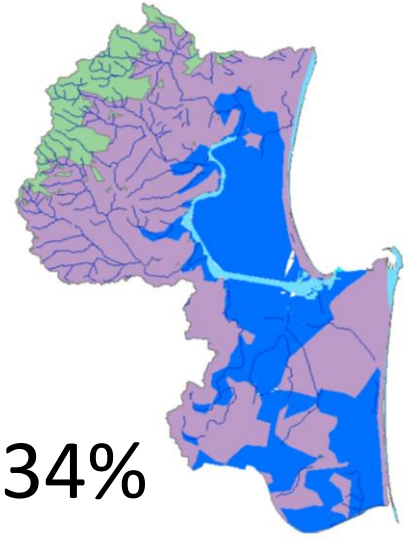
# TANK (wetlands)

pre-1840



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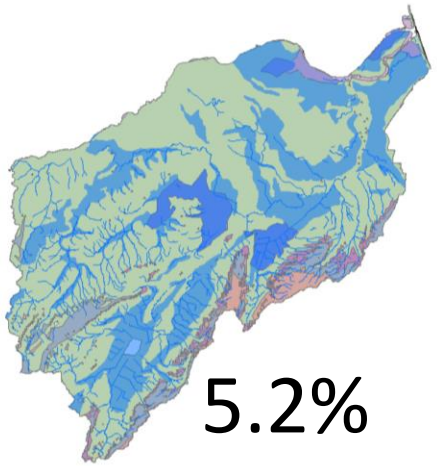

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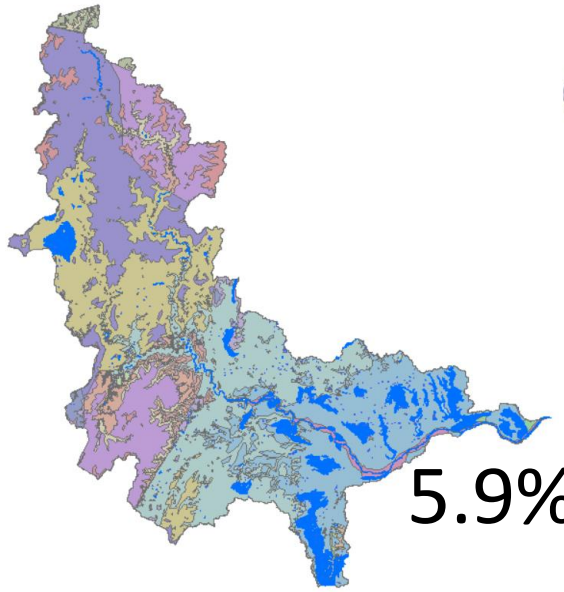

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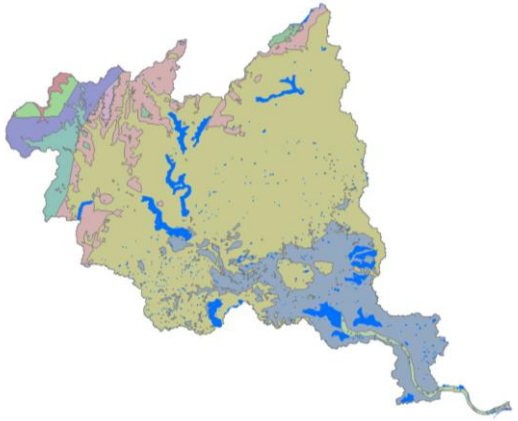
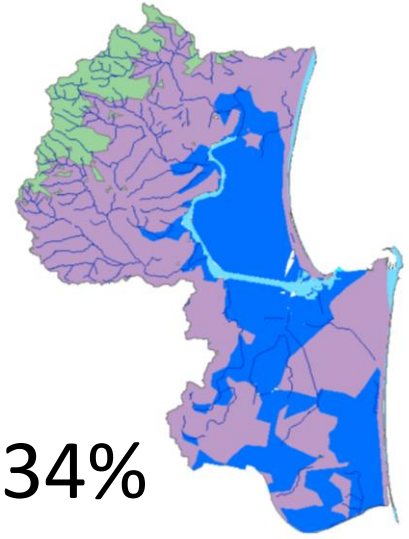


3.4%

# TANK (wetlands)

pre-1840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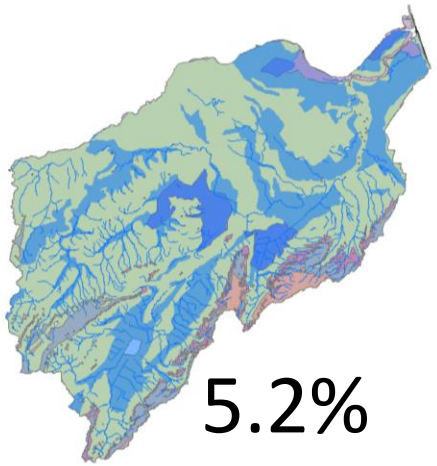
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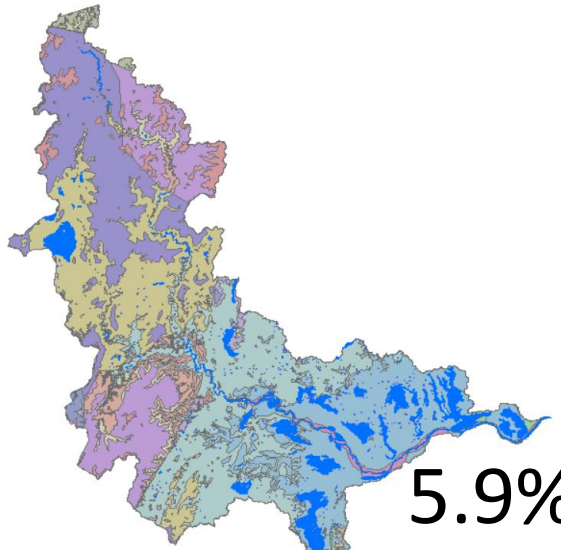
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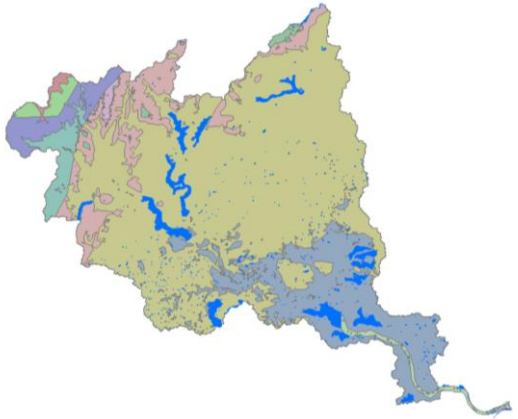
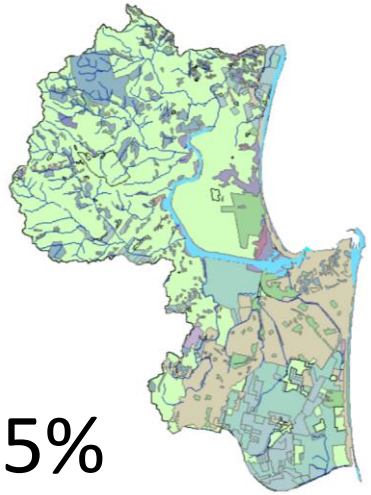

3.4%

2012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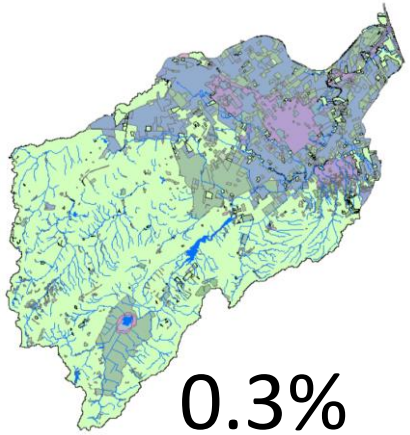
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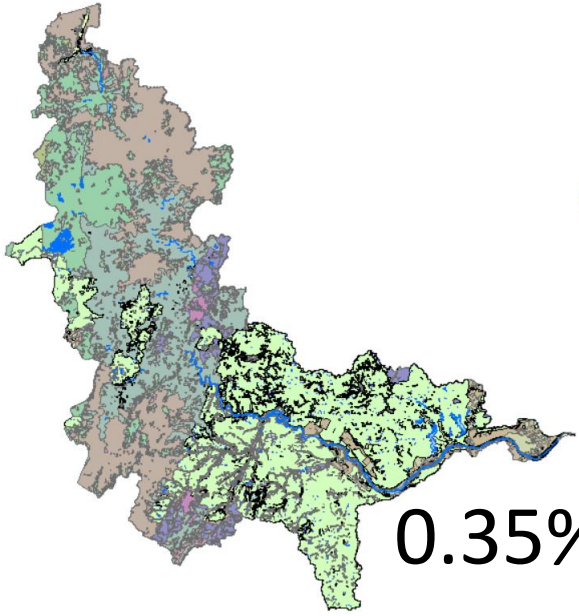
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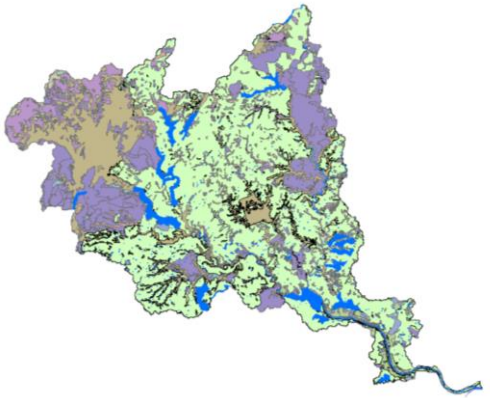
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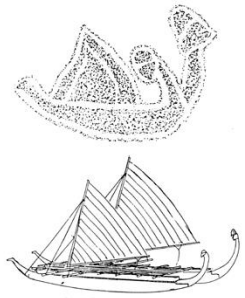
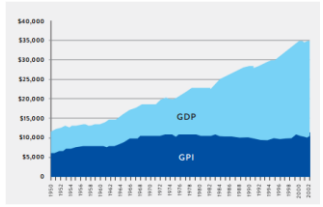
# Key issues

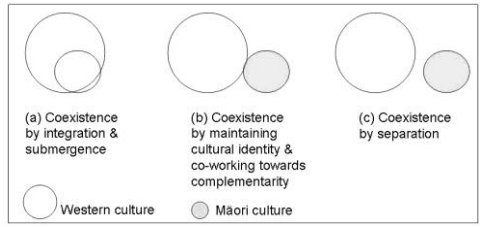
- Whānau Māori is more than a nuclear family
- The Māori economy = whānau Māori (ecosystem)
- 2 models of economy in New Zealand
- The mana/mauri of whānau Māori in Hawke's Bay is seriously diminished, in some cases to the brink of extinction
- This is a very sensitive matter for Mana Whenua

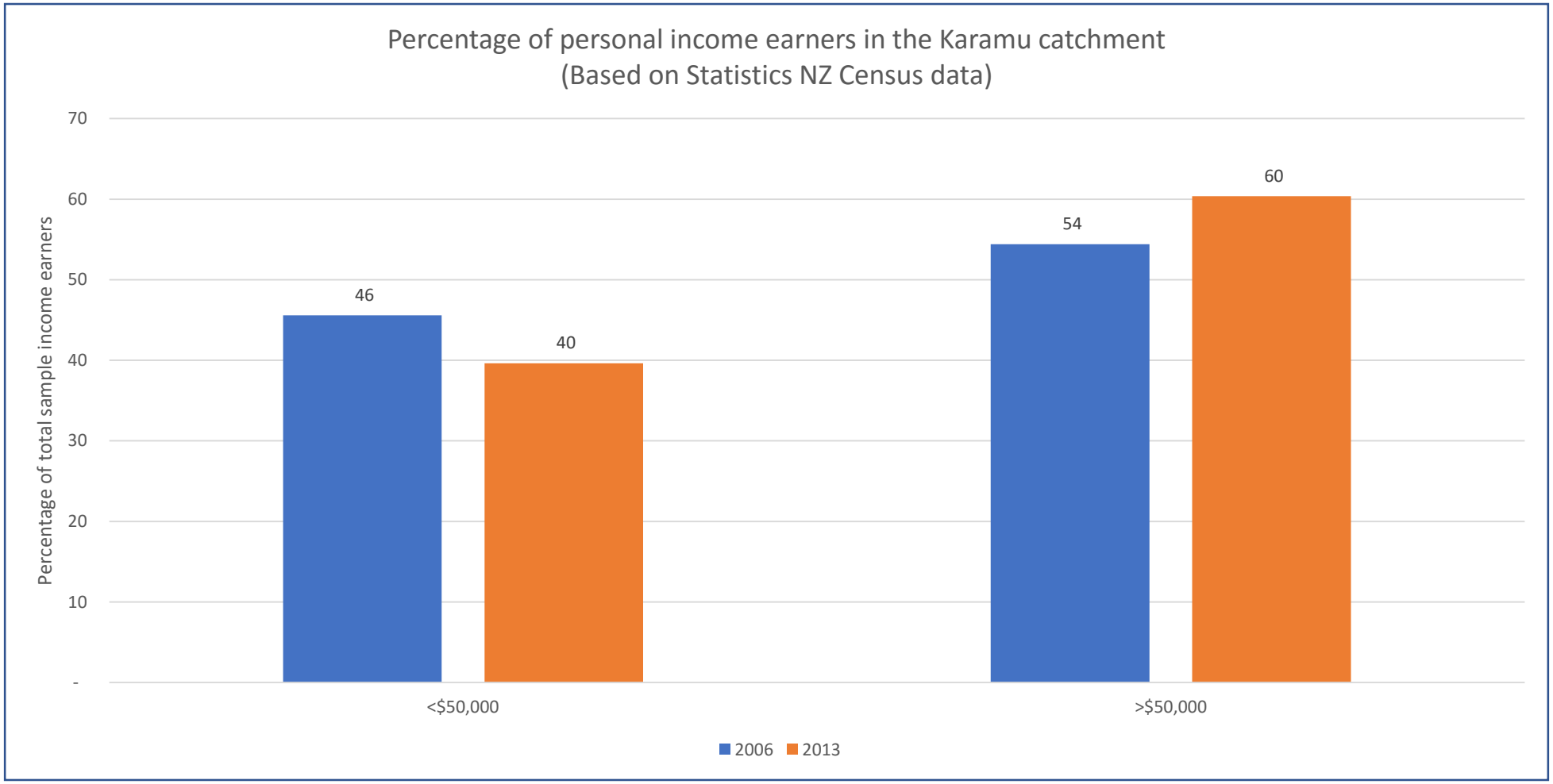
# Personal income

## Tank catchments (2006-2013)

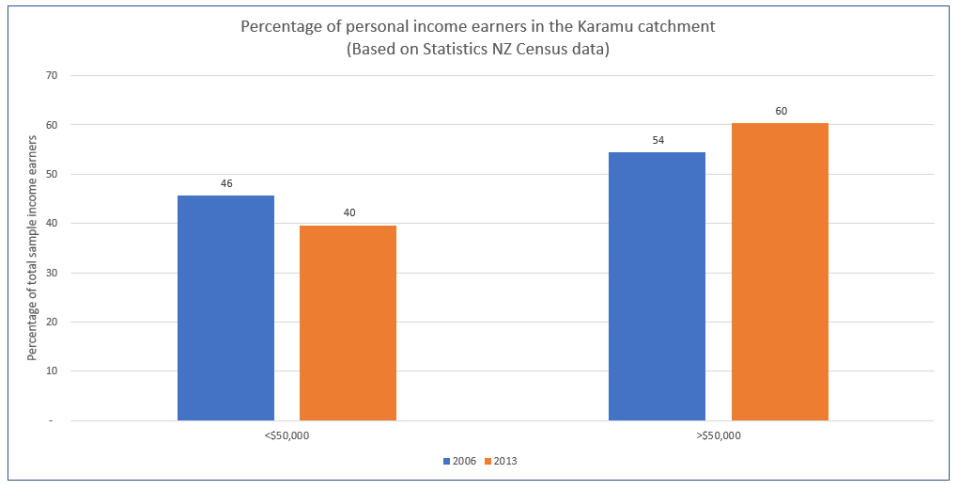




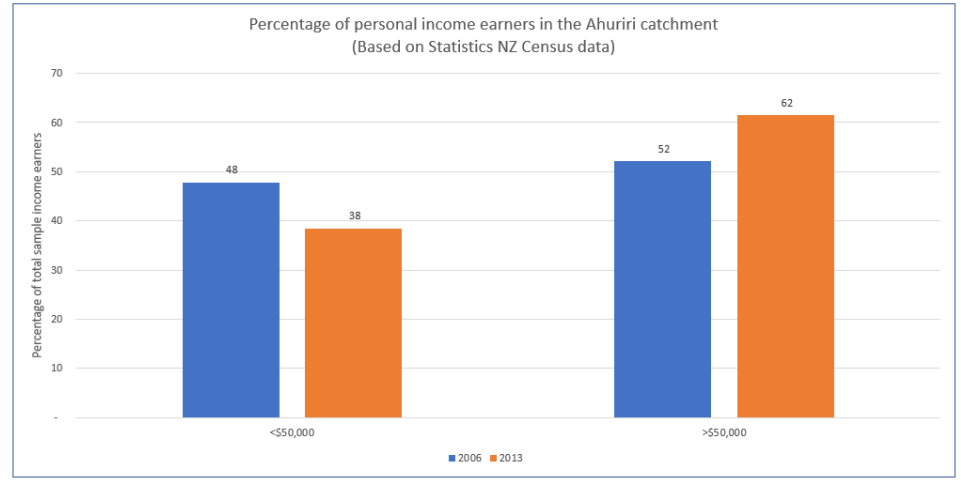




Percentage of personal income earners in the Karamu catchment
(Based on Statistics NZ Census data)
Percentage of total sample income earners
70
60
50
40
30
20
10
-
46
40
54
60
<$50,000
>$50,000
2006
2013

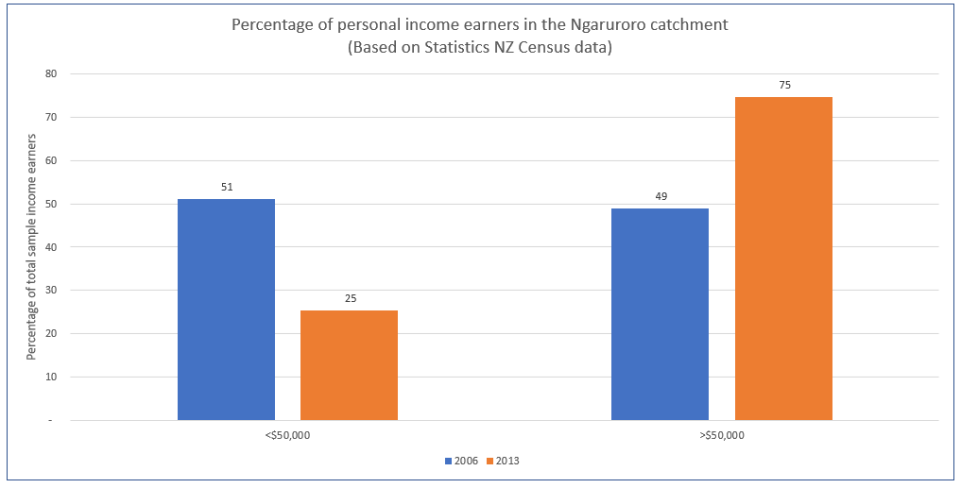
## Karamu sub-catchment



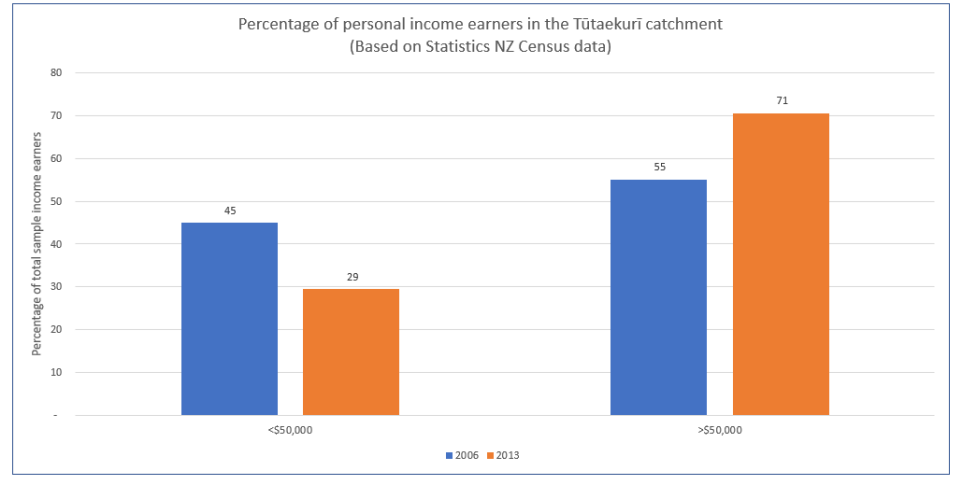

## Ahuriri sub-catchment




## Ngaruroro sub-catchment




## Tūtaekurī sub-catchment

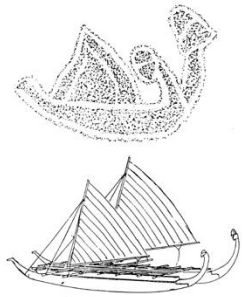


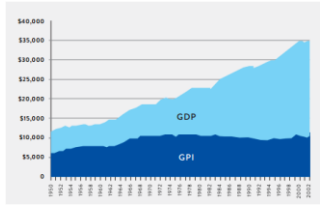
# Income characterisation

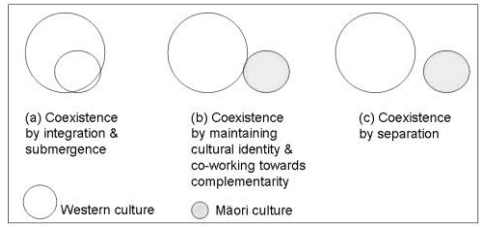
- An average of 30-40% of sub-catchment populations earn <$50,000/year
- Area unit population incomes can be higher/lower than this average
- At $50,000/year you need both parents working to survive (i.e. implications for family wellbeing)

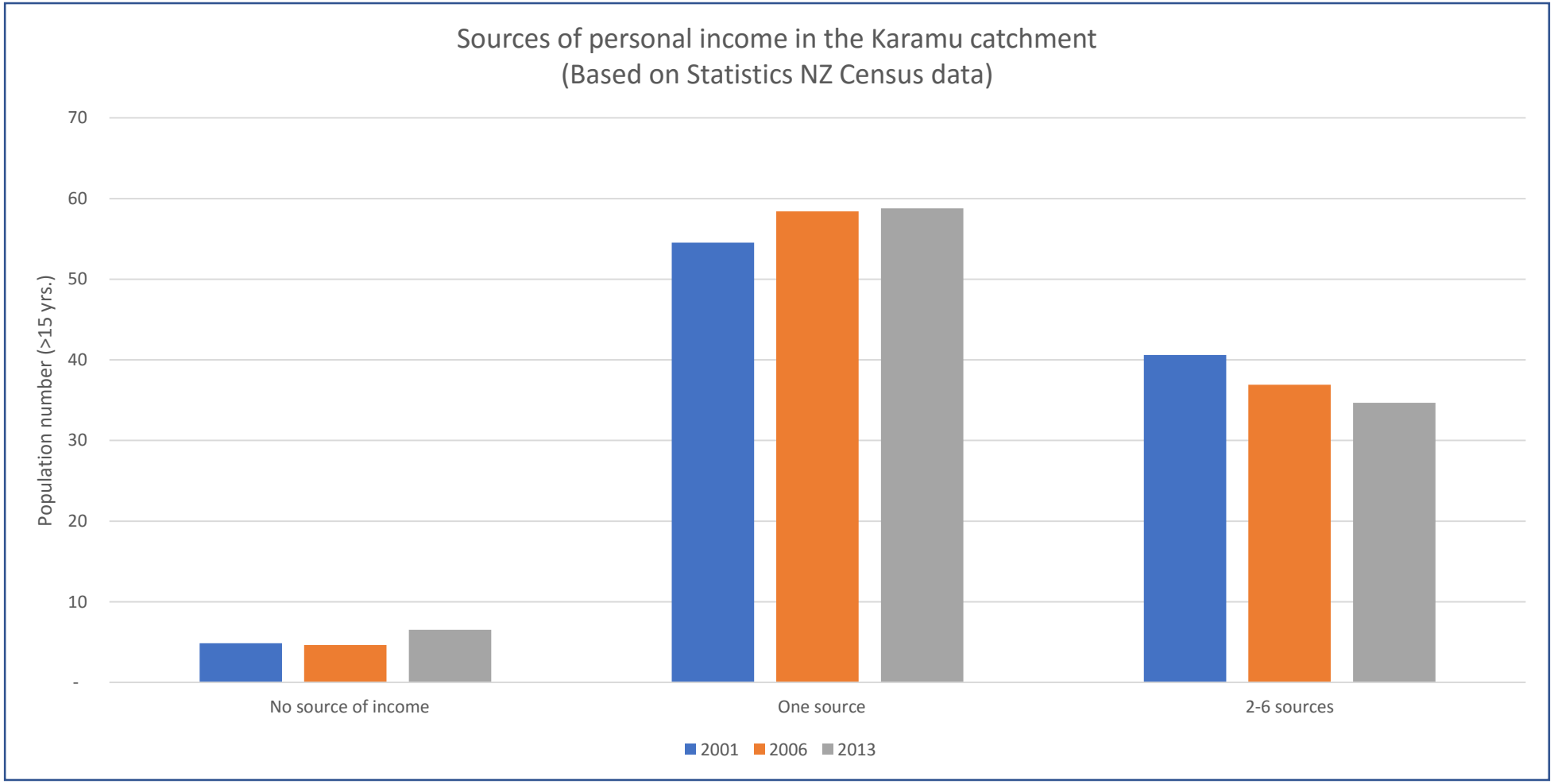
# Personal income sources

## Tank catchments (2006-2013)

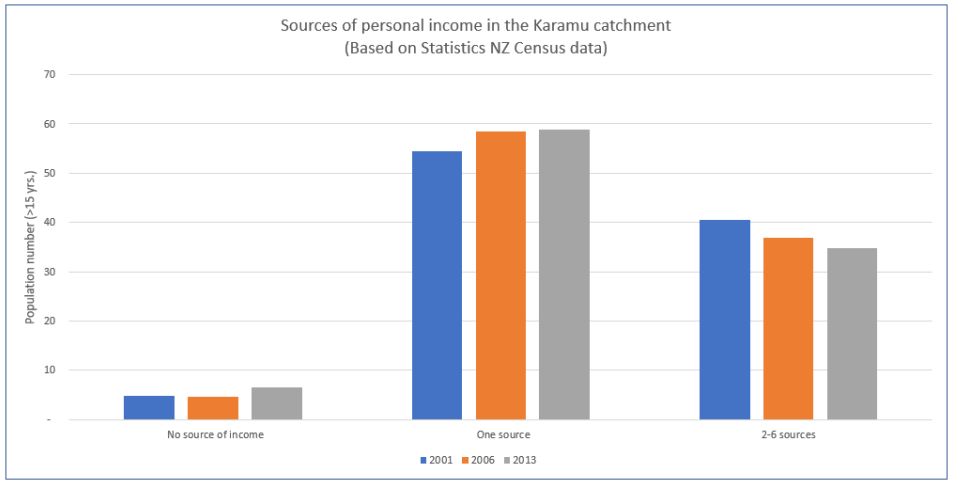




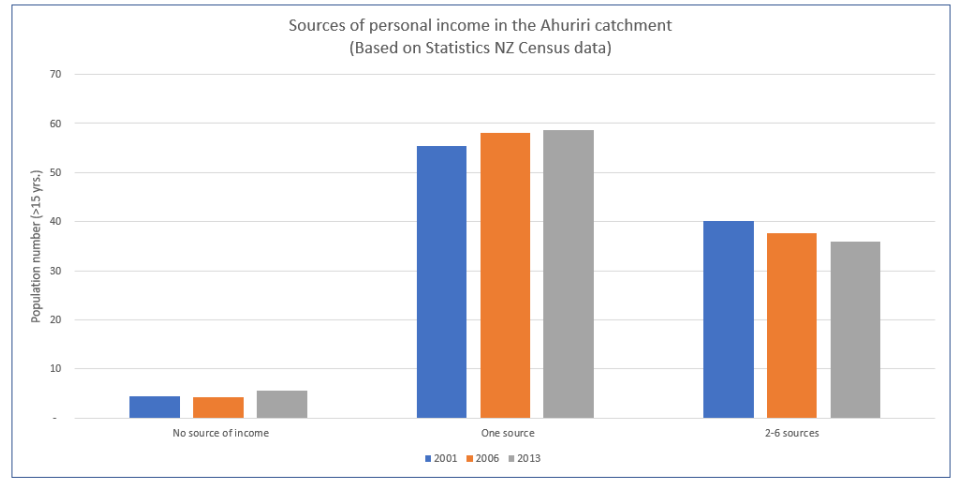




Sources of personal income in the Karamu catchment
(Based on Statistics NZ Census data)
Population number (>15 yrs.)
70
60
50
40
30
20
10
-
No source of income
One source
2-6 sources
2001
2006
2013

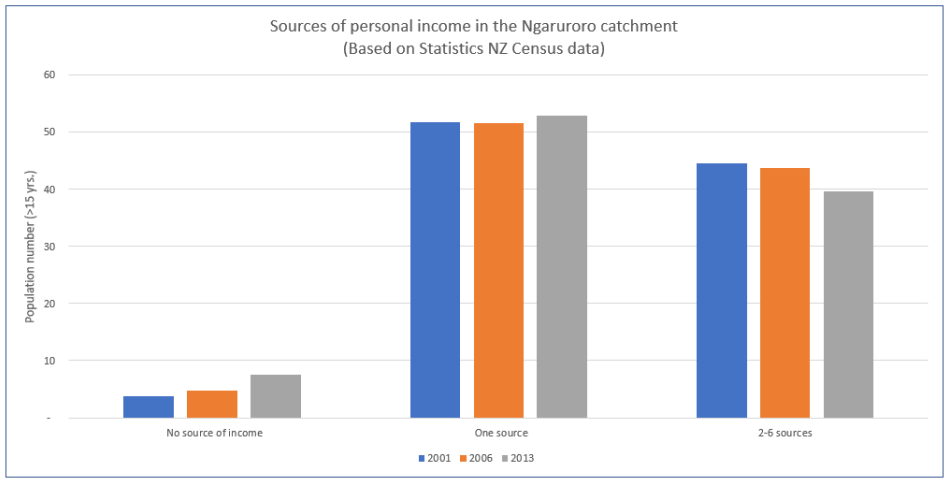
## Karamu sub-catchment



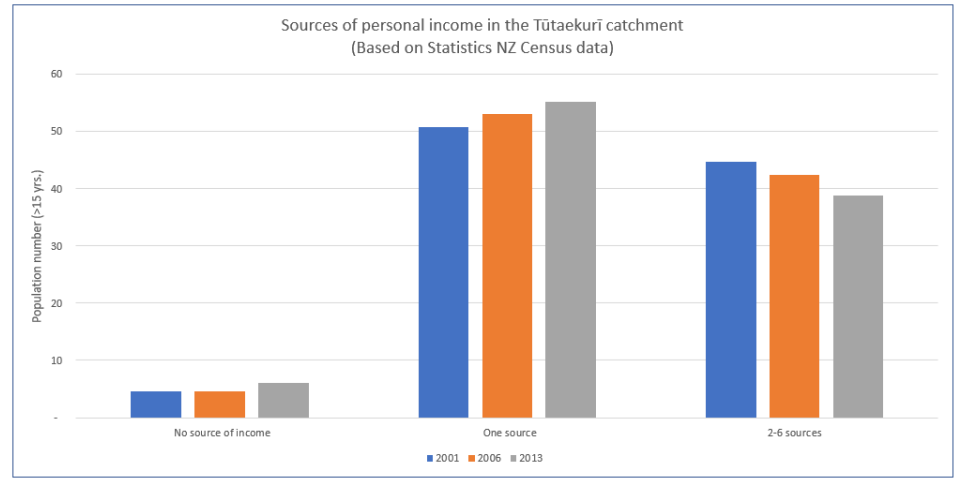

## Ahuriri sub-catchment




## Ngaruroro sub-catchment




## Tūtaekurī sub-catchment

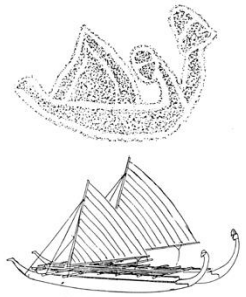


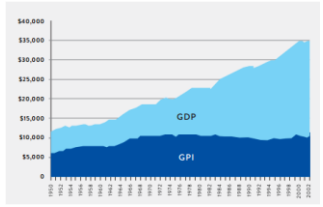
# Personal income sources

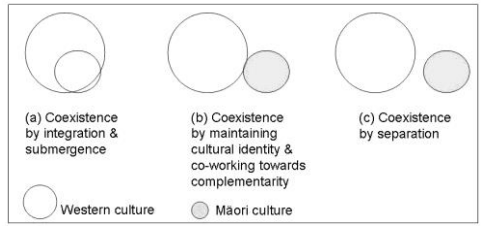
- An average of 40% of sub-catchment populations have multiple sources of personal income (<$50,000/yr. cohort?)
- Area unit populations can be higher/lower than this average

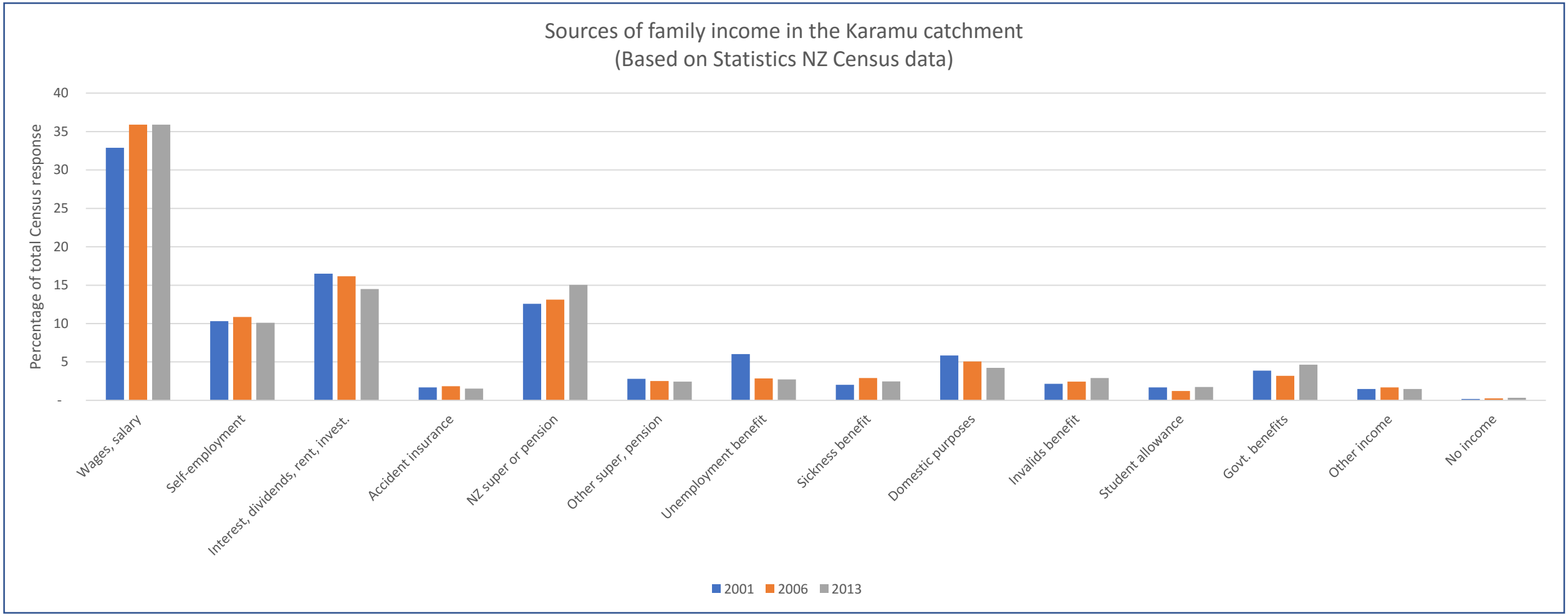
# Income earning and welfare dependency

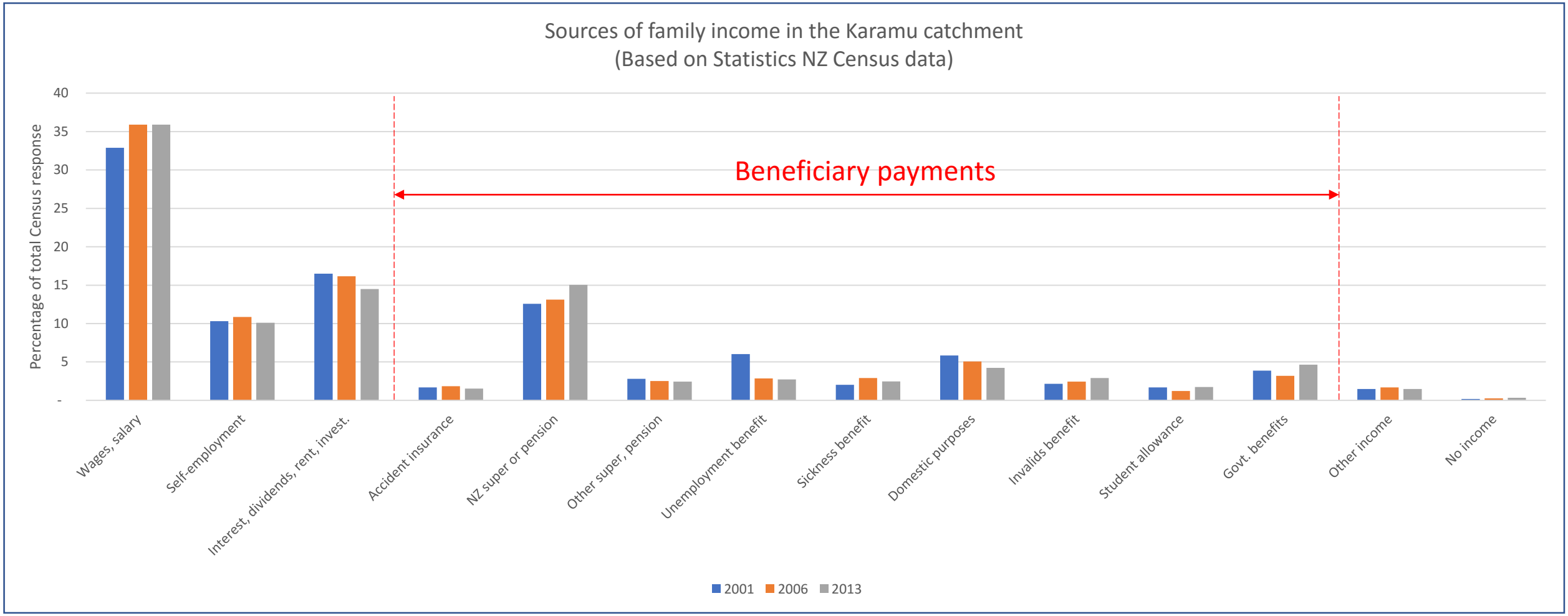
## Tank catchments (2006-2013)

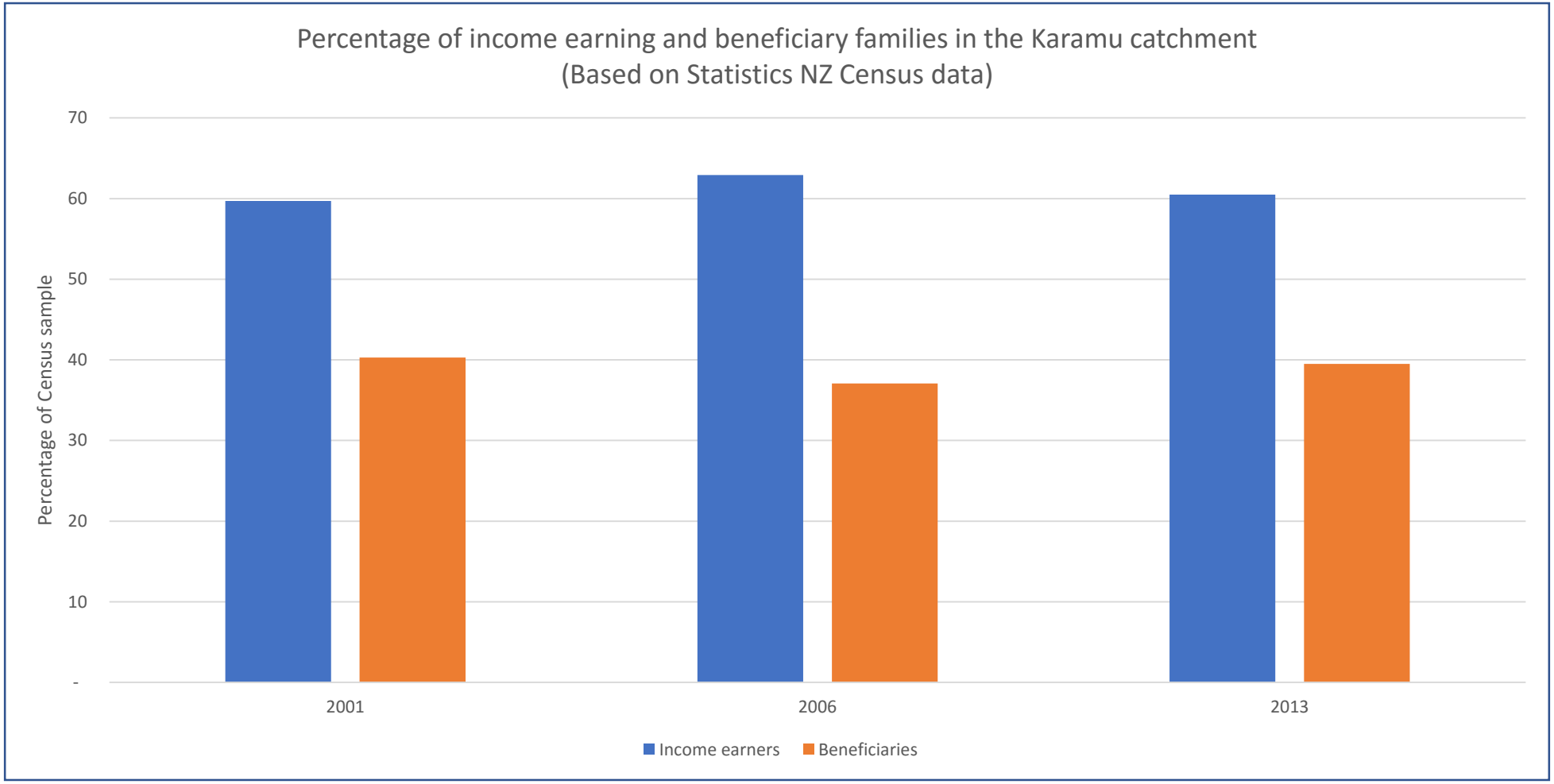




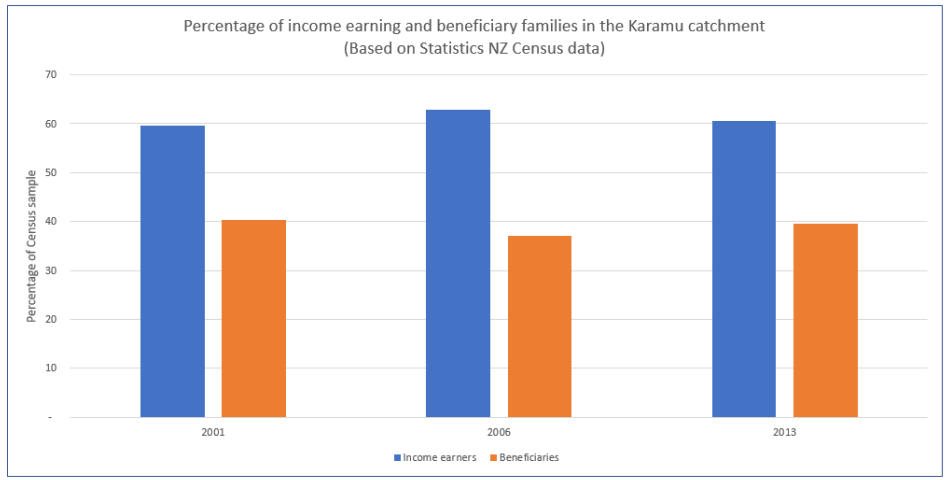




Sources of family income in the Karamu catchment
(Based on Statistics NZ Census data)
Percentage of total Census response
40
35
30
25
20
15
10
5
-
Wages, salary
Self-employment
Interest, dividends, rent, invest.
Accident insurance
NZ super or pension
Other super, pension
Unemployment benefit
Sickness benefit
Domestic purposes
Invalids benefit
Student allowance
Govt. benefits
Other income
No income
2001
2006
2013

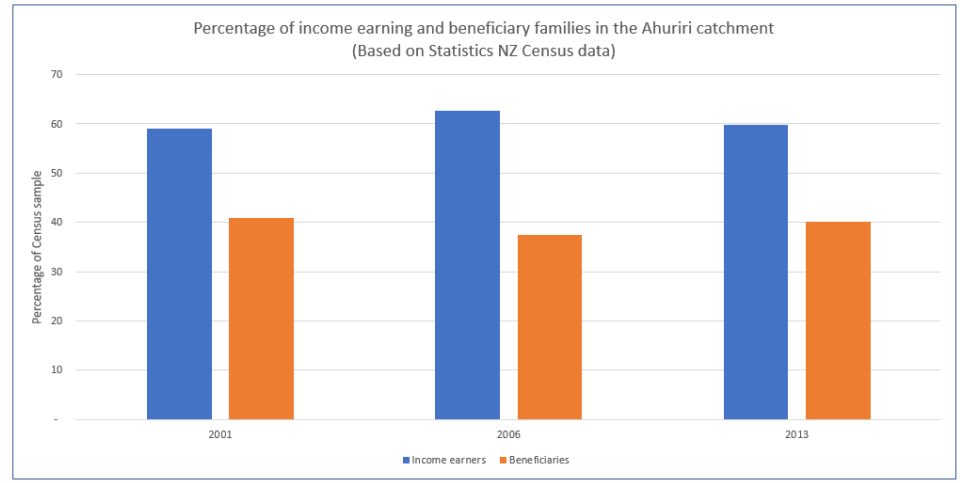

Sources of family income in the Karamu catchment
(Based on Statistics NZ Census data)
Percentage of total Census response
40
35
30
25
20
15
10
5
-
Beneficiary payments
Wages, salary
Self-employment
Interest, dividends, rent, invest.
Accident insurance
NZ super or pension
Other super, pension
Unemployment benefit
Sickness benefit
Domestic purposes
Invalids benefit
Student allowance
Govt. benefits
Other income
No income
2001
2006
2013


Percentage of income earning and beneficiary families in the Karamu catchment
(Based on Statistics NZ Census data)
Percentage of Census sample
70
60
50
40
30
20
10
-
2001
2006
2013
Income earners
Beneficiaries

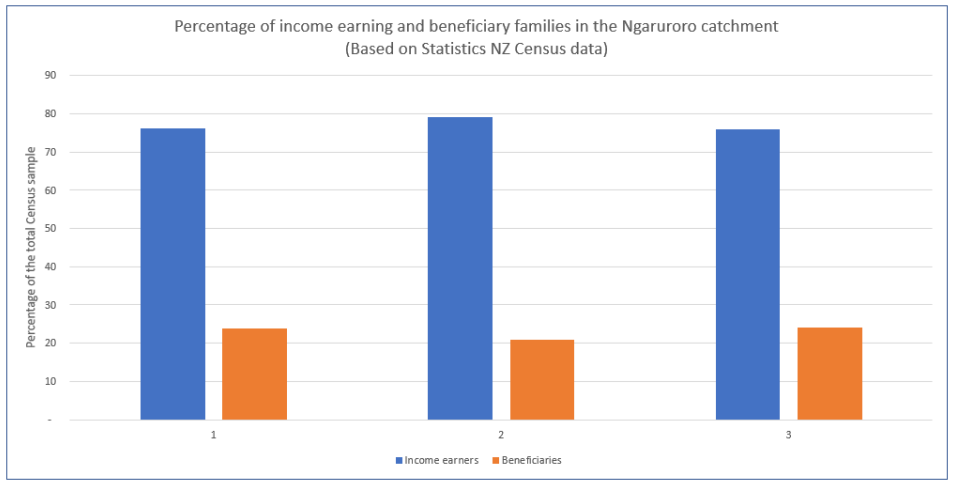
## Karamu sub-catchment



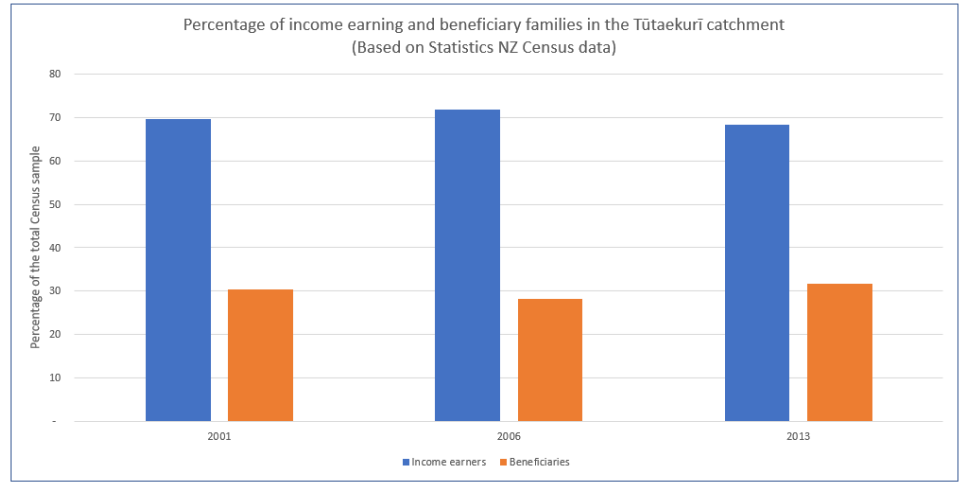

## Ahuriri sub-catchment




## Ngaruroro sub-catchment




## Tūtaekurī sub-catchment

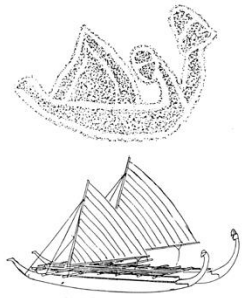


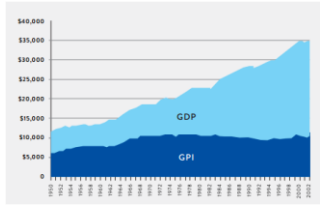
# Family income type

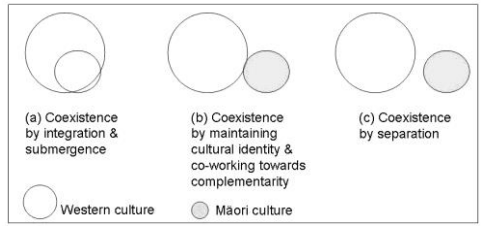
- Approximately 40% of urban families are welfare dependent
- Approximately 25–30% of rural families are welfare dependent
- This is partly an ageing population
- Its difficult to grow regional GDP with a welfare dependency component of this scale

# Income inequality

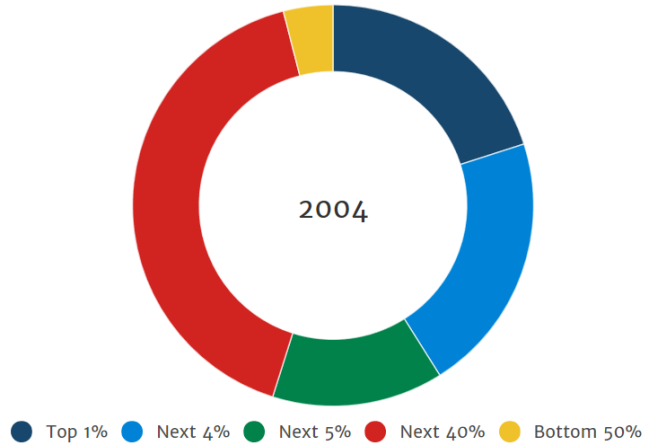
## Tank catchments (2006-2013)



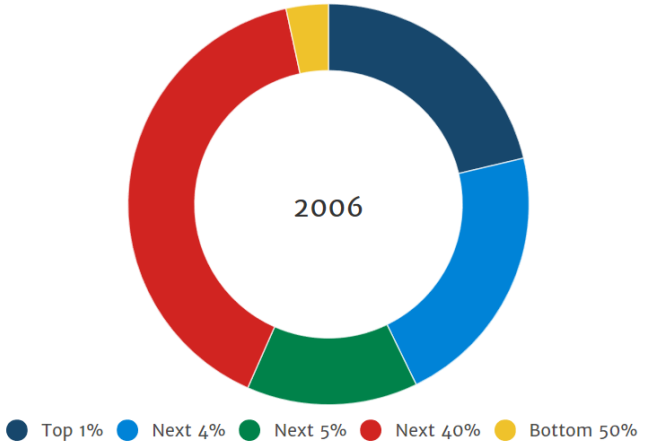


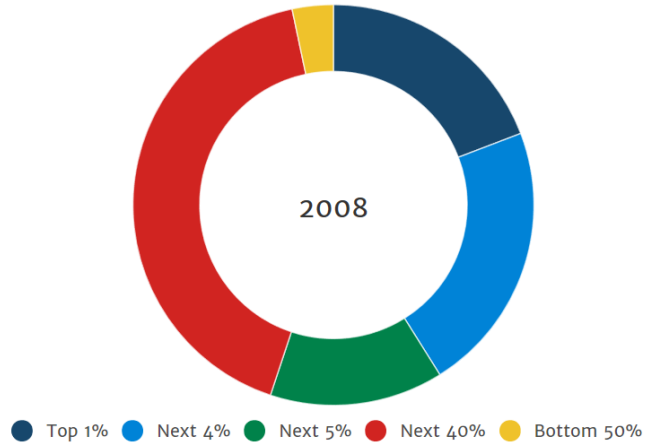
# Proportional breakdown of total net wealth



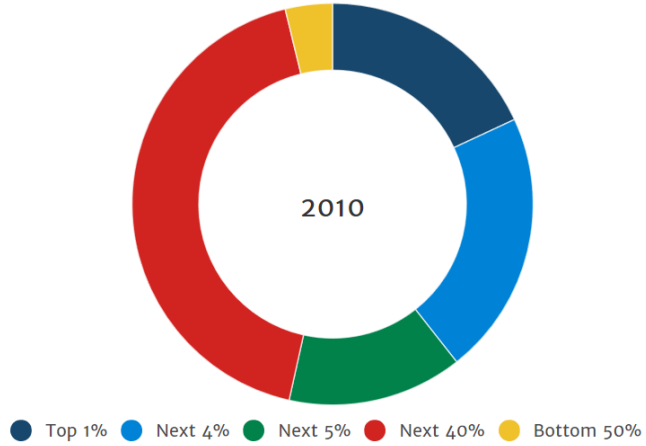

Source: Statistics New Zealand




Source: Statistics New Zealand

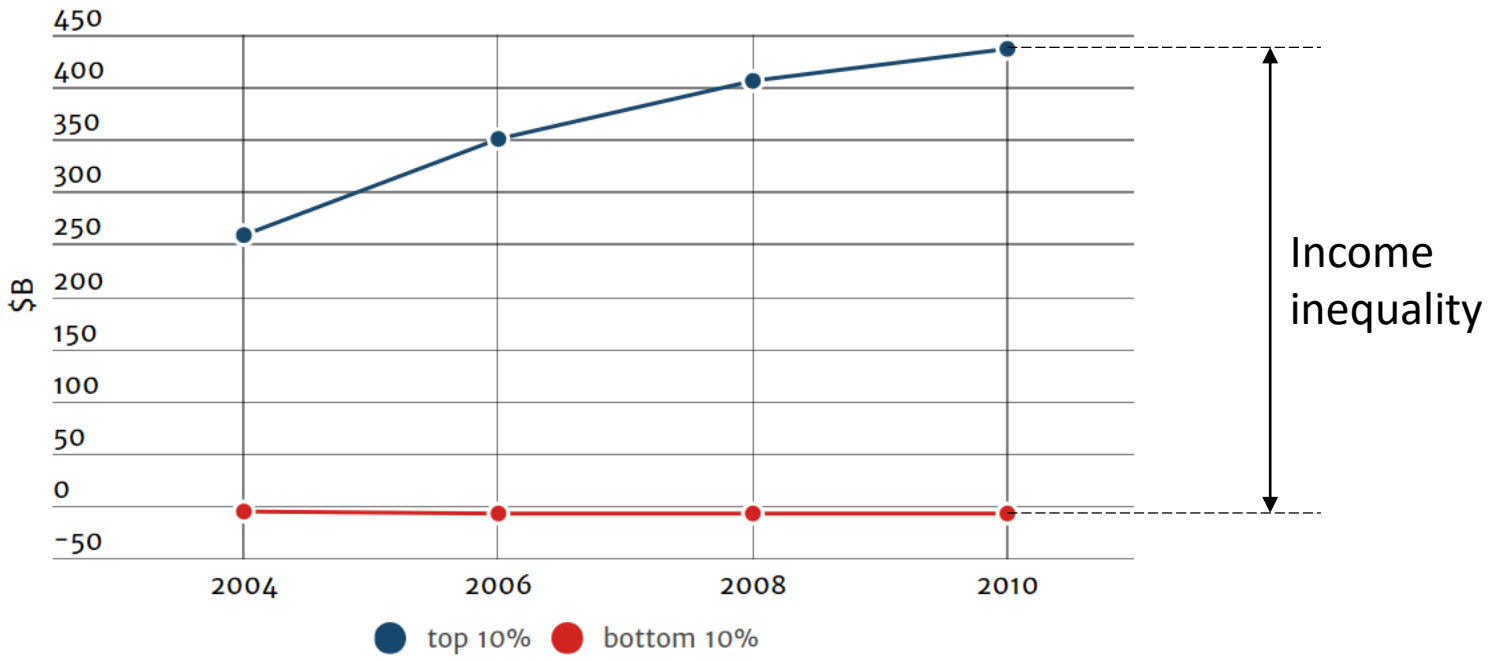



Source: Statistics New Zealand

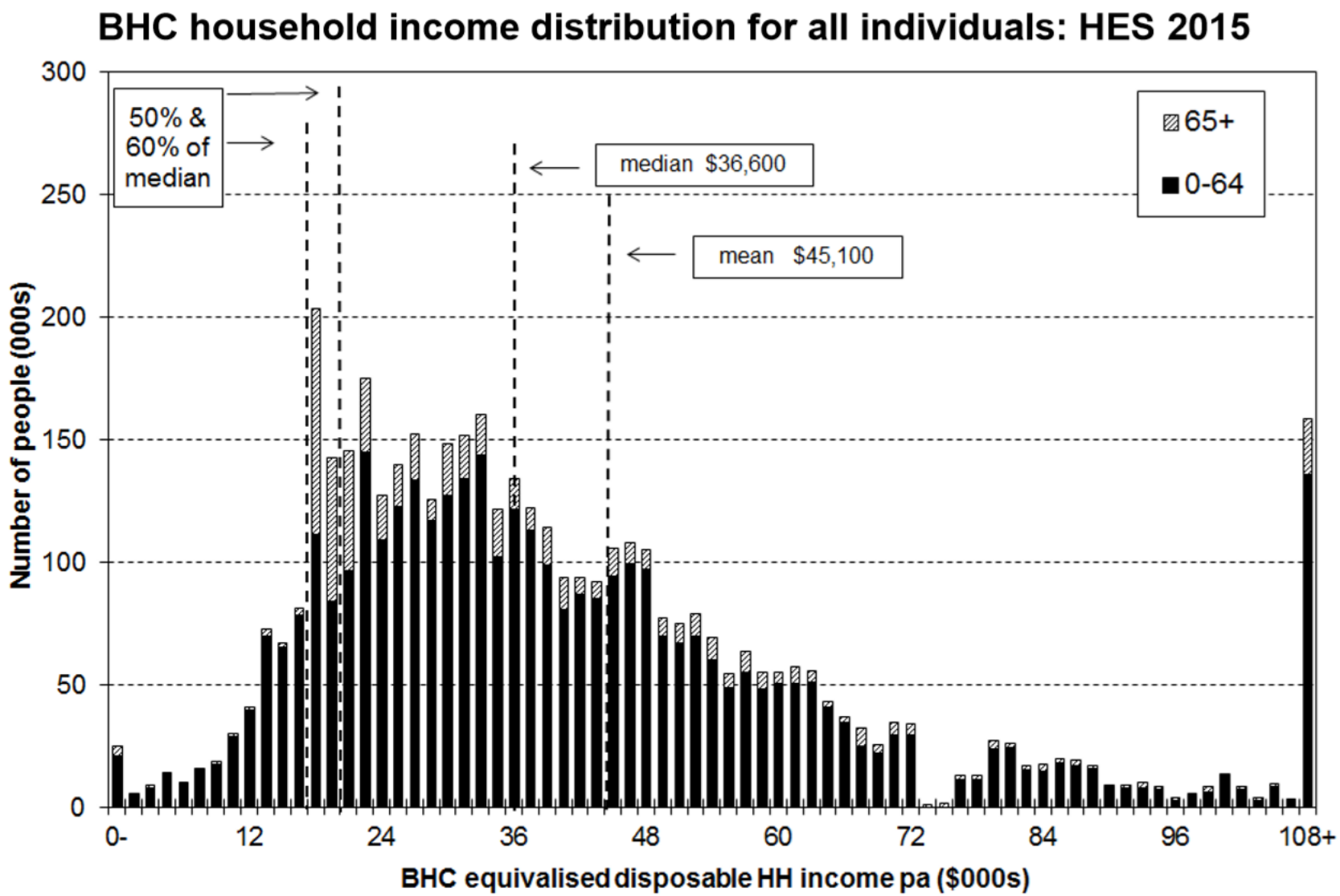



Source: Statistics New Zealand

## Total net worth of top 10 per cent vs bottom 10 per cent

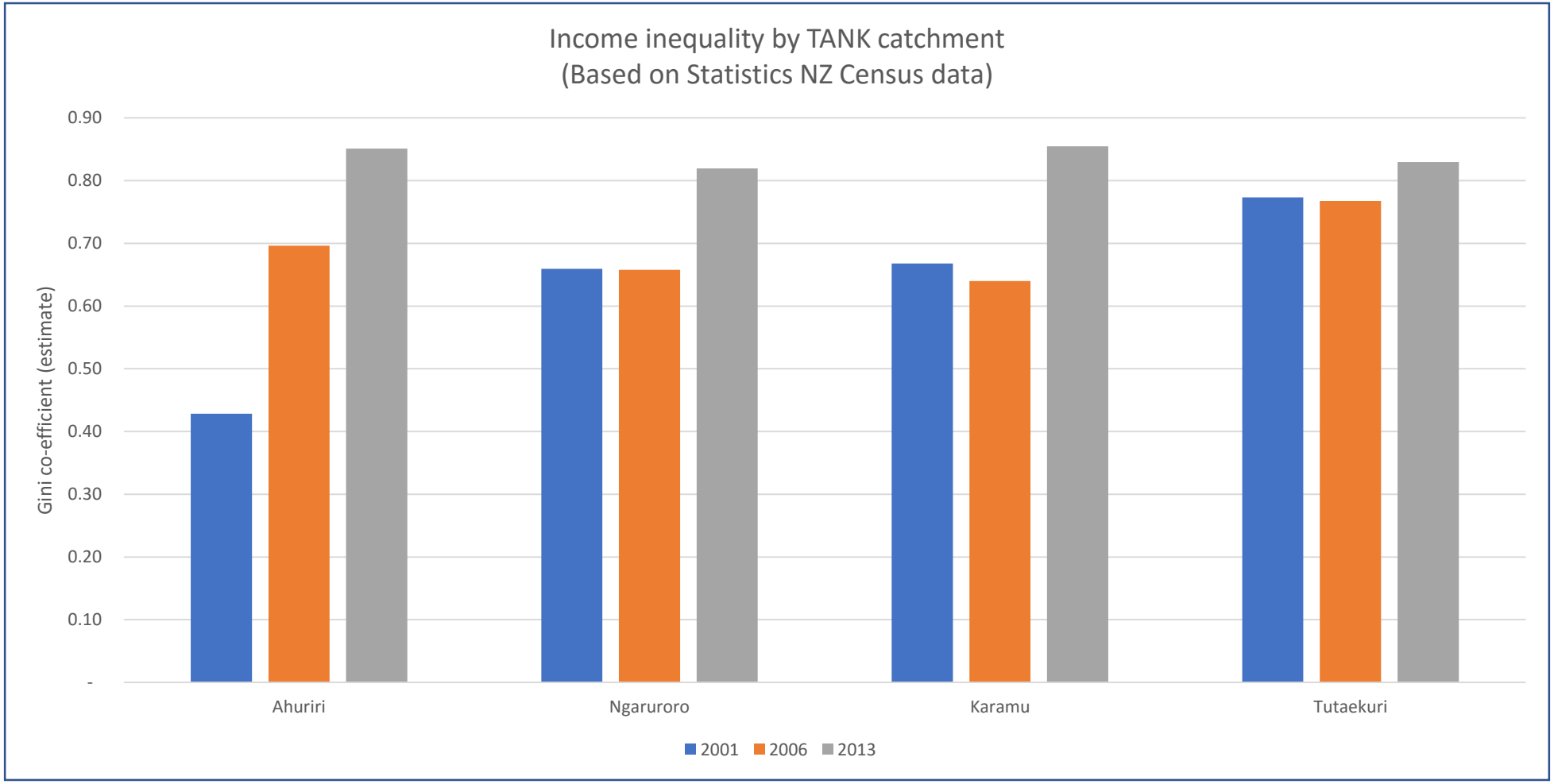



Source: Statistics New Zealand


BHC household income distribution for all individuals: HES 2015
50% & 60% of median
median $36,600
mean $45,100
65+
0-64
Number of people (000s)
300
250
200
150
100
50
0
0-
12
24
36
48
60
72
84
96
108+
BHC equivalised disposable HH income pa ($000s)

# What is a Gini co-efficient?

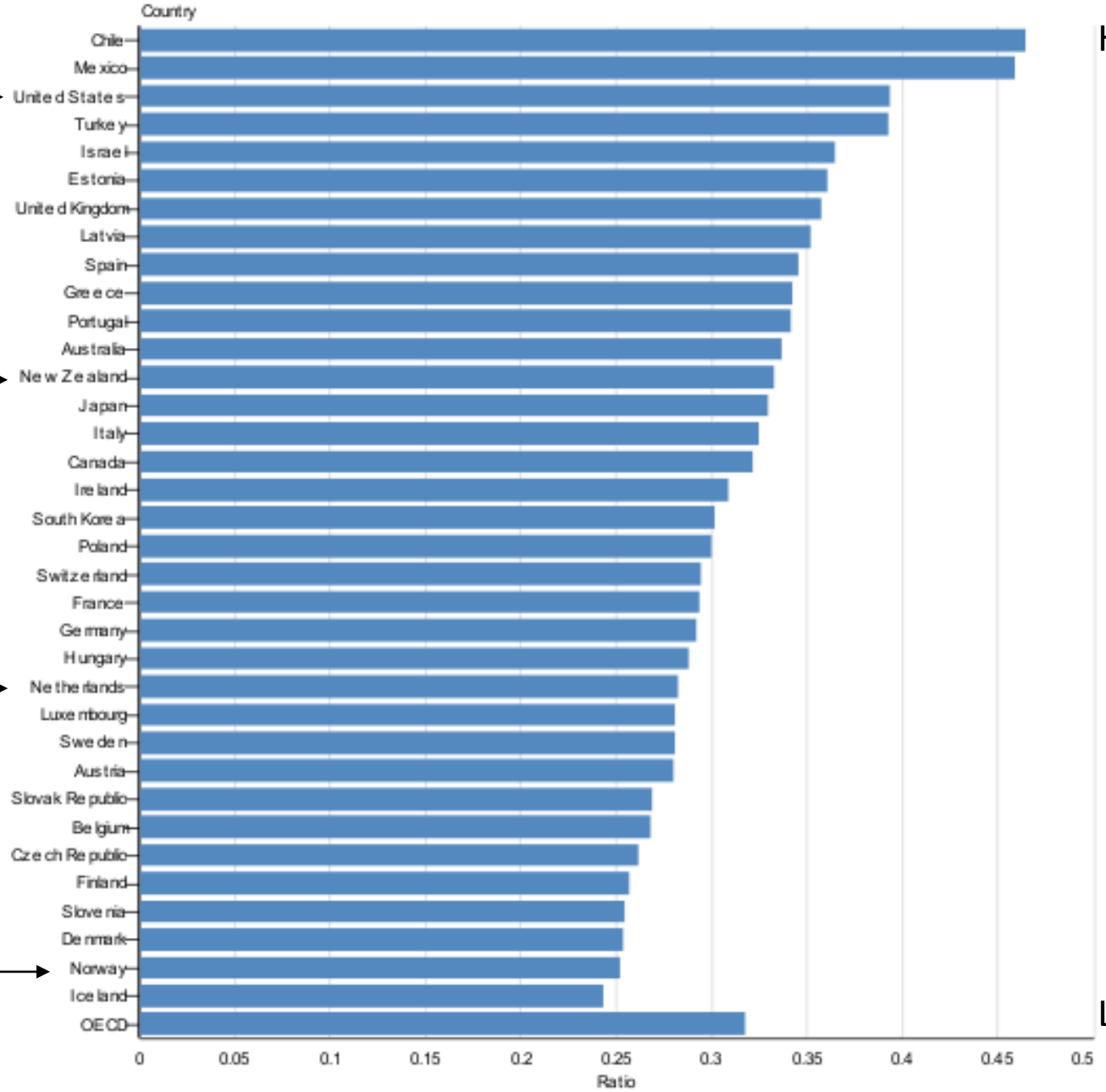

Income inequality in New Zealand
(Based on NZIER long-term data series)
Gini co-efficient
0.6
0.5
0.4
0.3
0.2
0.1
0
1935
1937
1939
1941
1947
1949
1951
1953
1955
1957
1959
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
NZIER (Gini co-efficient)


Income inequality by TANK catchment
(Based on Statistics NZ Census data)
Gini co-efficient (estimate)
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
-
Ahuriri
Ngaruroro
Karamu
Tutaekuri
2001
2006
2013

# Key message

- Growing inequality in sub-catchment populations
- Gini co-efficient is well above the national average
- The national average is already a concern internationally

# Income inequality for OECD countries (2014)




USA →

New Zealand →

Netherlands →

Norway →

High income inequality

Low income inequality

The top 1%


In a capitalist market economy some income inequality is necessary because it provides the conditions needed for innovation, creativity and human excellence

The top 1%


# Social fairness problems

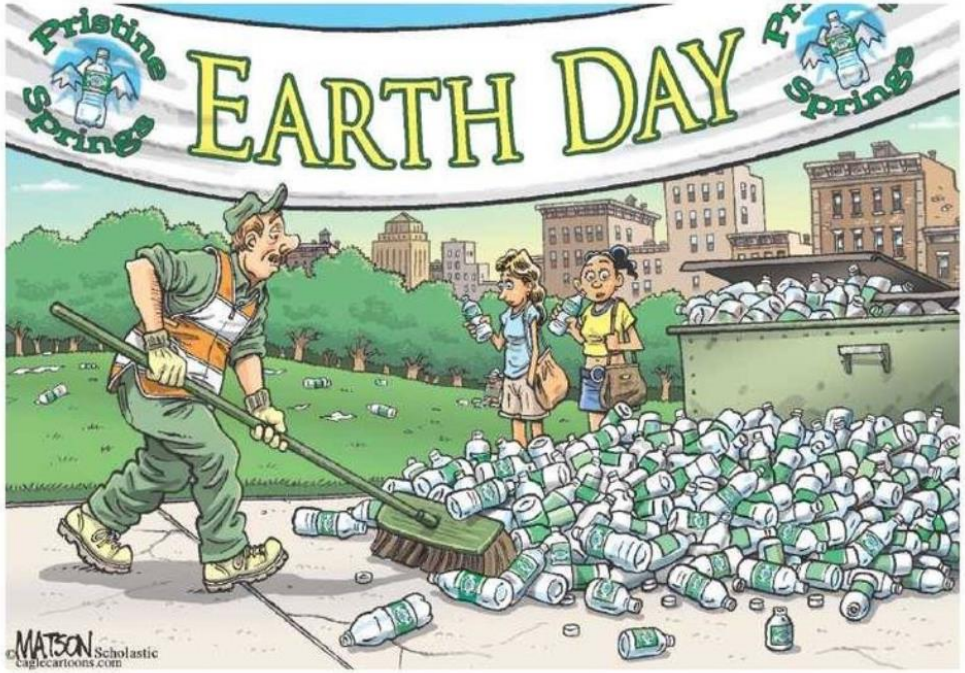

Income inequality becomes a problem when income is not trickling down …

The bottom 50%

The top 1%


Sustainability problems

… and when wealth accumulation harms the environment,



The top 1%


… and leads to unchecked cultural wellbeing decline and extinction


# Cultural extinction rates

- 6,900 languages … 6,900 distinct cultural entities
- Language extinction rate (on average) 1 every 3 months
- Over the next 100 years - *projected loss of 50–90% of the worlds linguistic/cultural diversity*
- Why?

# For a culture to survive …

1. Freedom to give expression to its language, values, behaviours and institutions (i.e. whānau Māori) *on a daily basis*
2. Adapt to change *with creativity/innovation*
3. Respond to disturbance events
   - *Reclaims*
   - *Reframes*
   - *Reinstates*

   } essential identity

# TANK sub-catchments - key Issues

Ageing, mobile population

Loss of whānau Kahungunu to other regions & overseas

30-40 % population earning <$50,000

40 % population has multiple income sources

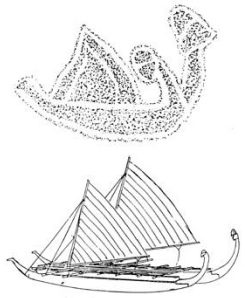
40 % population is welfare dependent

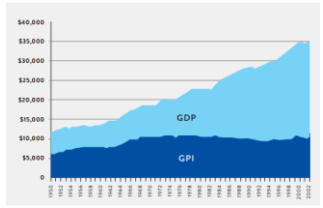
Increasing income inequality (above the national average)

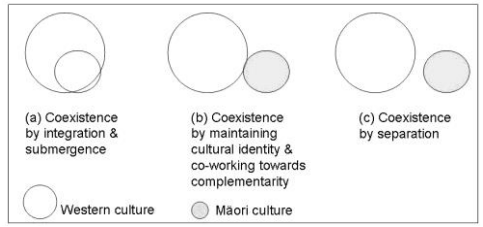
Whānau Māori wellbeing at threshold levels (near extinction)

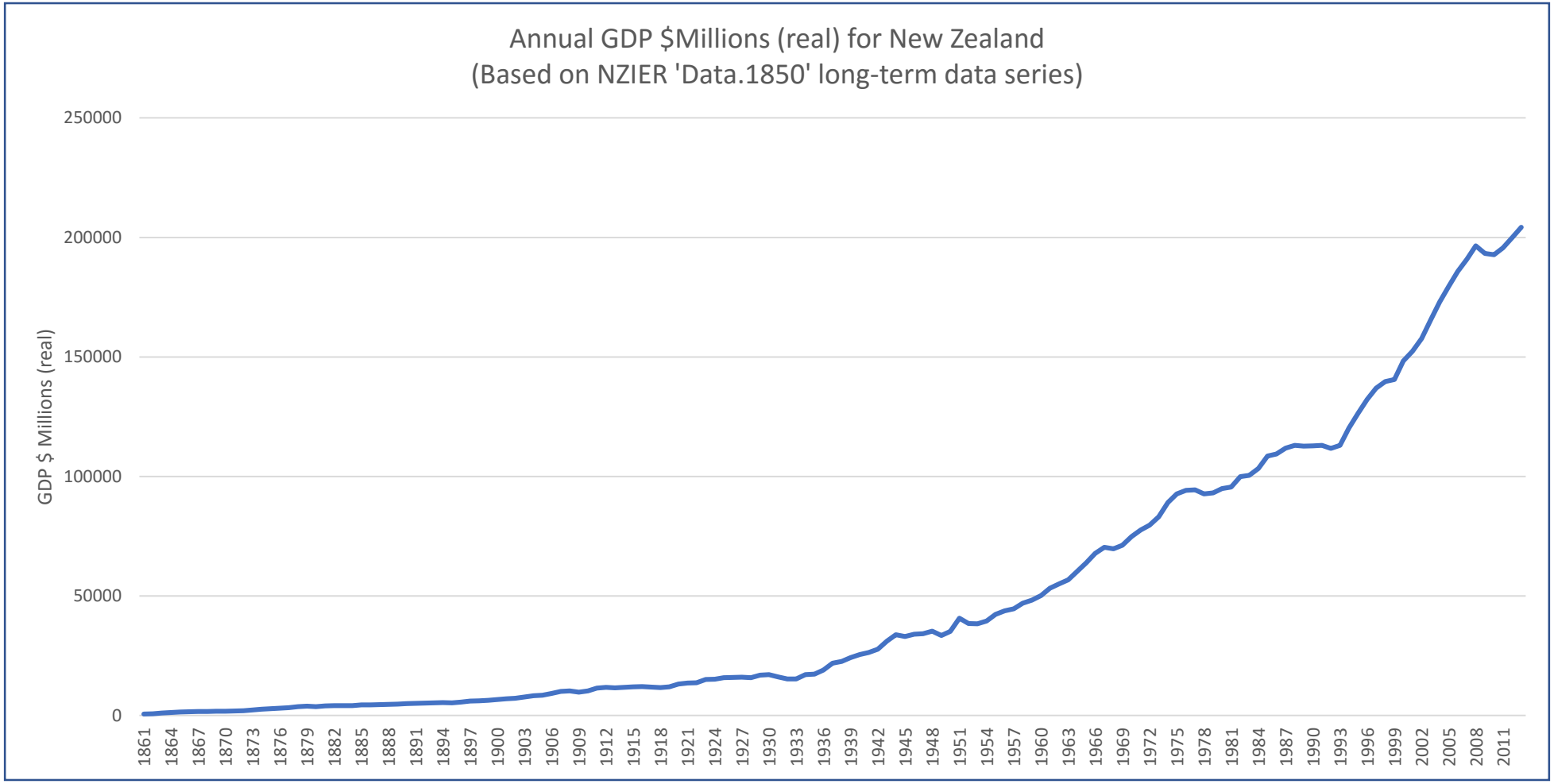
# Why?

## #1 - There is a problem with GDP accounting






Annual GDP $Millions (real) for New Zealand
(Based on NZIER 'Data.1850' long-term data series)
GDP $ Millions (real)
250000
200000
150000
100000
50000
0
1861
1864
1867
1870
1873
1876
1879
1882
1885
1888
1891
1894
1897
1900
1903
1906
1909
1912
1915
1918
1921
1924
1927
1930
1933
1936
1939
1942
1945
1948
1951
1954
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011

# Measurement of Gross Domestic Product

- Involves a national accounting *blind spot*
- GDP counts all final goods and services
- This means that …

# …

- Natural disasters
- Disease
- Unemployment
- Ecological species extinction
- Vehicle accidents
- Crime
- Family breakdowns
- Suicide
- Ecosystem decline

# … are good for GDP

- Gambling
- Drug and alcohol addiction
- Illness
- Pollution
- Water scarcity
- Over-harvesting
- GHG emissions
- Deforestation
- Cultural extinction …

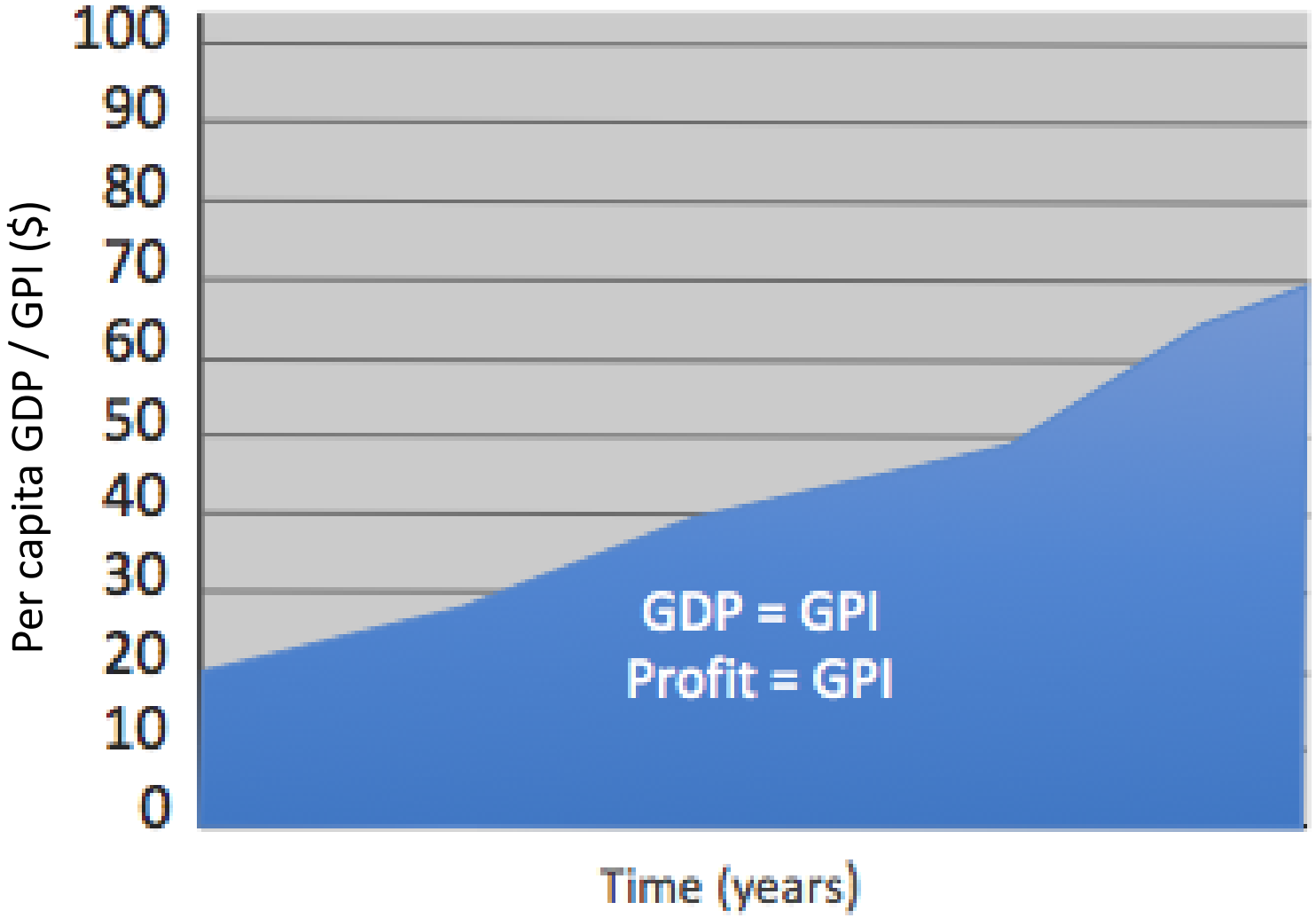
# Genuine progress indicator (GPI) accounting

- Requires a shift in thinking
- Old GDP thinking was based on the question …
  - How fast and big can we grow GDP?

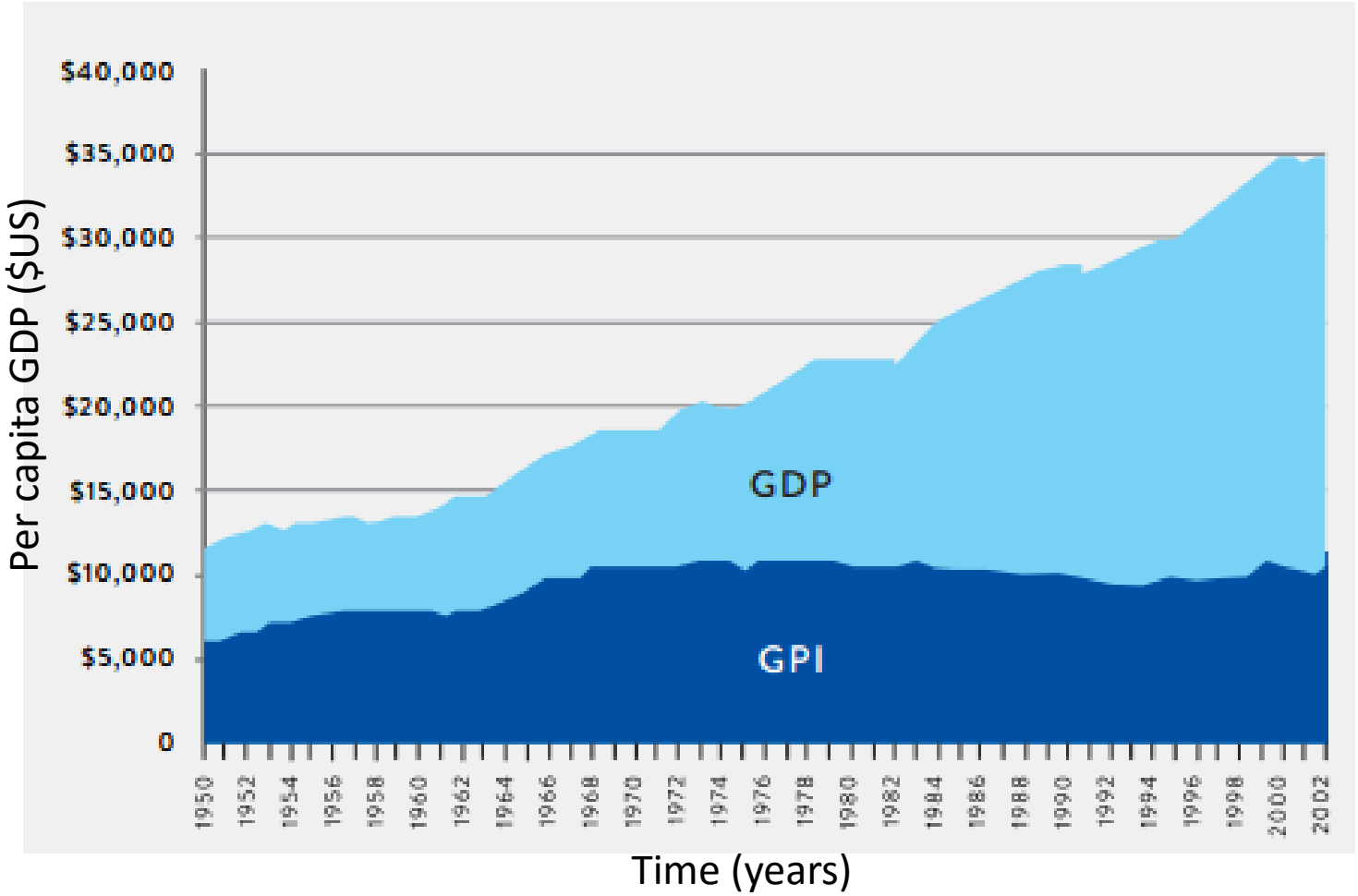
# Genuine progress indicator (GPI) accounting

- Requires a shift in thinking
- Old GDP thinking was based on the question …
  - How fast and big can we grow GDP?
- In GPI thinking ...
  - Growth is not irrelevant, but … the key question is …
  - ‘What is the best way to grow?’ or …
  - ‘Are there methods of growth that avoid unwanted ecological, social, financial and cultural effects?’

# What does genuine progress look like?



# GDP/GPI per captia (1950–2002) for the USA



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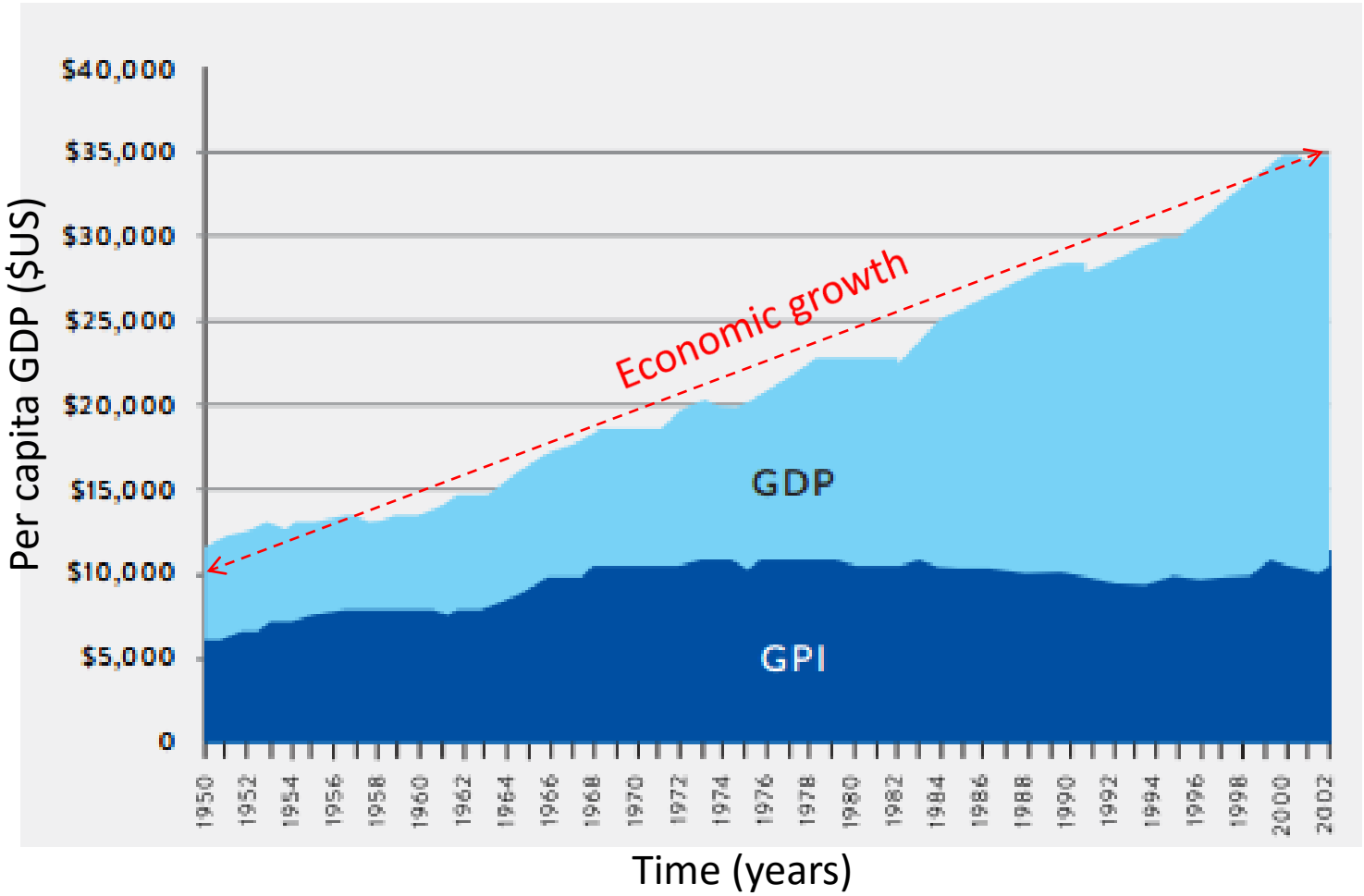

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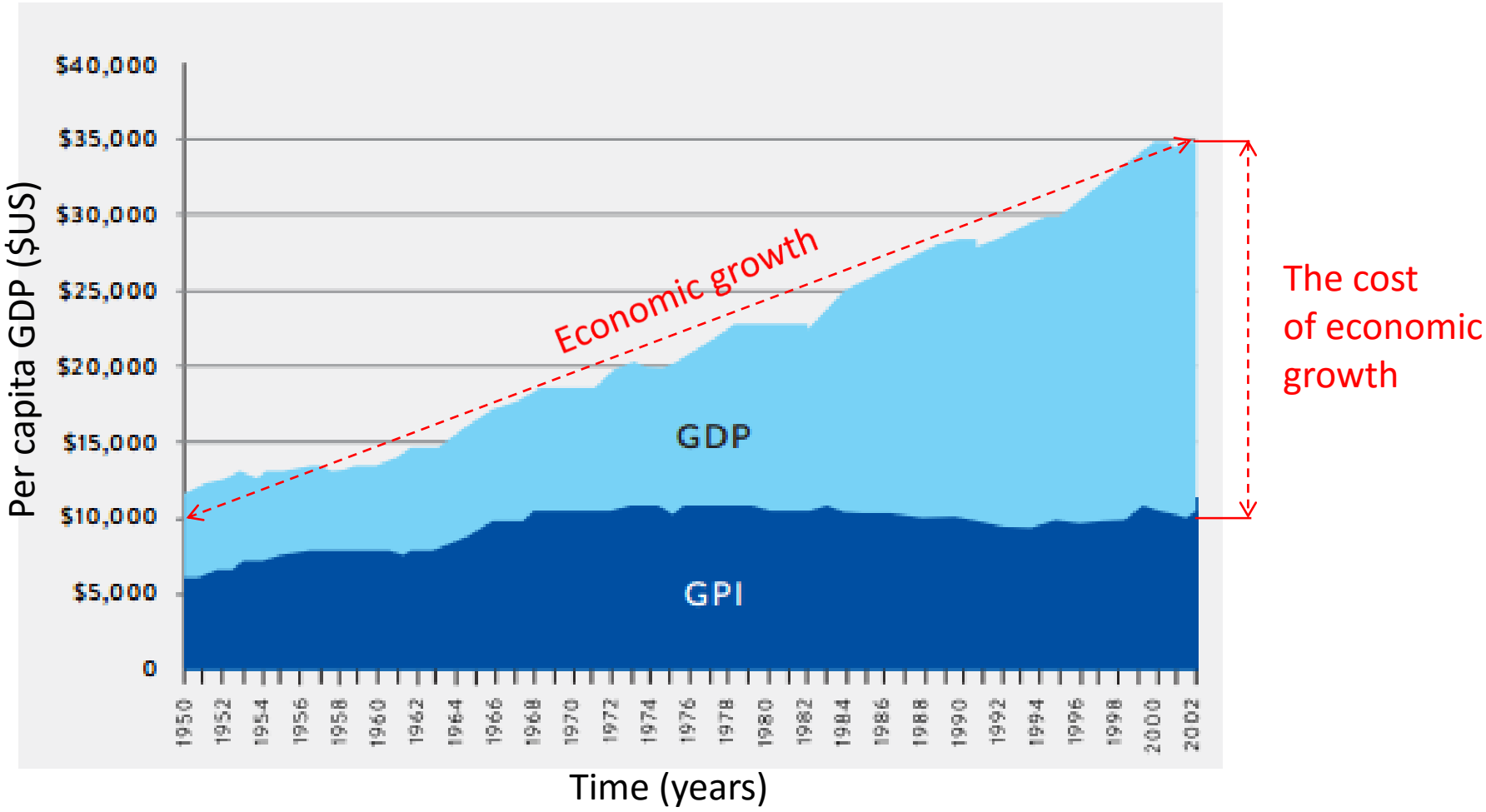

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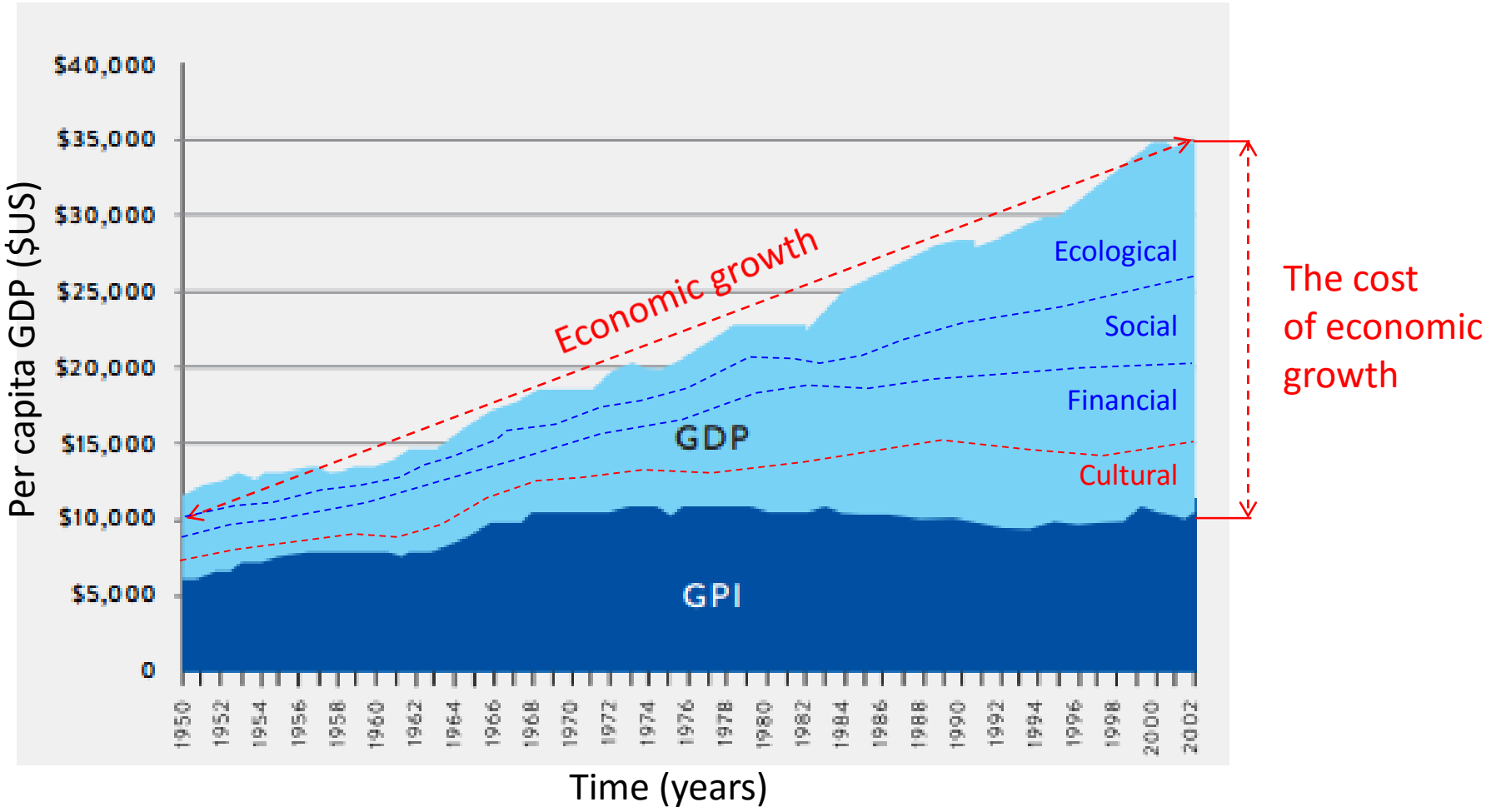

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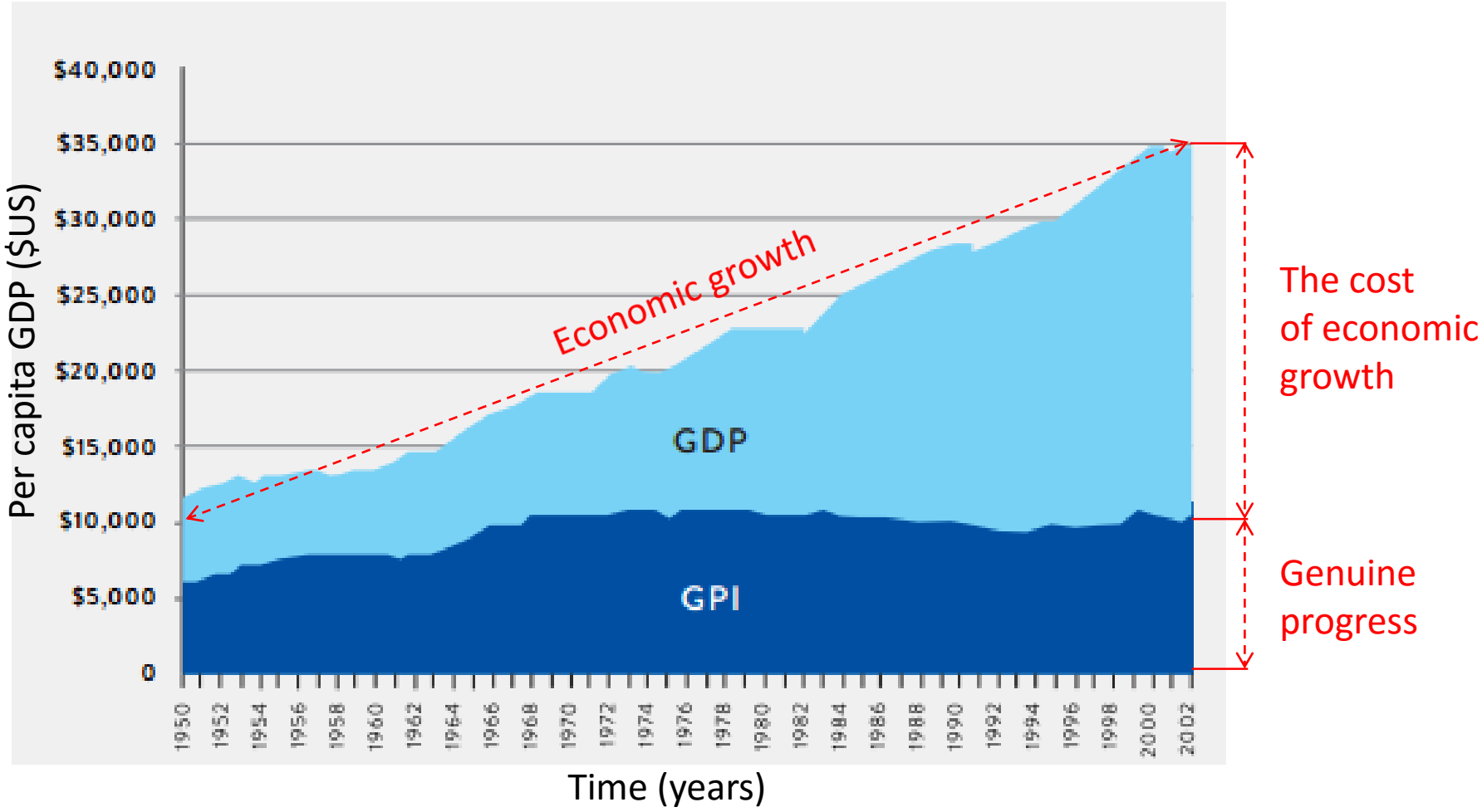

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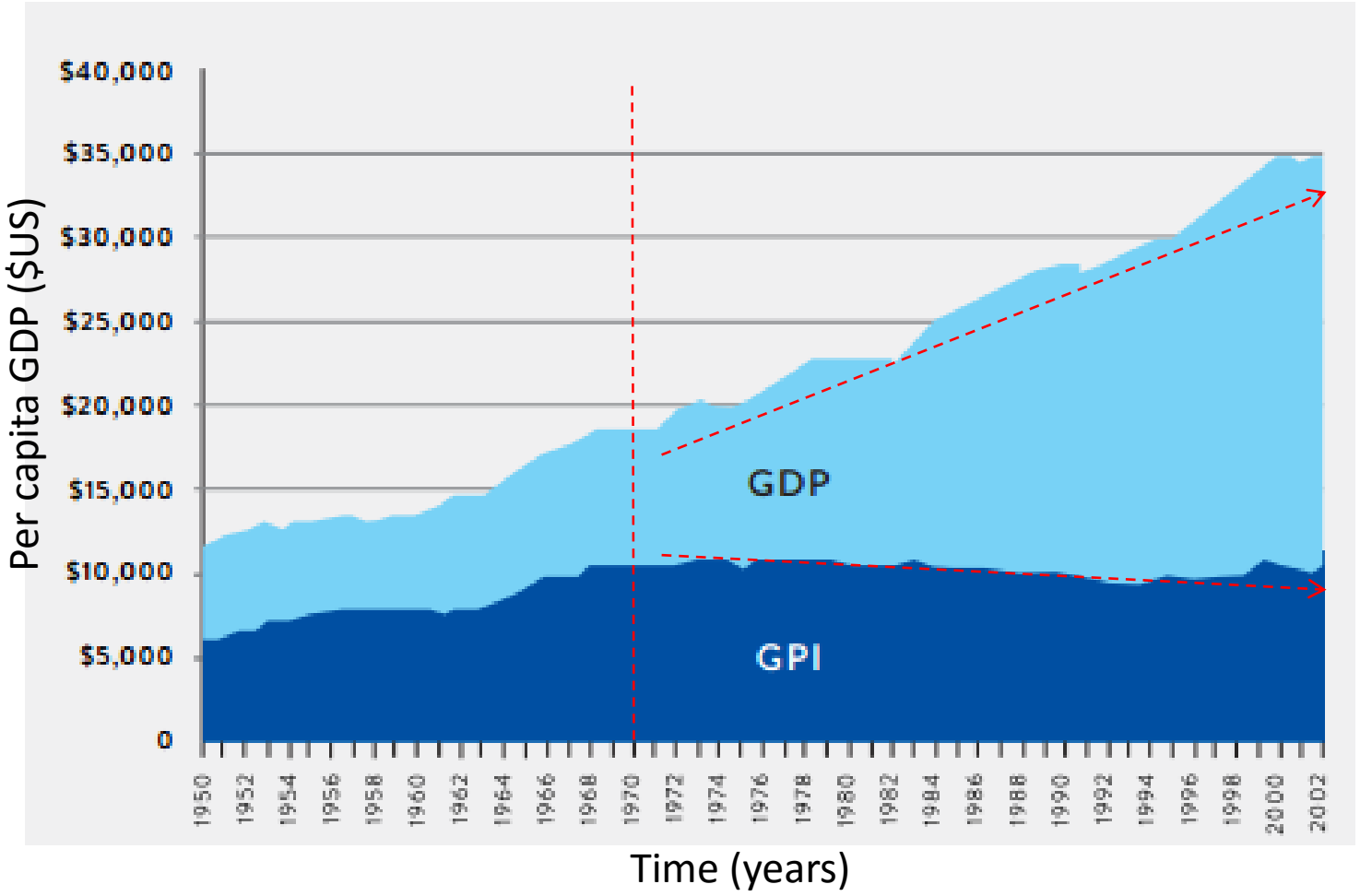


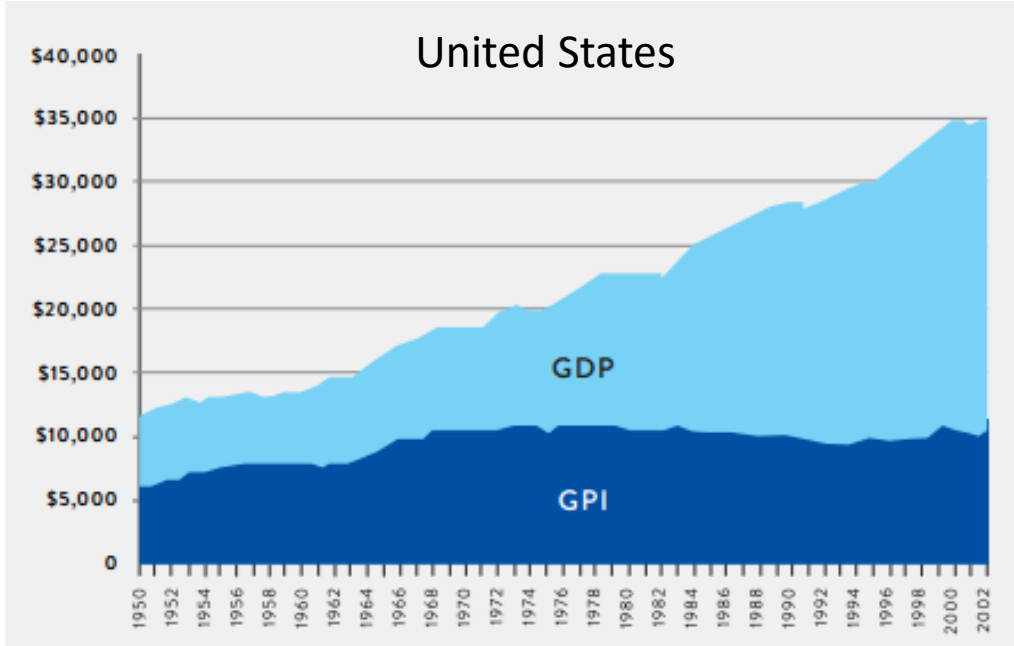

An upward trend

A downward trend

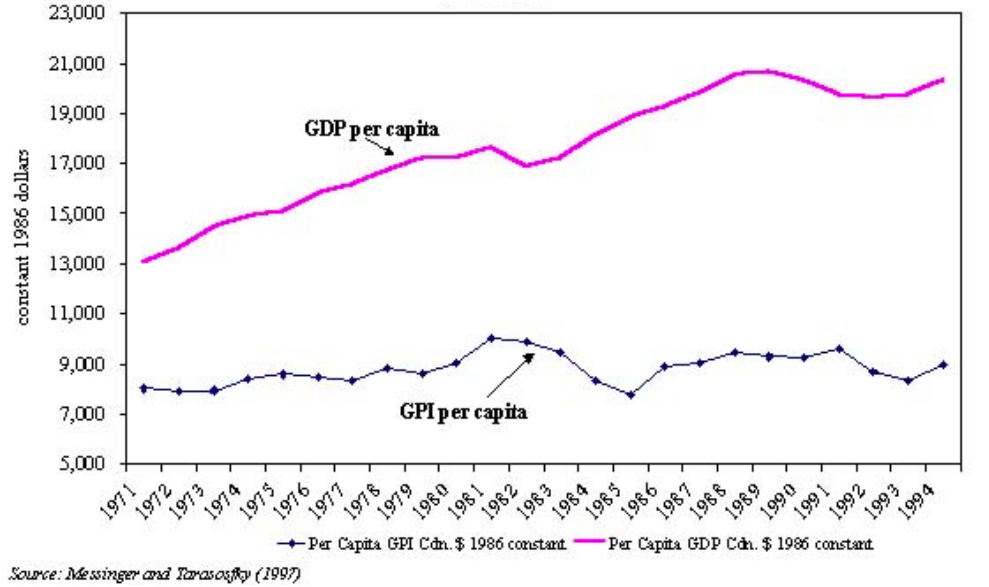
# The key message of GPI accounting so far …

More economic growth ≠ more wellbeing

## United States

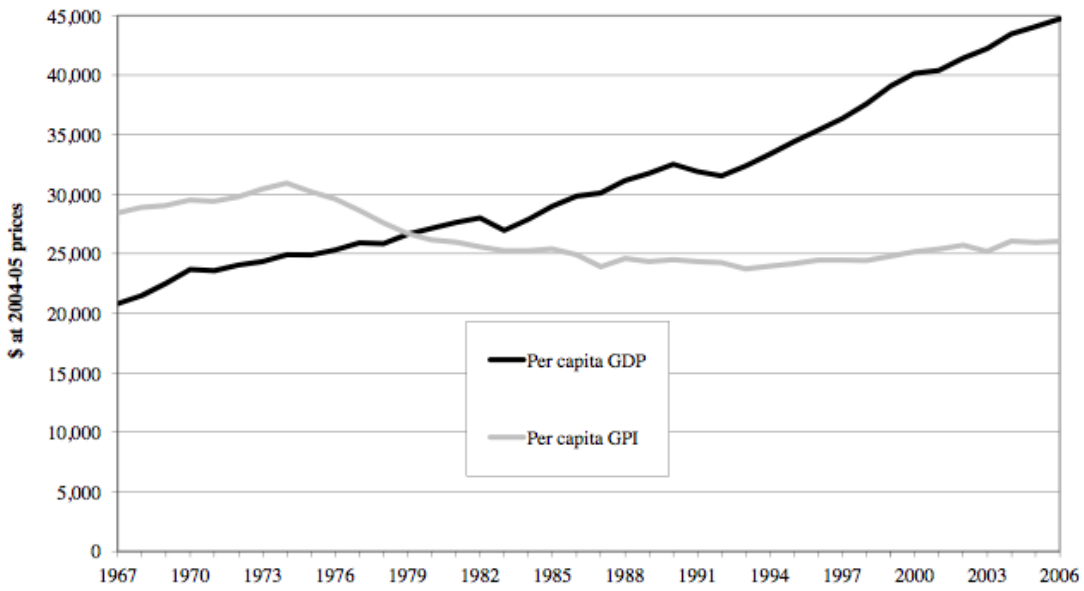



## Canada

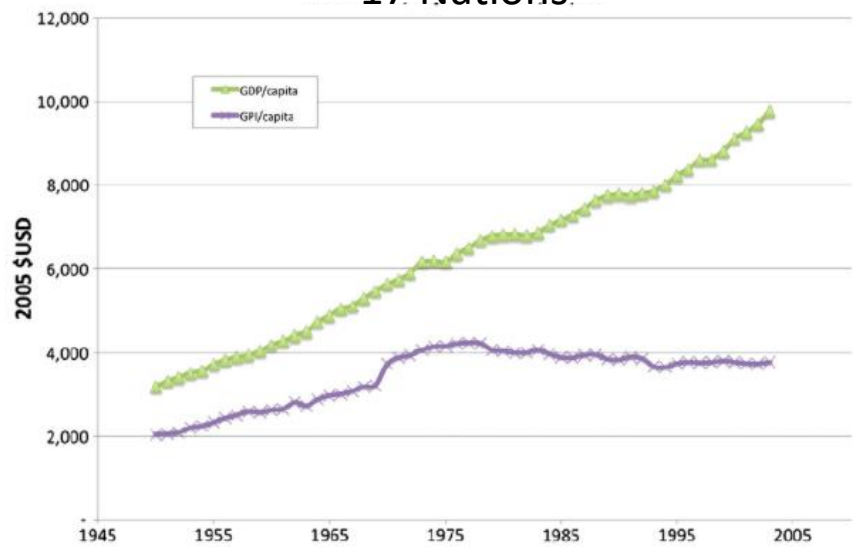



*Source: Messinger and Tarasofsky (1997)*

## Australia




## 17 Nations



# As noted - 2 models of economy in NZ

**NZ mixed market economy**

- Pākehā worldview
- English language
- Incentives and rewards
- Theoretically (value-free)
- Property rights
- Profit-making
- Free markets
- Pākehā cultural survival
- Whānau Māori decline
- Rules, laws, customs

**Whānau Māori = Ōhanga Māori**

- Te Ao Māori
- Te Reo Māori
- Incentives & rewards
- Kaupapa-based
- Whānaungatanga
- Manaakitanga
- Kotahitanga
- Whānau Māori survival
- Maintains whānau Māori wellbeing
- Kawa, kaupapa, tikanga

GDP Growth

Wellbeing decline

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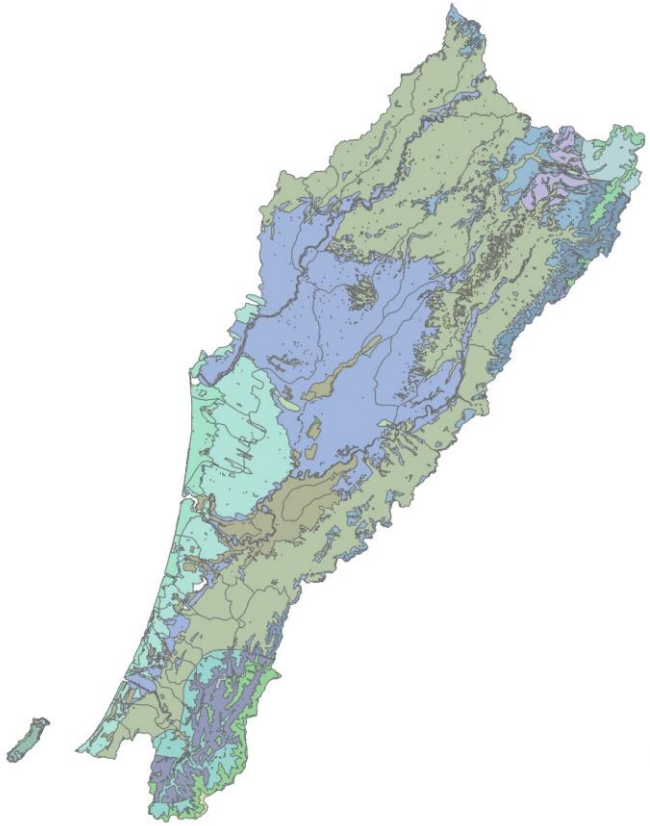
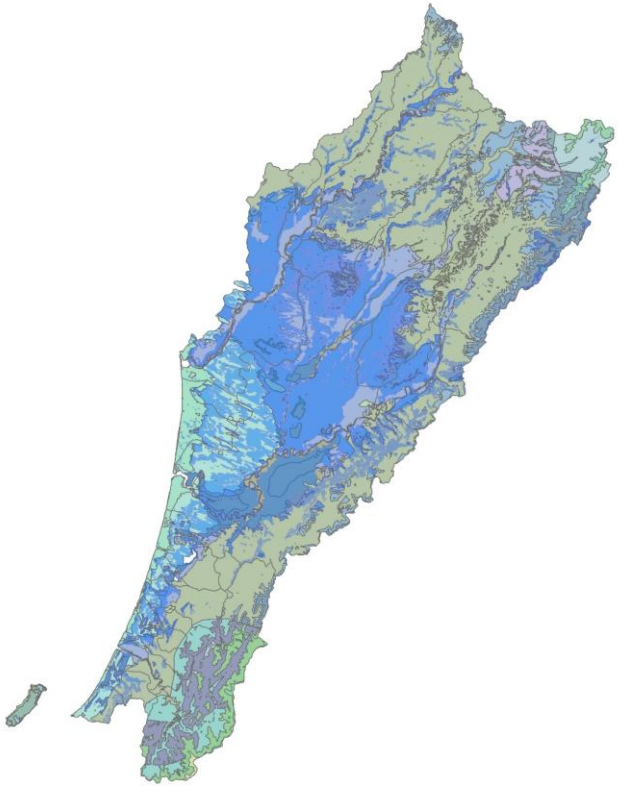
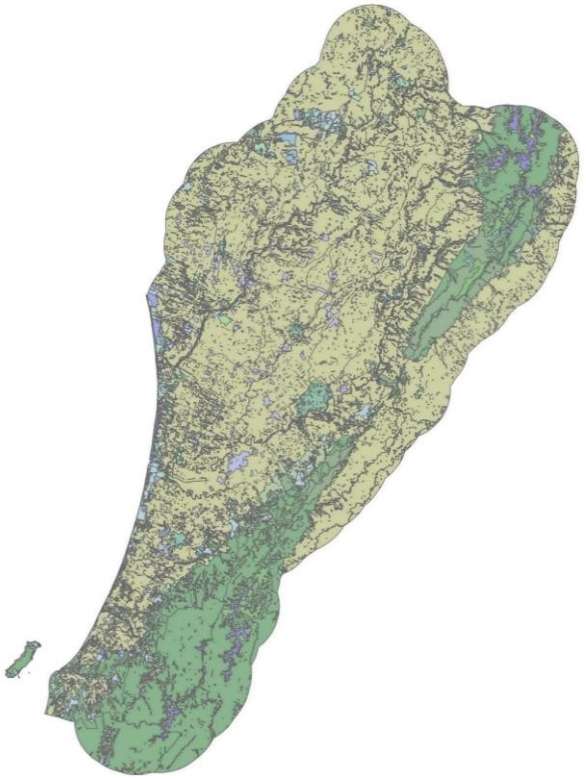
# Manawatū and Horowhenua



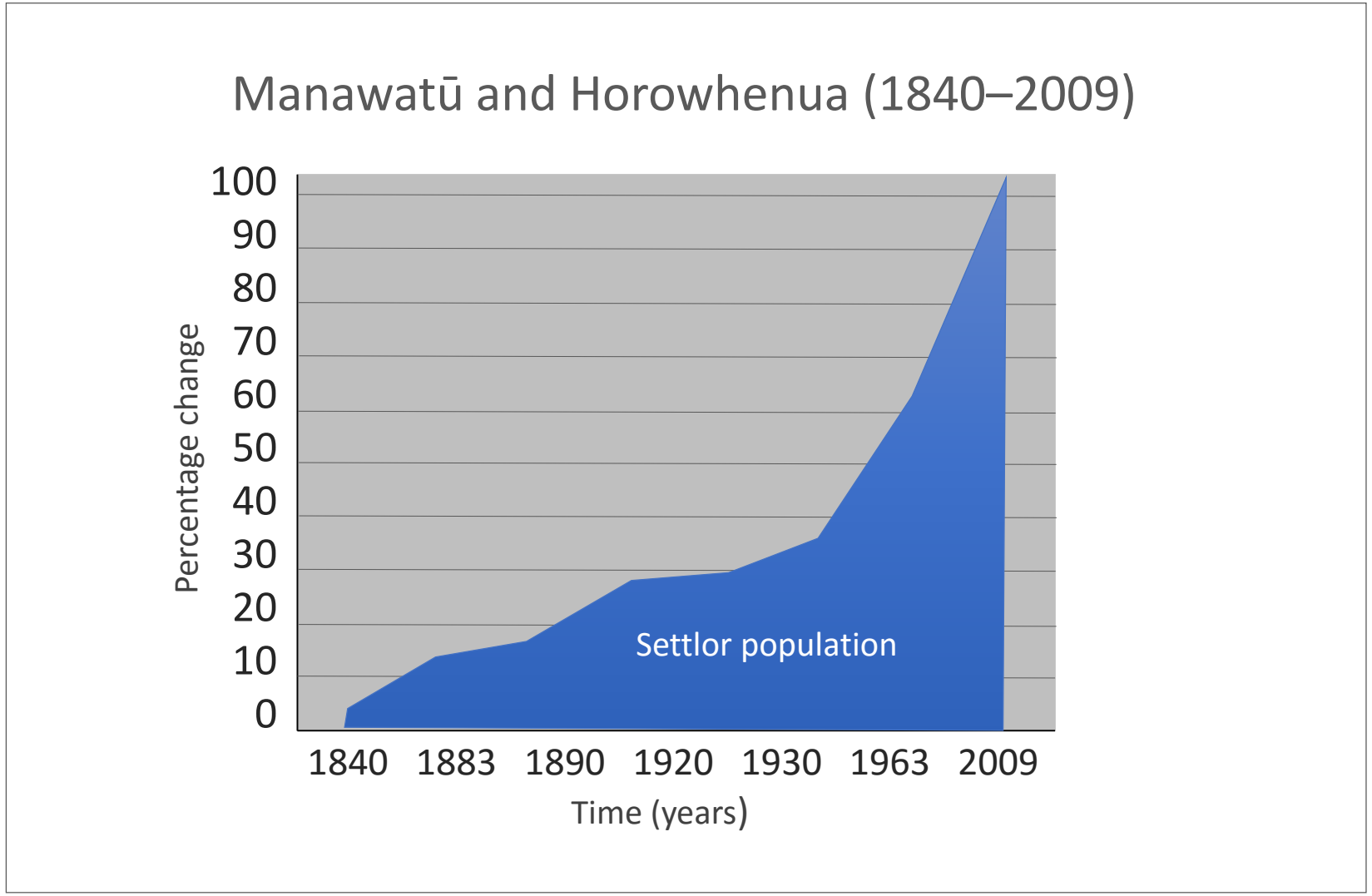
Pre-1840 Ngahere

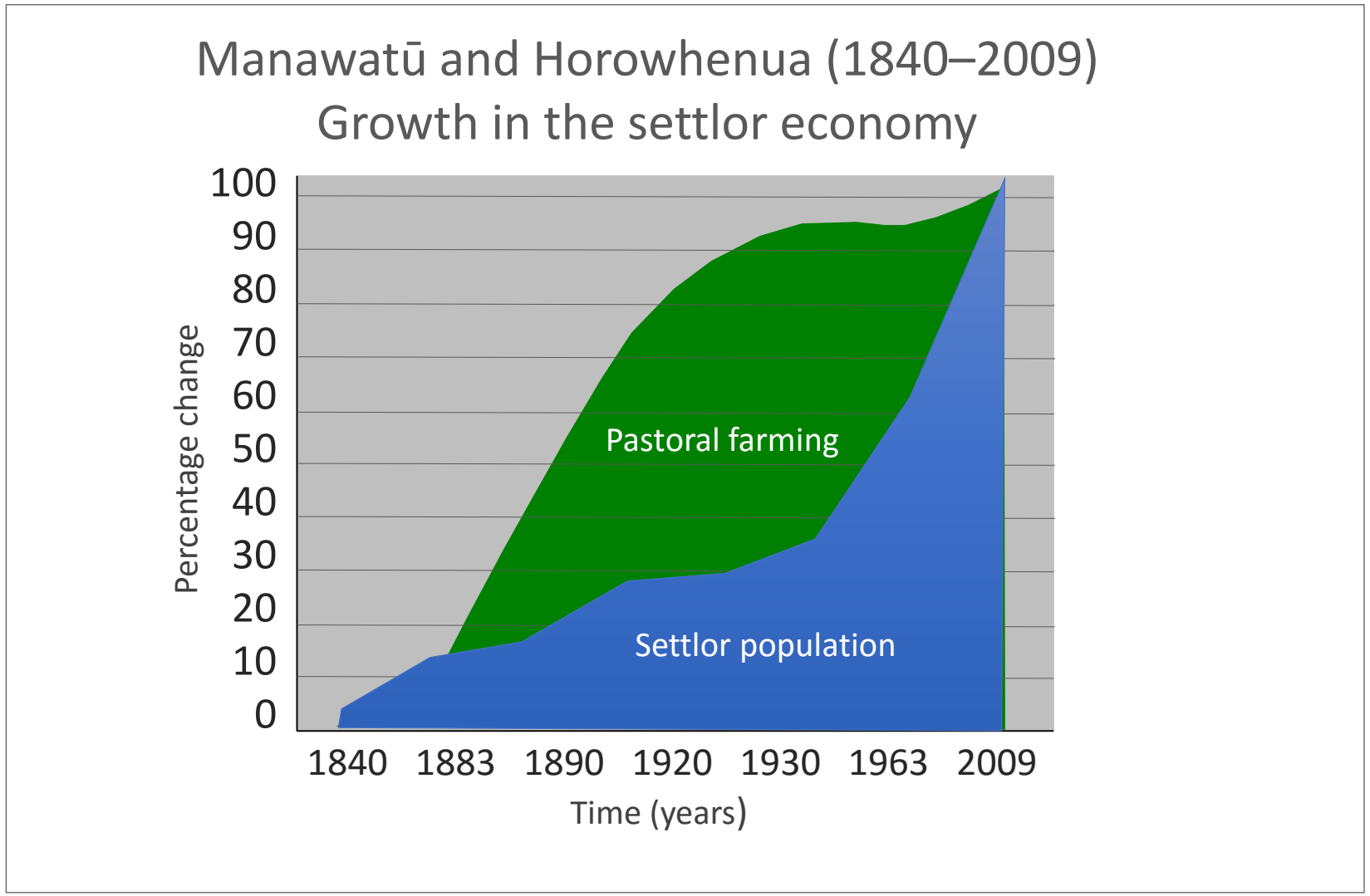


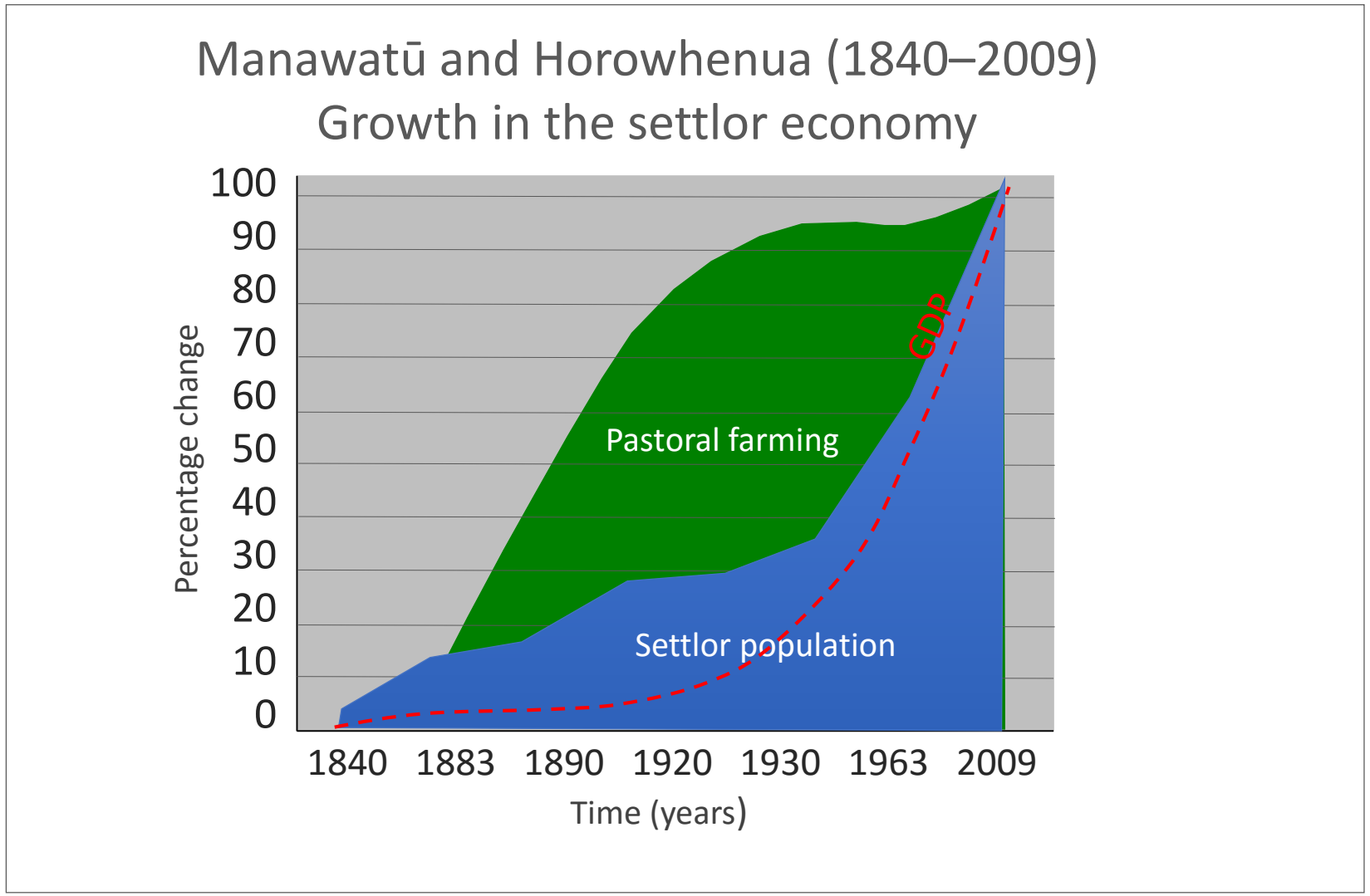
Pre-1840 kūkūwai



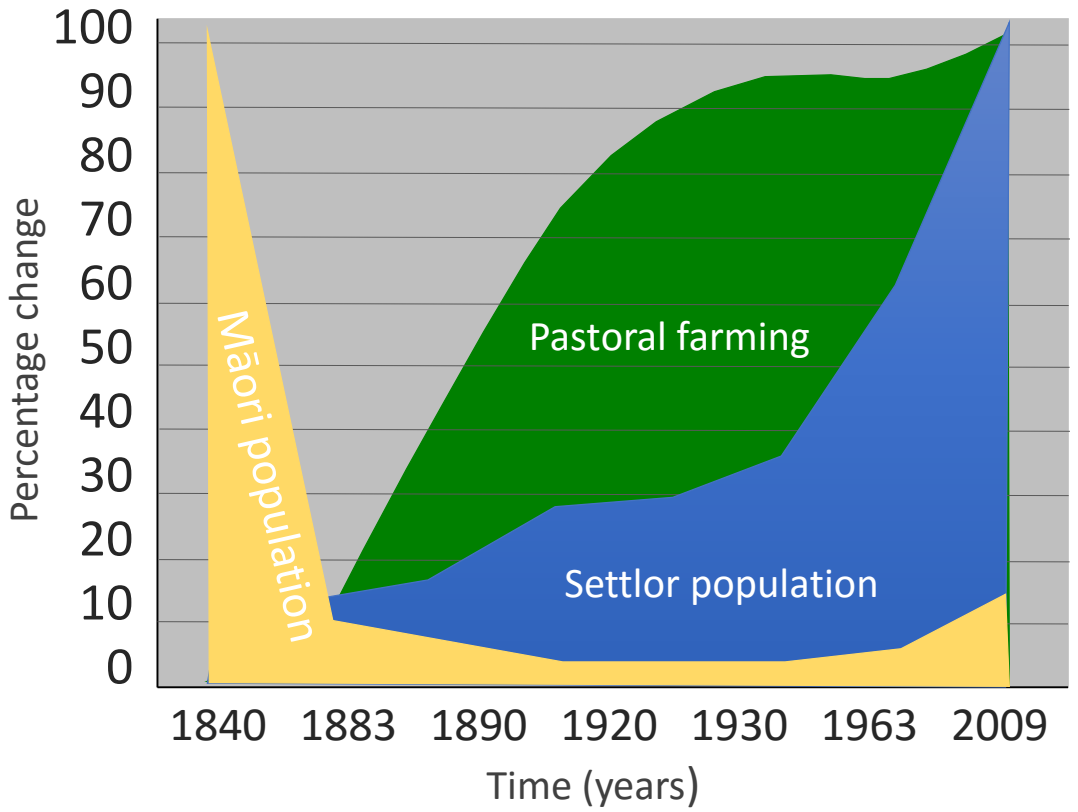
2012 Landcover


Manawatū and Horowhenua (1840–2009)
Percentage change
100
90
80
70
60
50
40
30
20
10
0
Settlor population
1840
1883
1890
1920
1930
1963
2009
Time (years)

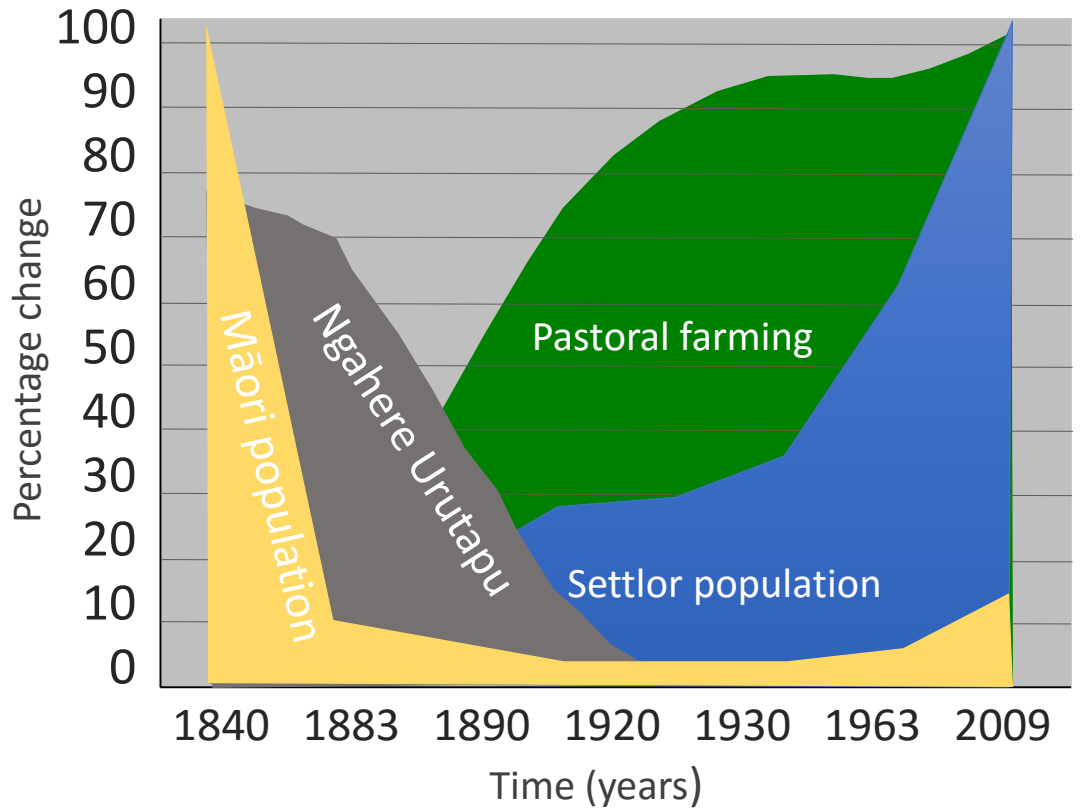

Manawatū and Horowhenua (1840–2009)
Growth in the settlor economy
Percentage change
100
90
80
70
60
50
40
30
20
10
0
Pastoral farming
Settlor population
1840
1883
1890
1920
1930
1963
2009
Time (years)


Manawatū and Horowhenua (1840–2009)
Growth in the settlor economy
Percentage change
100
90
80
70
60
50
40
30
20
10
0
GDP
Pastoral farming
Settlor population
1840
1883
1890
1920
1930
1963
2009
Time (years)

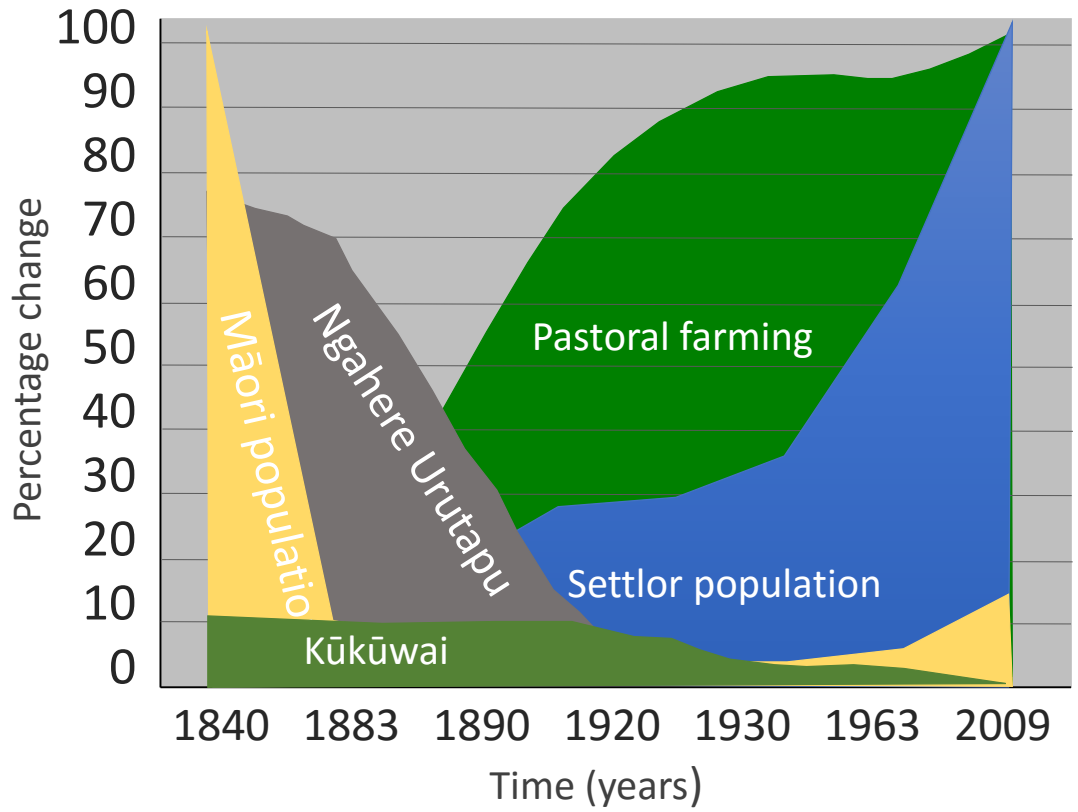
# Manawatū and Horowhenua (1840–2009)
## Decline in Te Whānau o Rangi rāua ko Papatūānuku



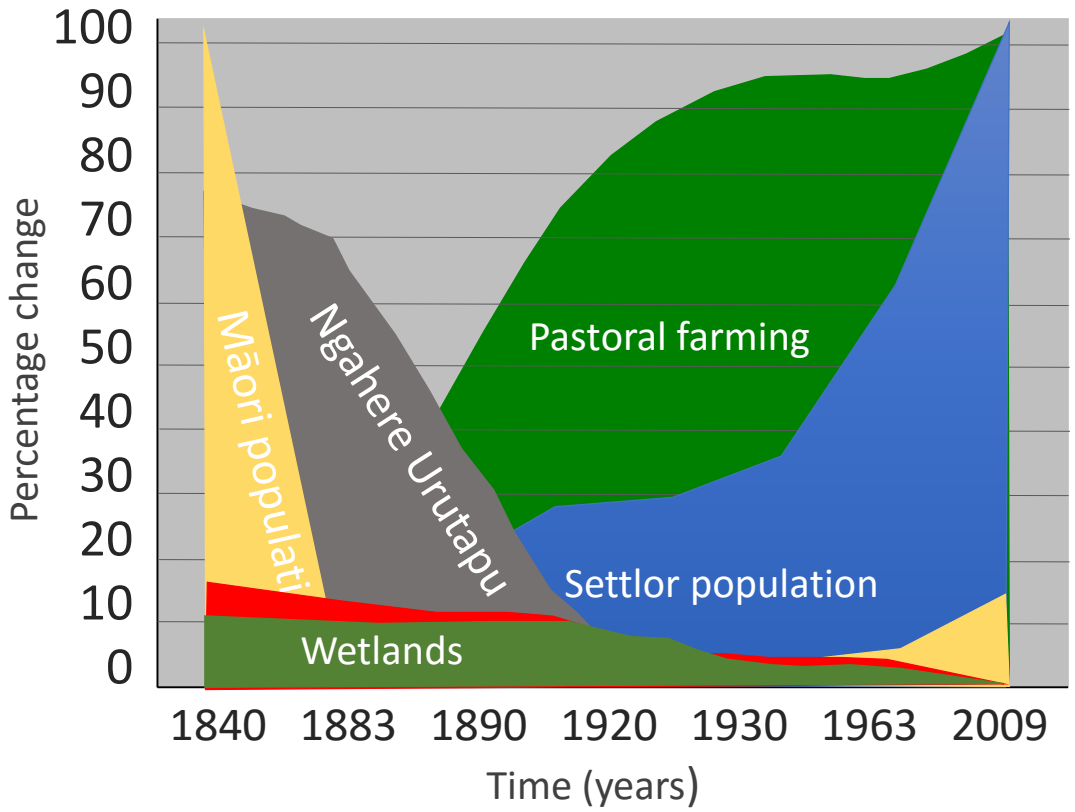
# Manawatū and Horowhenua (1840–2009)
## Decline in Te Whānau o Rangi rāua ko Papatūānuku



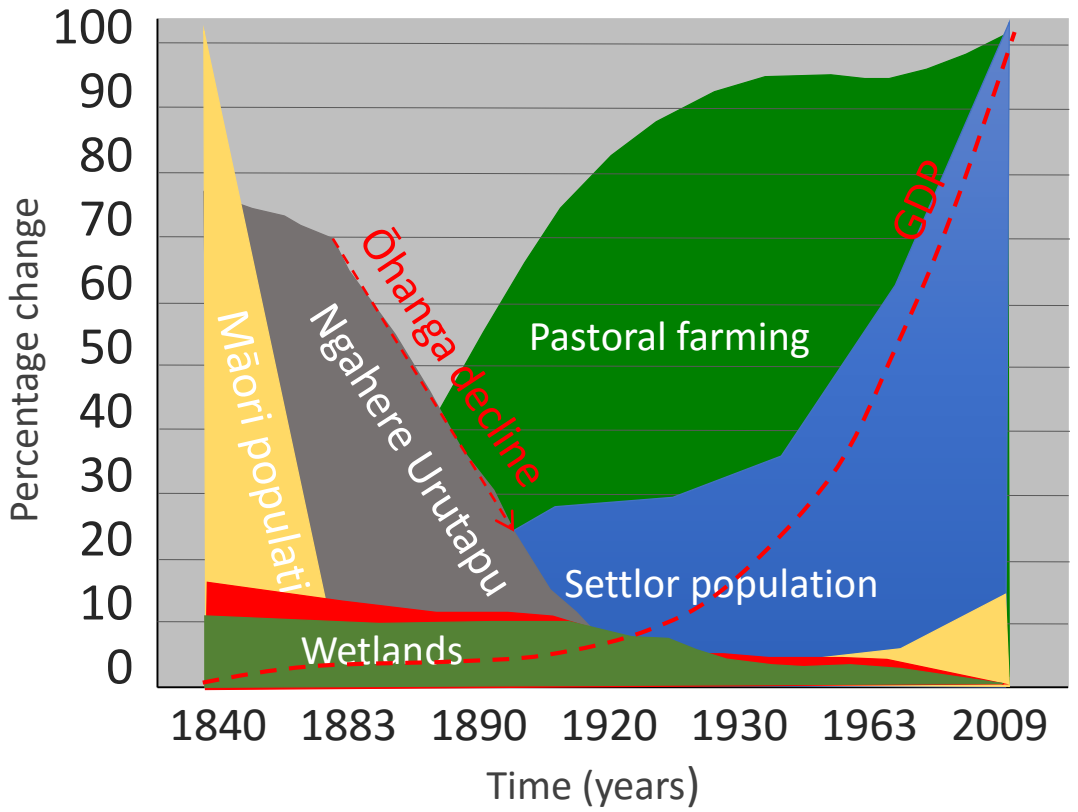
# Manawatū and Horowhenua (1840–2009)
## Decline in Te Whānau o Rangi rāua ko Papatūānuku



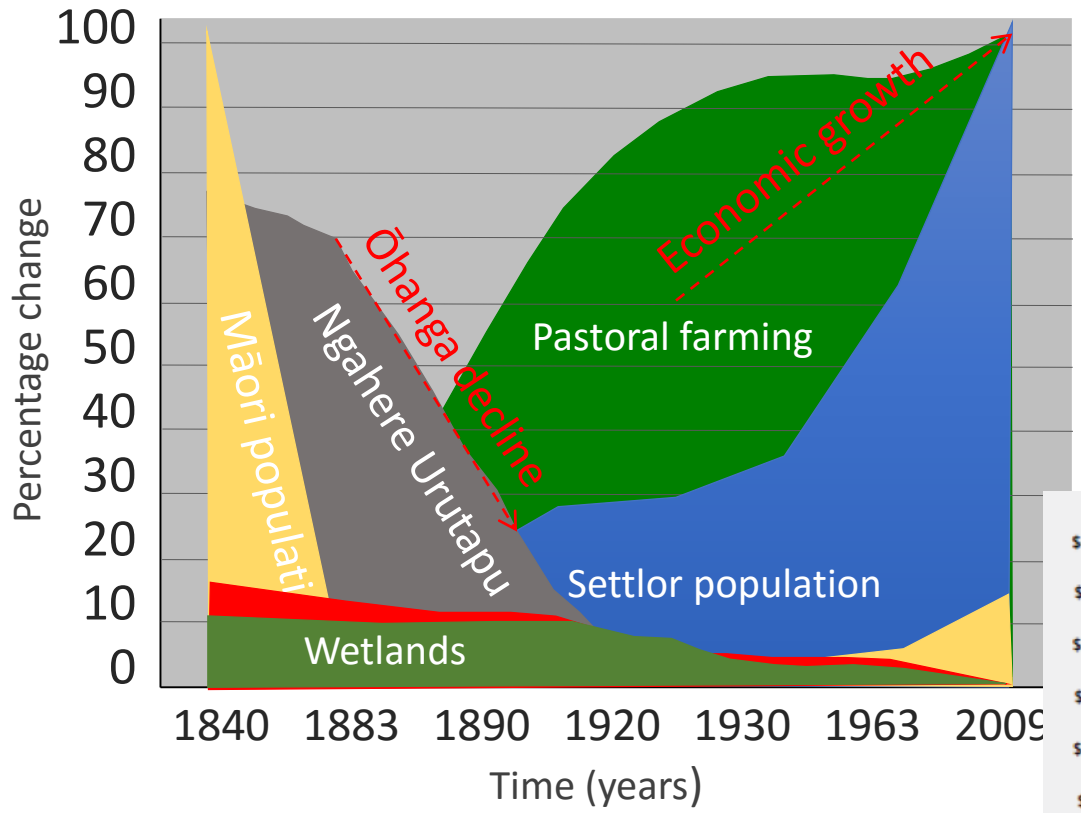
# Manawatū and Horowhenua (1840–2009)
## Decline in Te Whānau o Rangi rāua ko Papatūānuku



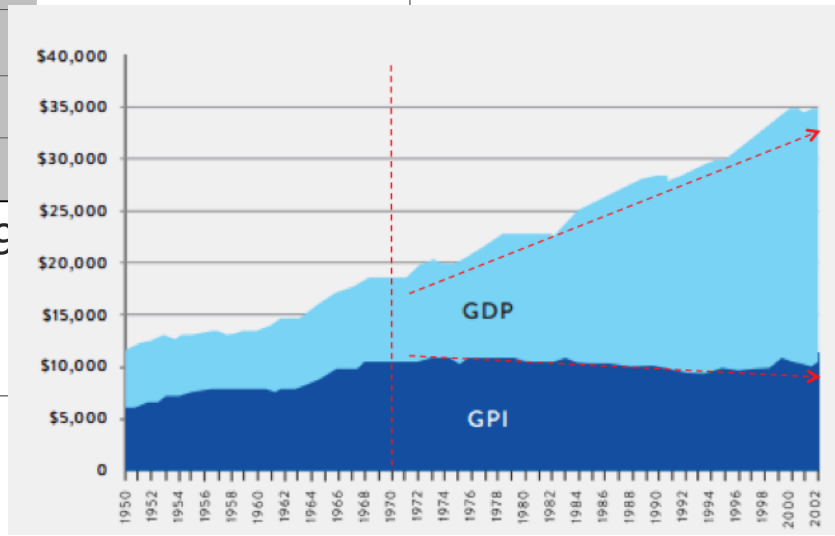
# Manawatū and Horowhenua (1840–2009)



## Manawatū and Horowhenua (1840–2009)

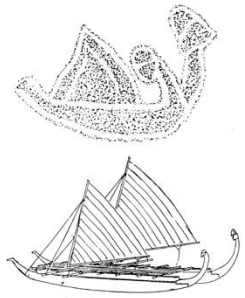


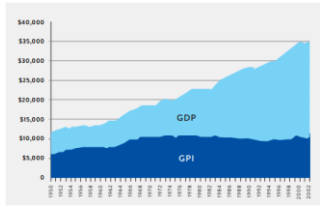

Striking similarity

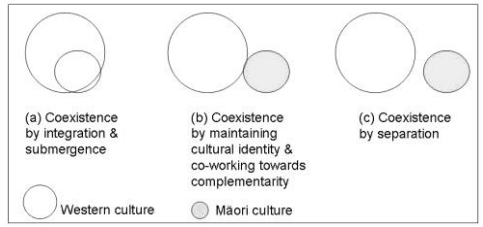


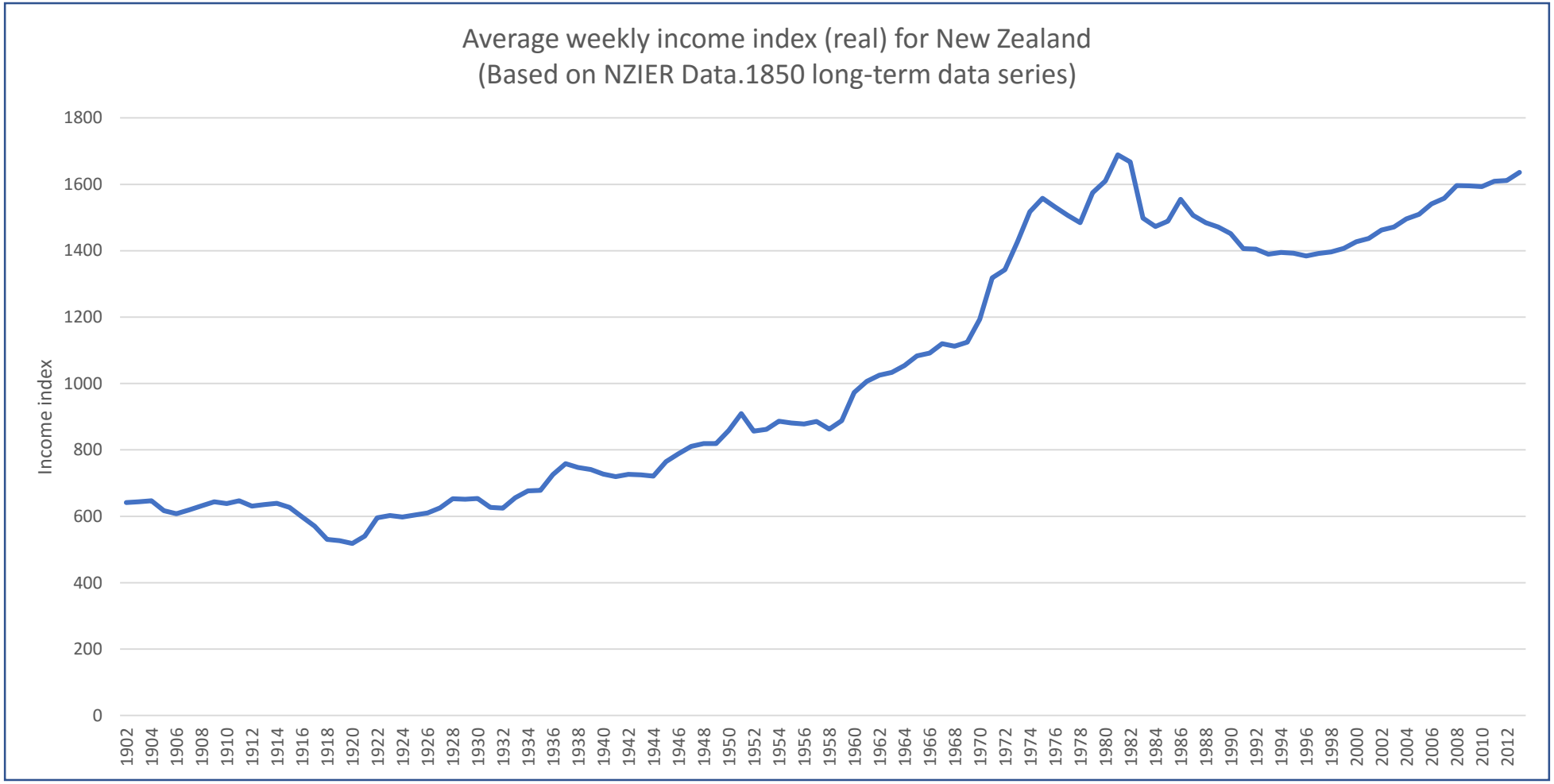
# Why?

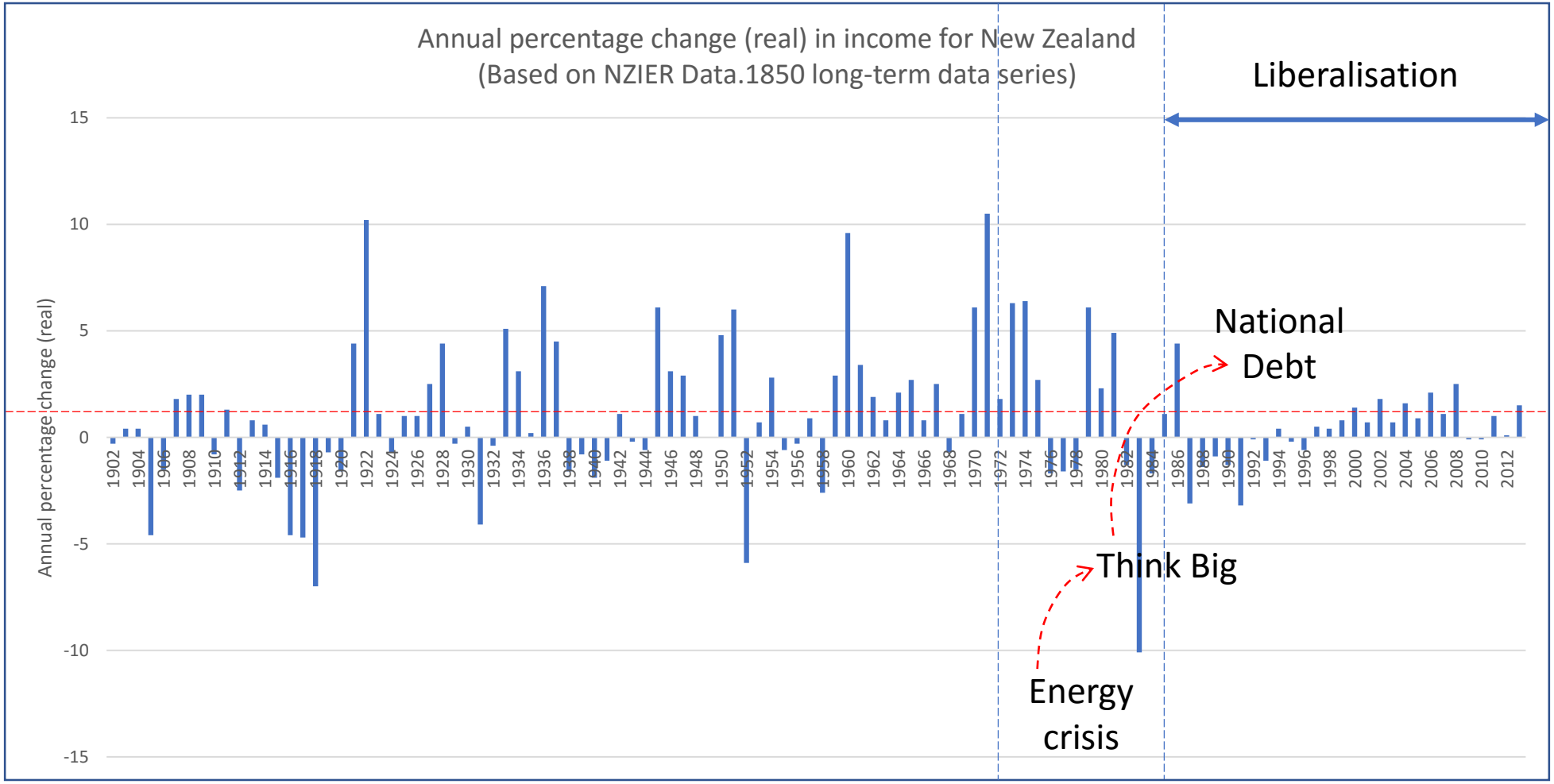
## #2 – Low wage growth for 3 decades





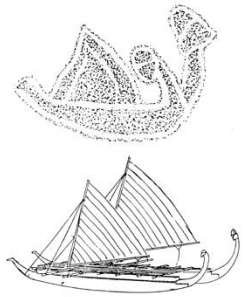



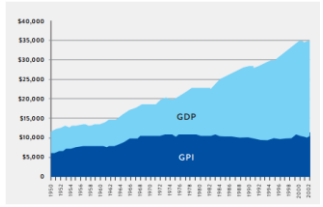

Average weekly income index (real) for New Zealand
(Based on NZIER Data.1850 long-term data series)
Income index
1800
1600
1400
1200
1000
800
600
400
200
0
1902
1904
1906
1908
1910
1912
1914
1916
1918
1920
1922
1924
1926
1928
1930
1932
1934
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012

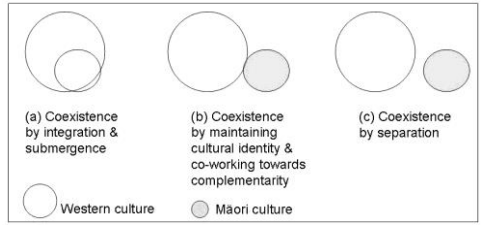

Annual percentage change (real) in income for New Zealand
(Based on NZIER Data.1850 long-term data series)
Liberalisation
Annual percentage change (real)
15
10
5
0
-5
-10
-15
1902
1904
1906
1908
1910
1912
1914
1916
1918
1920
1922
1924
1926
1928
1930
1932
1934
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
National
Debt
Think Big
Energy
crisis

# Why?

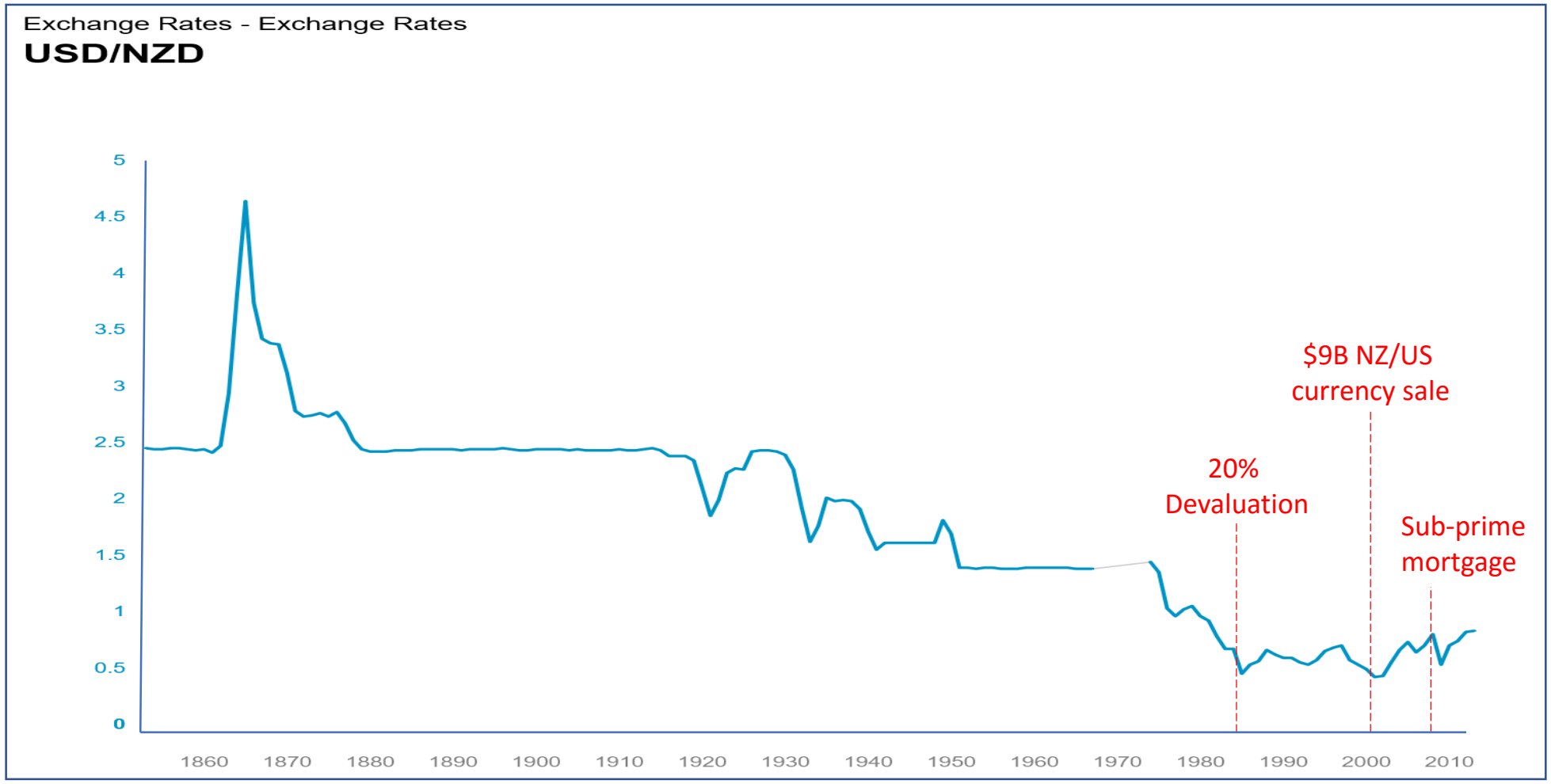
## 6 macro-economic coping strategies



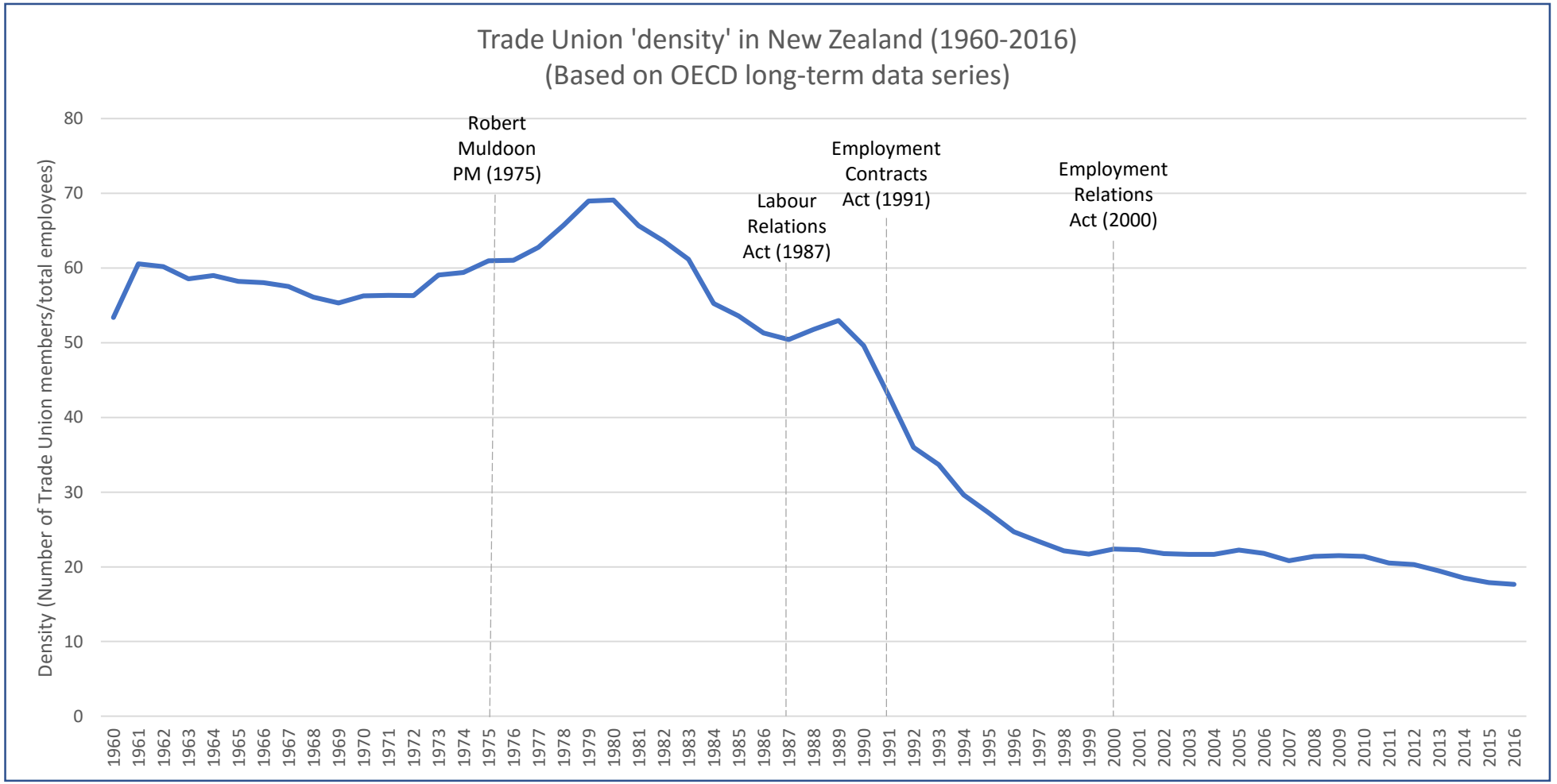


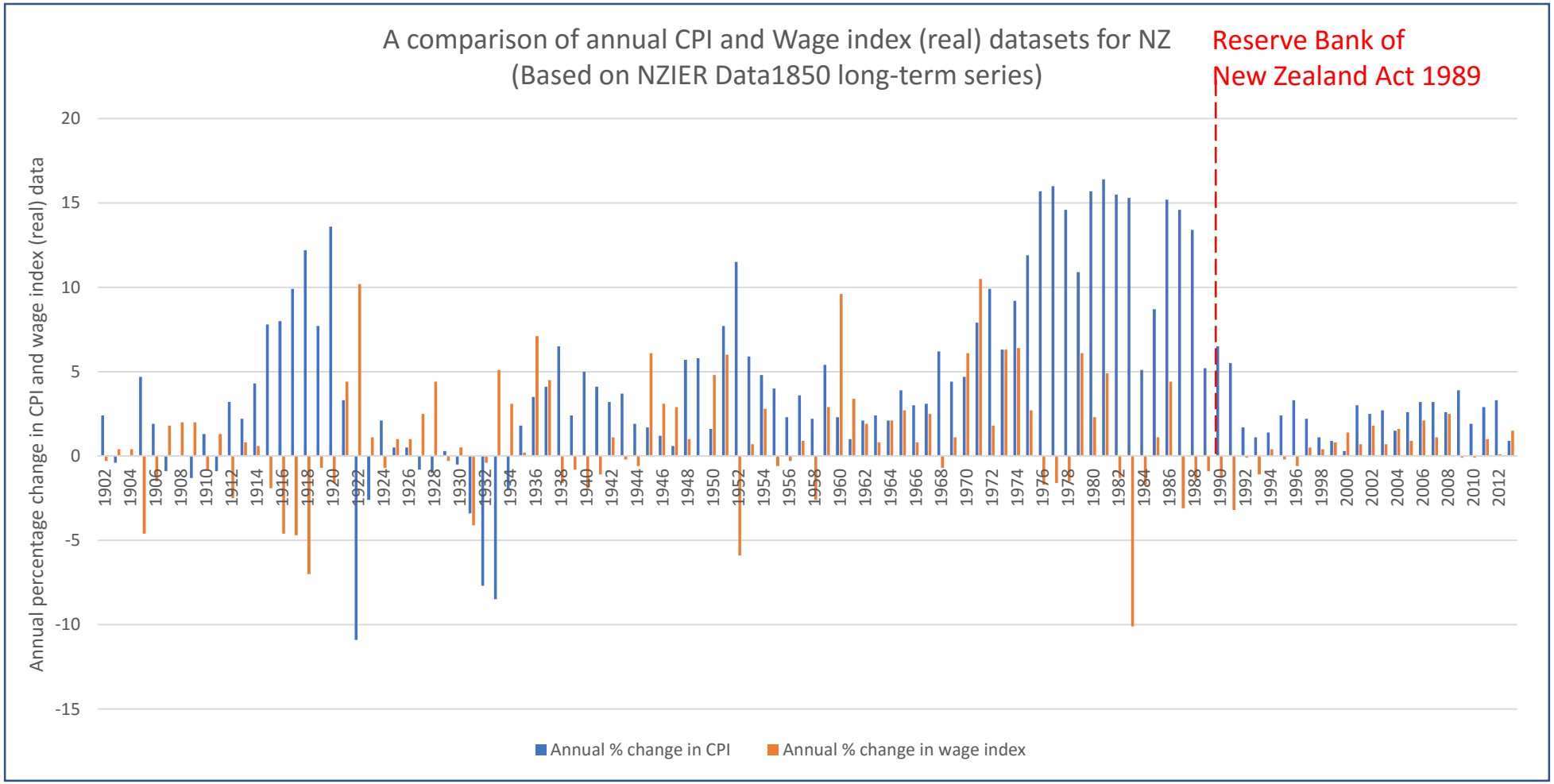
# Coping strategy # 1 – currency trading



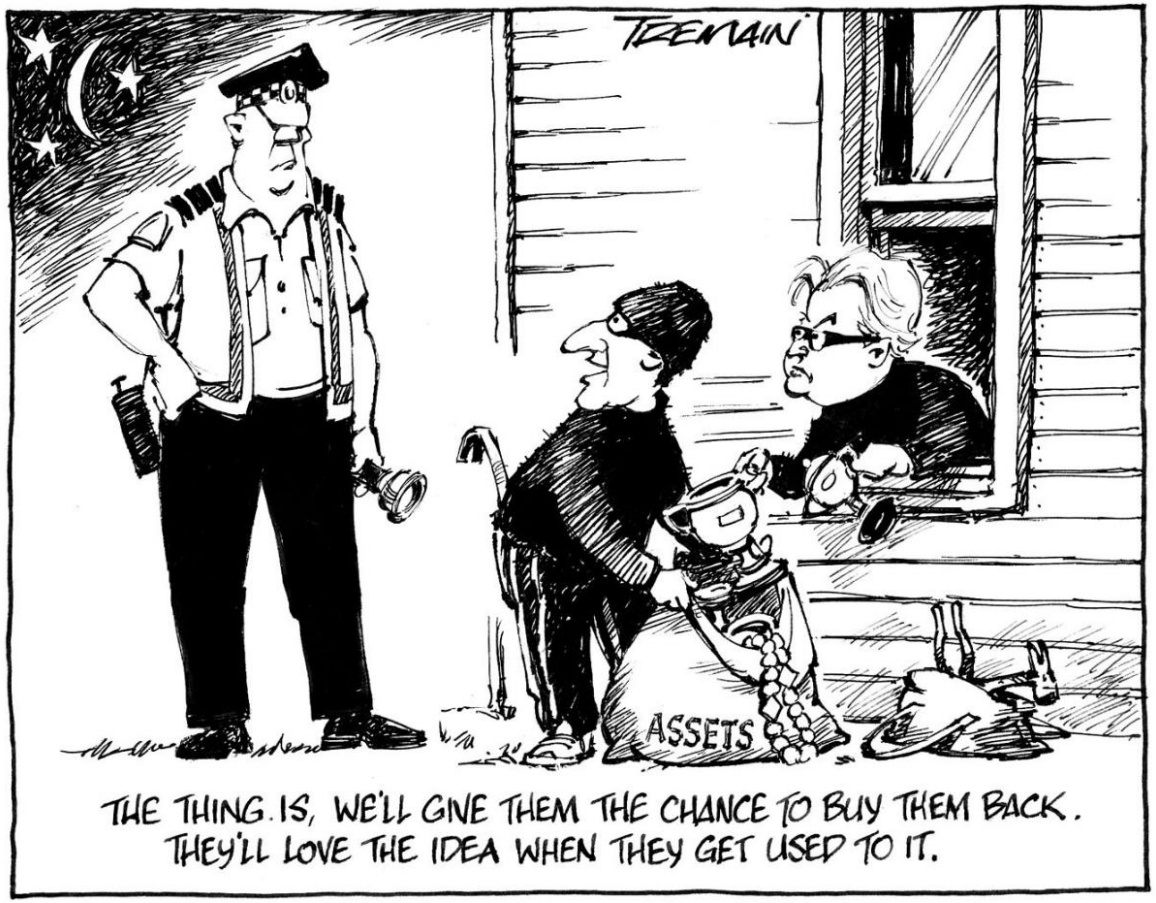
# Coping strategy # 2 – free wage bargaining

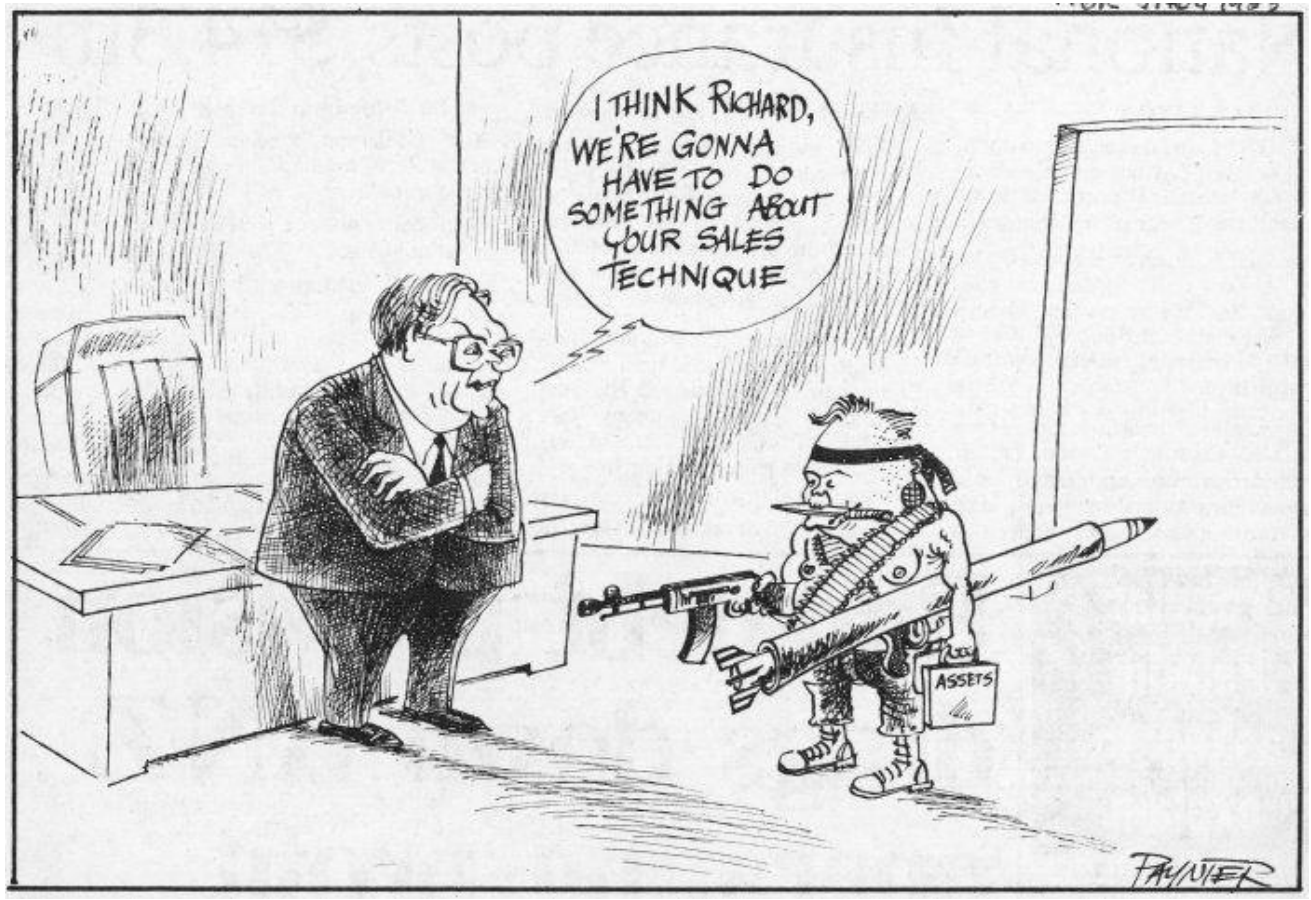


# Coping strategy # 3 – control inflation

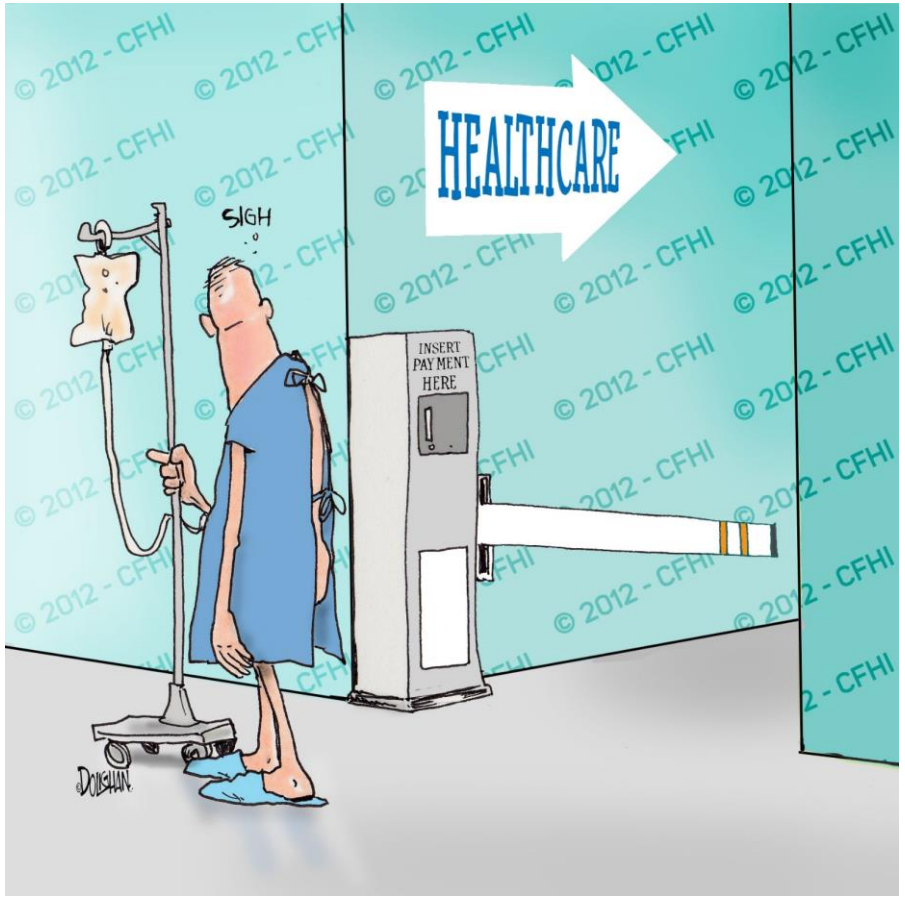


# Coping strategy # 4 – state asset sales

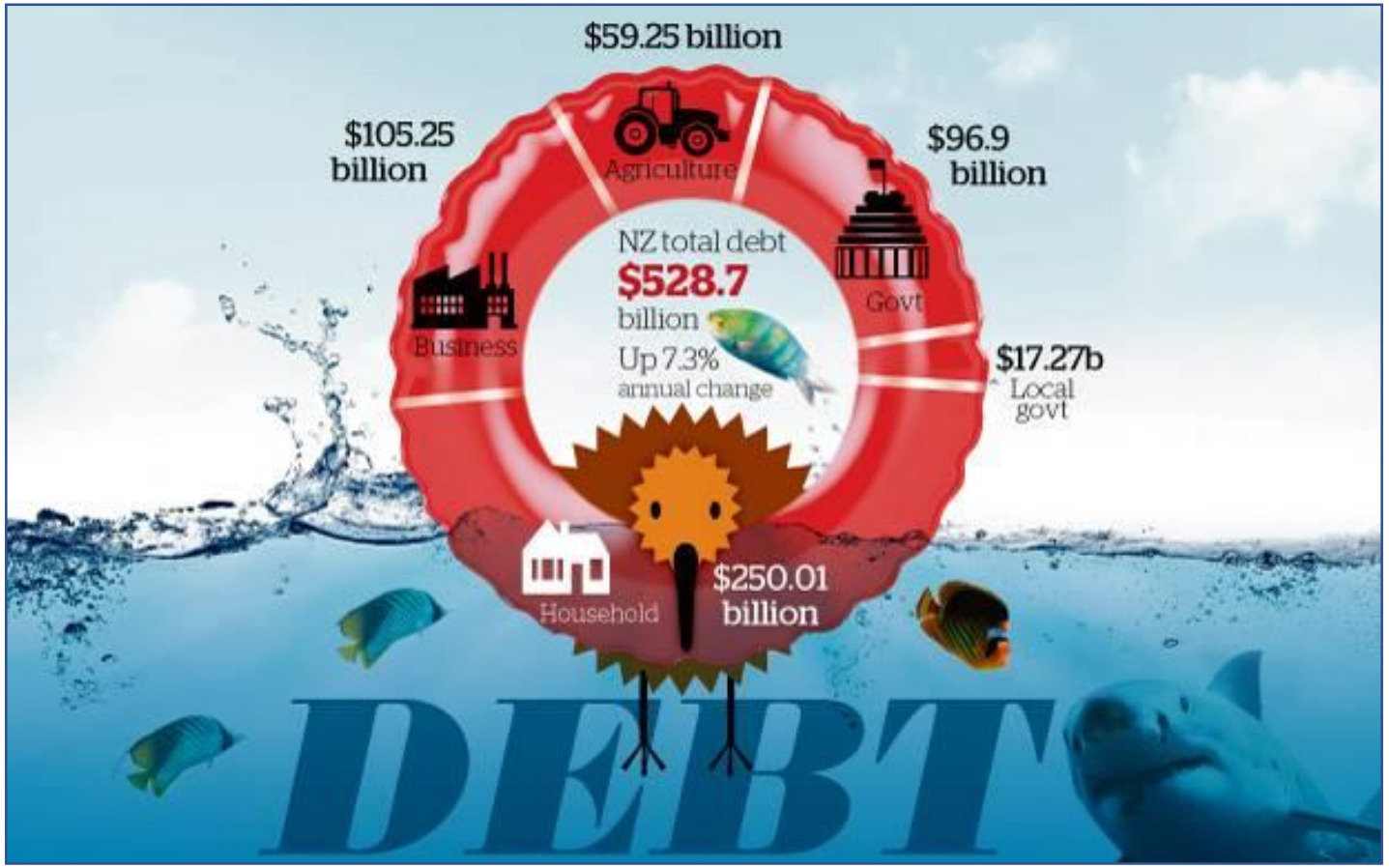


# Coping strategy # 5 – user pays

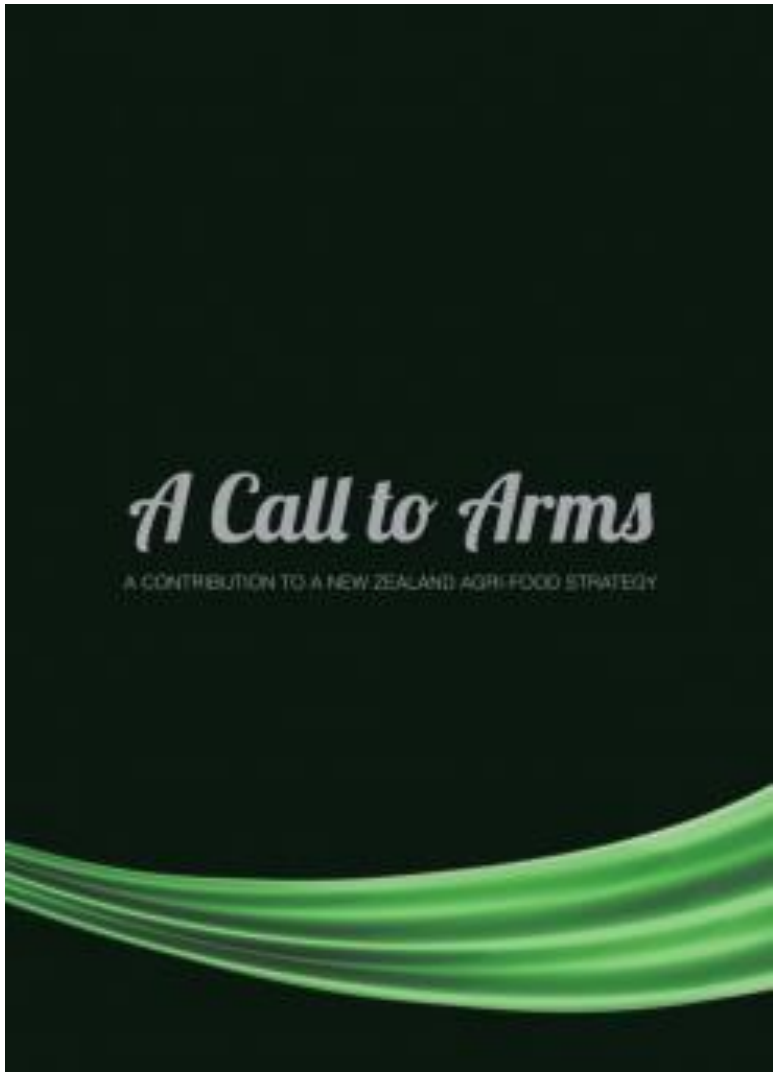
# Coping strategy # 5 – aggressive debt reduction




**Source:** NZ Herald https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11873204

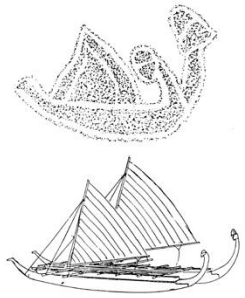
# A call to arms

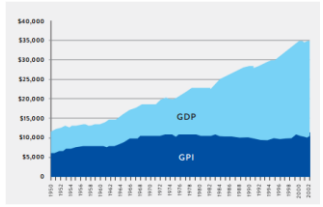
- “The Government’s Business Growth Agenda calls for a trebling of the real value of food exports to about $60 billion (in real terms in 2011 dollars) by 2025 if we are to achieve the standard of living to which we aspire. This is a real compound annual growth rate (CAGR) of around 7% over the next 13 years … (Riddet Institute, 2012)”.

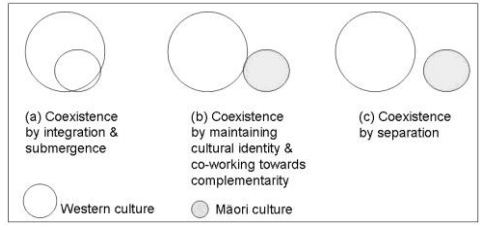


# Why?

## 5 household coping strategies

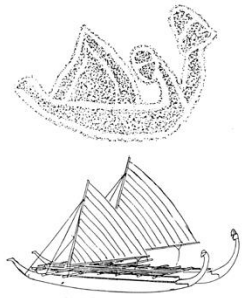


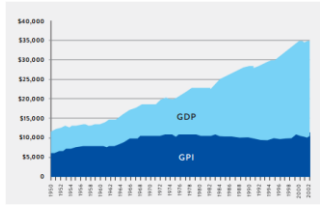


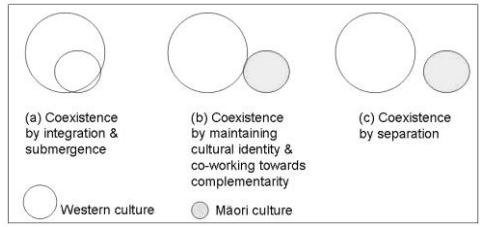



# Coping strategy #1

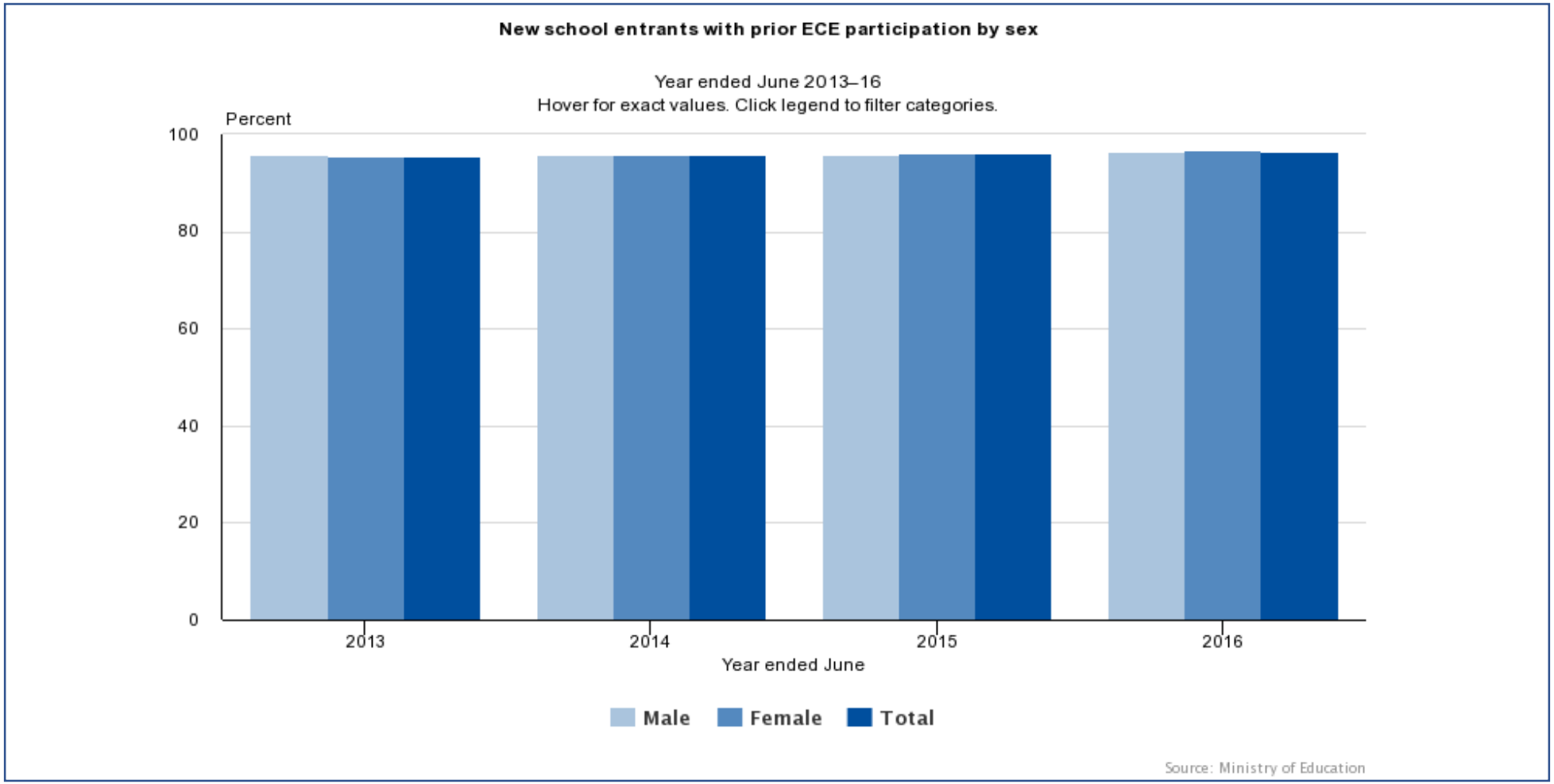
## More woman entre the labour market





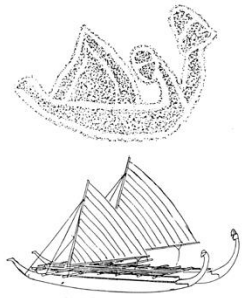



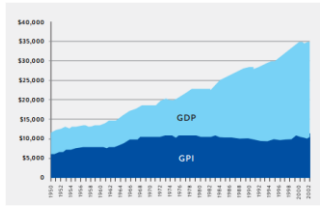

Average rate of entry of woman into the labour force per year (1955-2007)
(Based on NZIER Data1850 long-term data series)
Woman per year
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
23,529
50,000
53,333
125,000
1955-1972
1972-1984
1984-1999
1999-2007

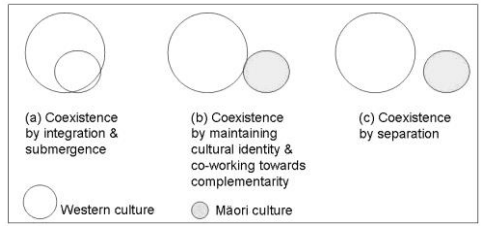

New school entrants with prior ECE participation by sex
Year ended June 2013–16
Hover for exact values. Click legend to filter categories.
Percent
100
80
60
40
20
0
2013
2014
2015
2016
Year ended June
Male
Female
Total
Source: Ministry of Education

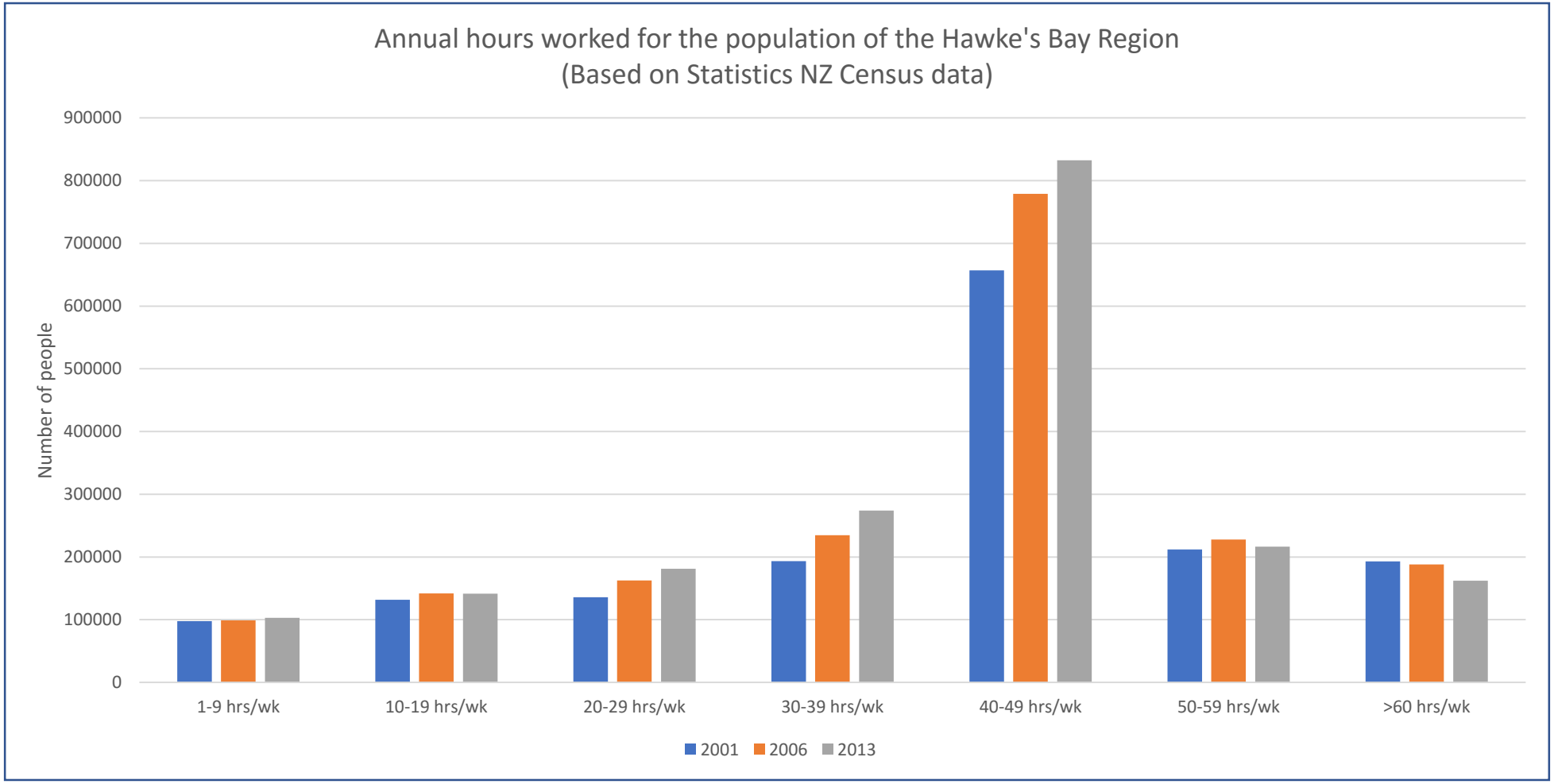
# Coping strategy #2

## Work longer ‘paid’ hours



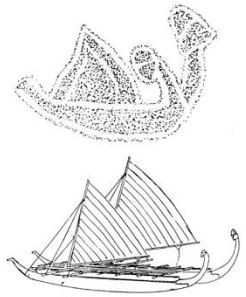


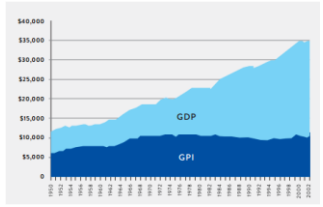



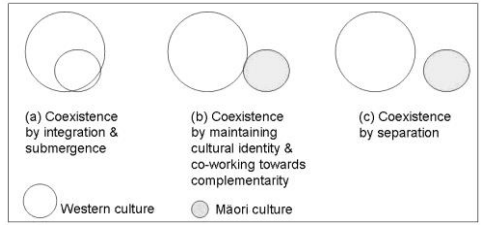

Annual hours worked for the population of the Hawke's Bay Region
(Based on Statistics NZ Census data)
Number of people
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
1-9 hrs/wk
10-19 hrs/wk
20-29 hrs/wk
30-39 hrs/wk
40-49 hrs/wk
50-59 hrs/wk
>60 hrs/wk
2001
2006
2013

# Coping strategy #3

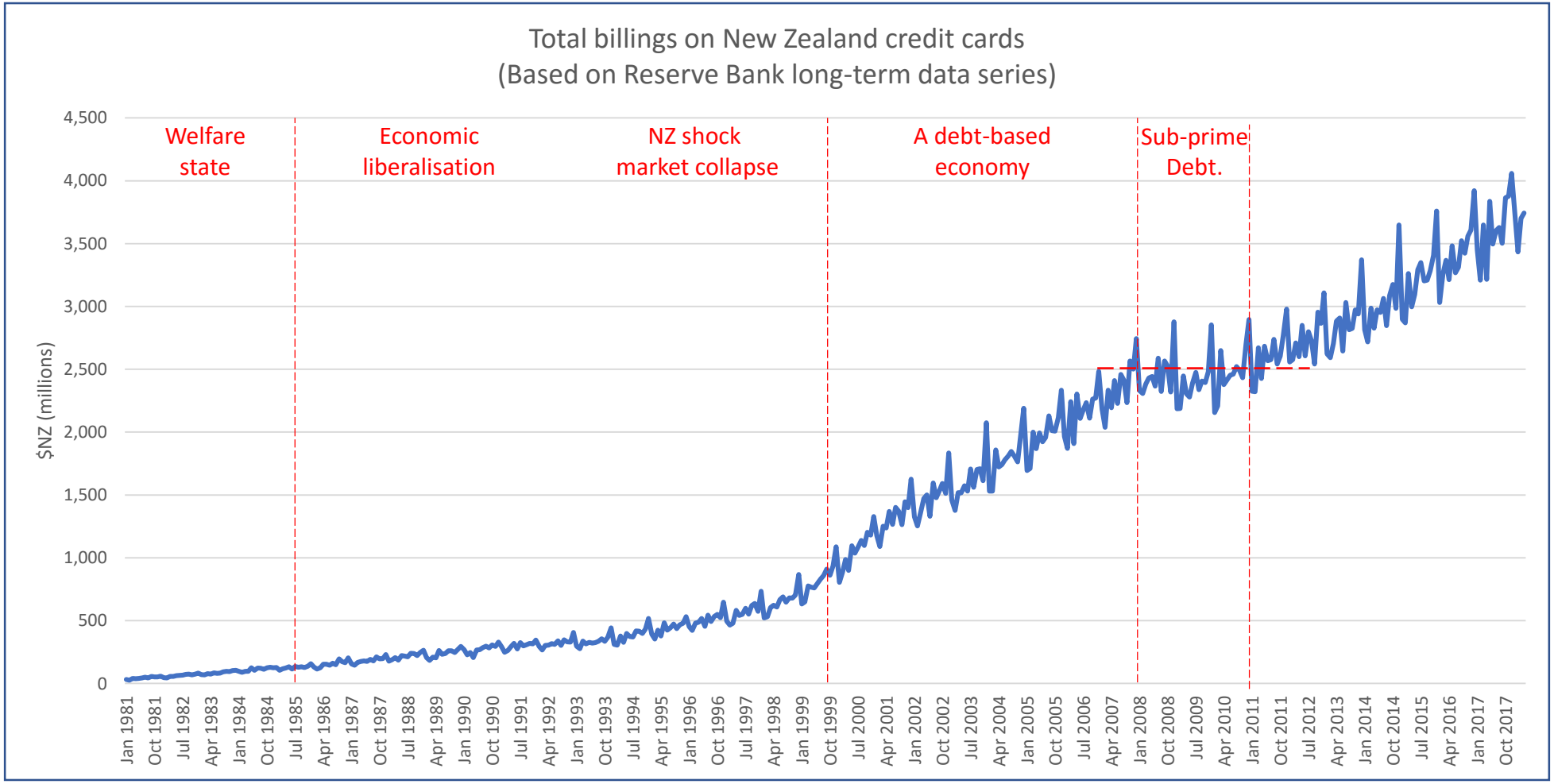
## Credit card use





PLAN TO REBUILD U.S. ECONOMY...


Total billings on New Zealand credit cards
(Based on Reserve Bank long-term data series)
Welfare state
Economic liberalisation
NZ shock market collapse
A debt-based economy
Sub-prime Debt.
$NZ (millions)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Jan 1981
Oct 1981
Jul 1982
Apr 1983
Jan 1984
Oct 1984
Jul 1985
Apr 1986
Jan 1987
Oct 1987
Jul 1988
Apr 1989
Jan 1990
Oct 1990
Jul 1991
Apr 1992
Jan 1993
Oct 1993
Jul 1994
Apr 1995
Jan 1996
Oct 1996
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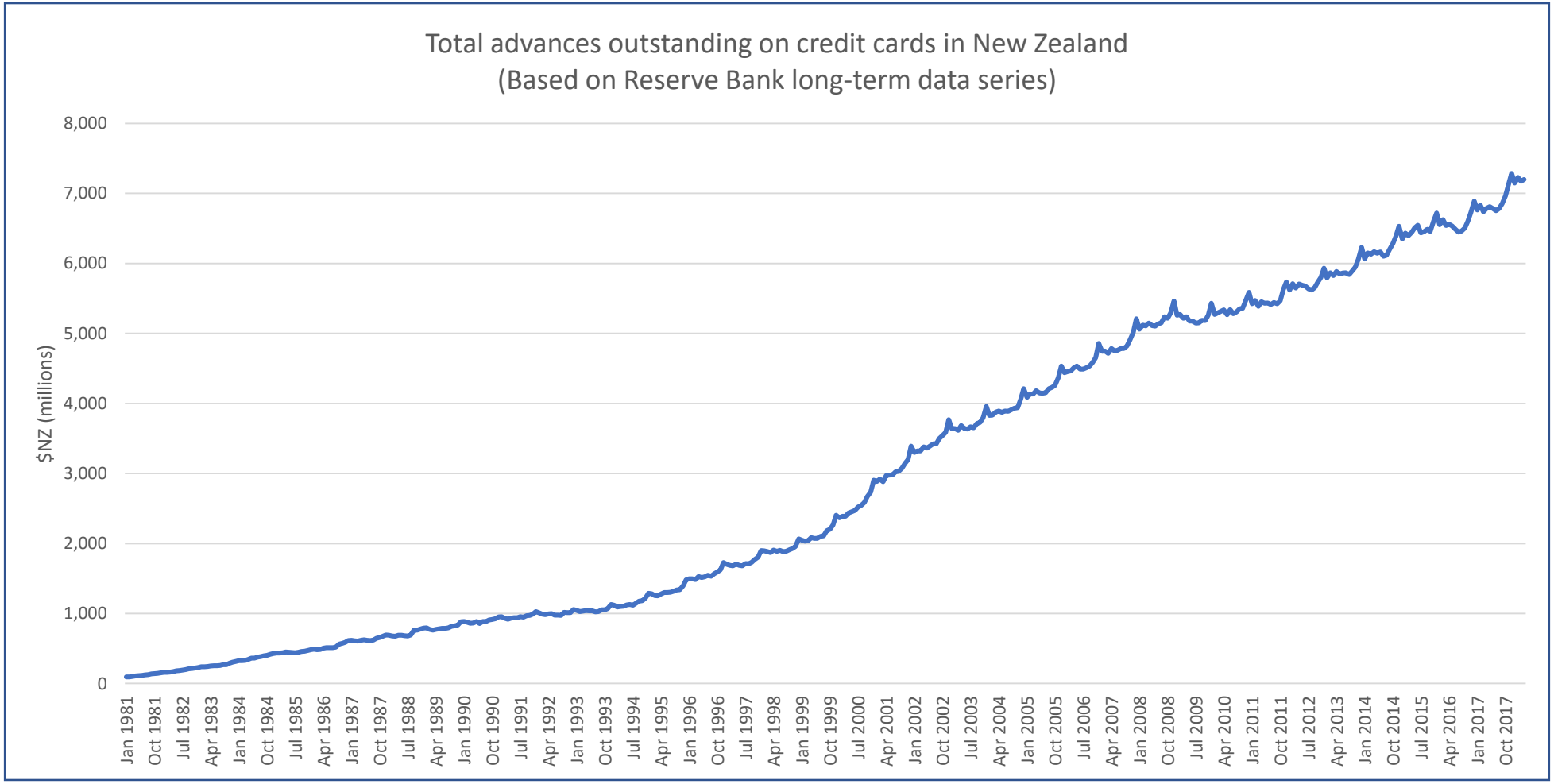
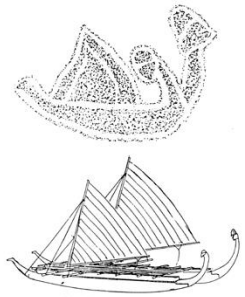
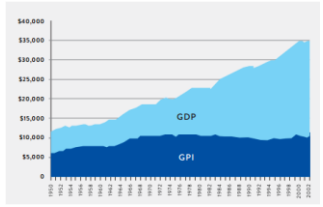
Apr 1998
Jan 1999
Oct 1999
Jul 2000
Apr 2001
Jan 2002
Oct 2002
Jul 2003
Apr 2004
Jan 2005
Oct 2005
Jul 2006
Apr 2007
Jan 2008
Oct 2008
Jul 2009
Apr 2010
Jan 2011
Oct 2011
Jul 2012
Apr 2013
Jan 2014
Oct 2014
Jul 2015
Apr 2016
Jan 2017
Oct 2017

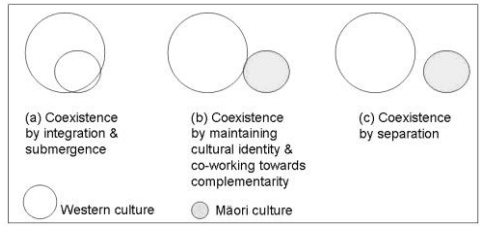

Total advances outstanding on credit cards in New Zealand
(Based on Reserve Bank long-term data series)
$NZ (millions)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan 1981
Oct 1981
Jul 1982
Apr 1983
Jan 1984
Oct 1984
Jul 1985
Apr 1986
Jan 1987
Oct 1987
Jul 1988
Apr 1989
Jan 1990
Oct 1990
Jul 1991
Apr 1992
Jan 1993
Oct 1993
Jul 1994
Apr 1995
Jan 1996
Oct 1996
Jul 1997
Apr 1998
Jan 1999
Oct 1999
Jul 2000
Apr 2001
Jan 2002
Oct 2002
Jul 2003
Apr 2004
Jan 2005
Oct 2005
Jul 2006
Apr 2007
Jan 2008
Oct 2008
Jul 2009
Apr 2010
Jan 2011
Oct 2011
Jul 2012
Apr 2013
Jan 2014
Oct 2014
Jul 2015
Apr 2016
Jan 2017
Oct 2017

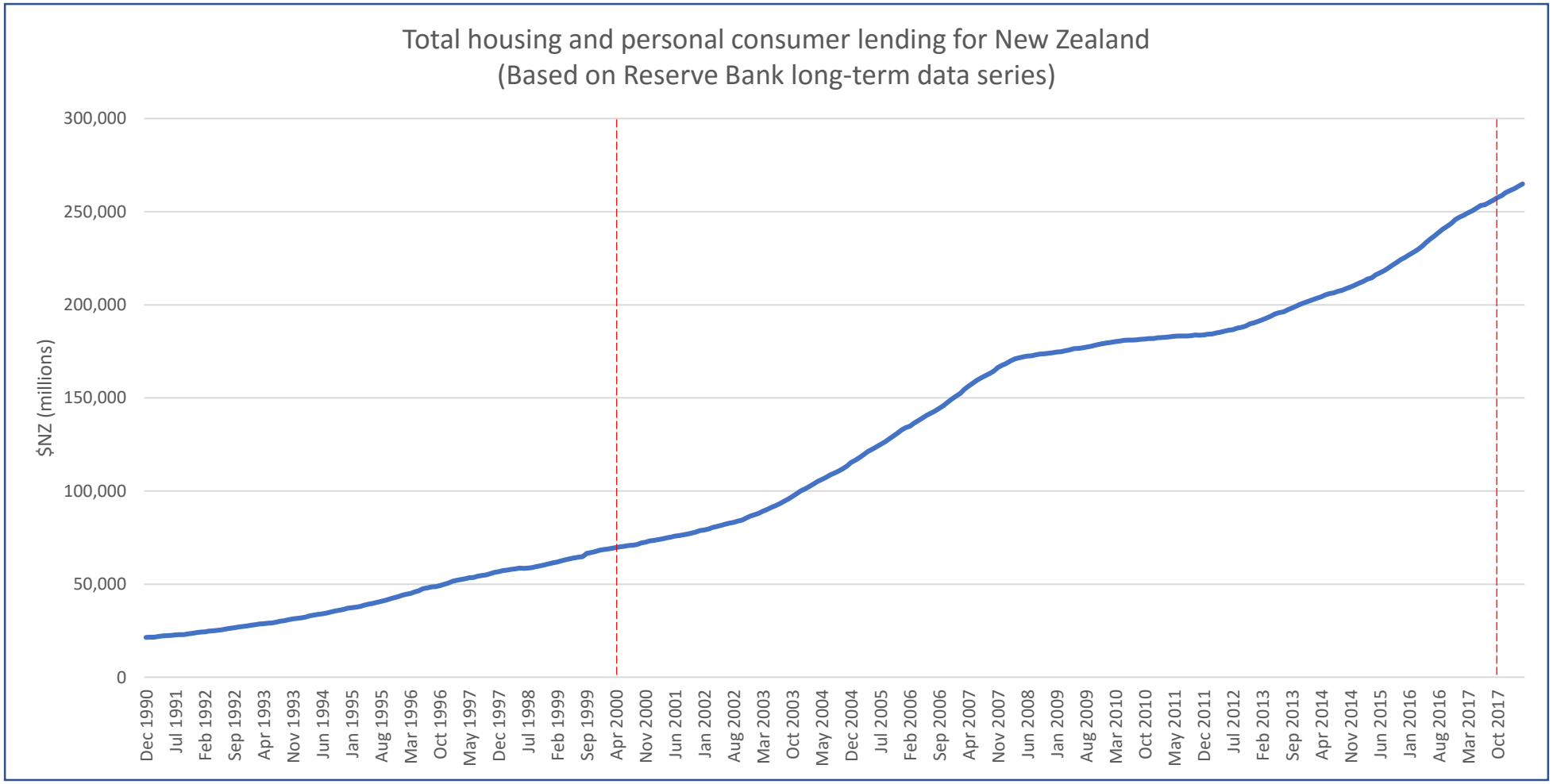
# Coping strategy #4

## The housing market





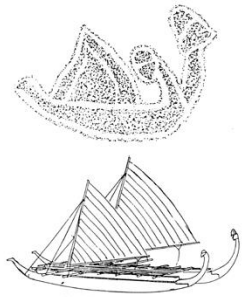



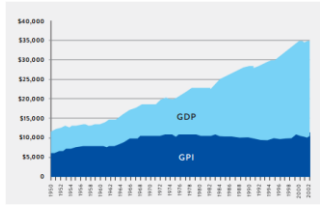


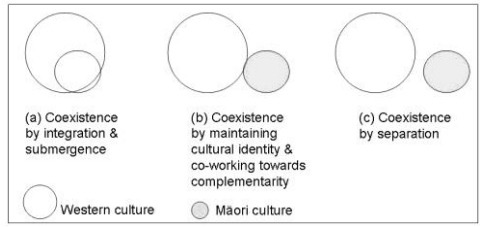

NZ GDP (2016) $251,767

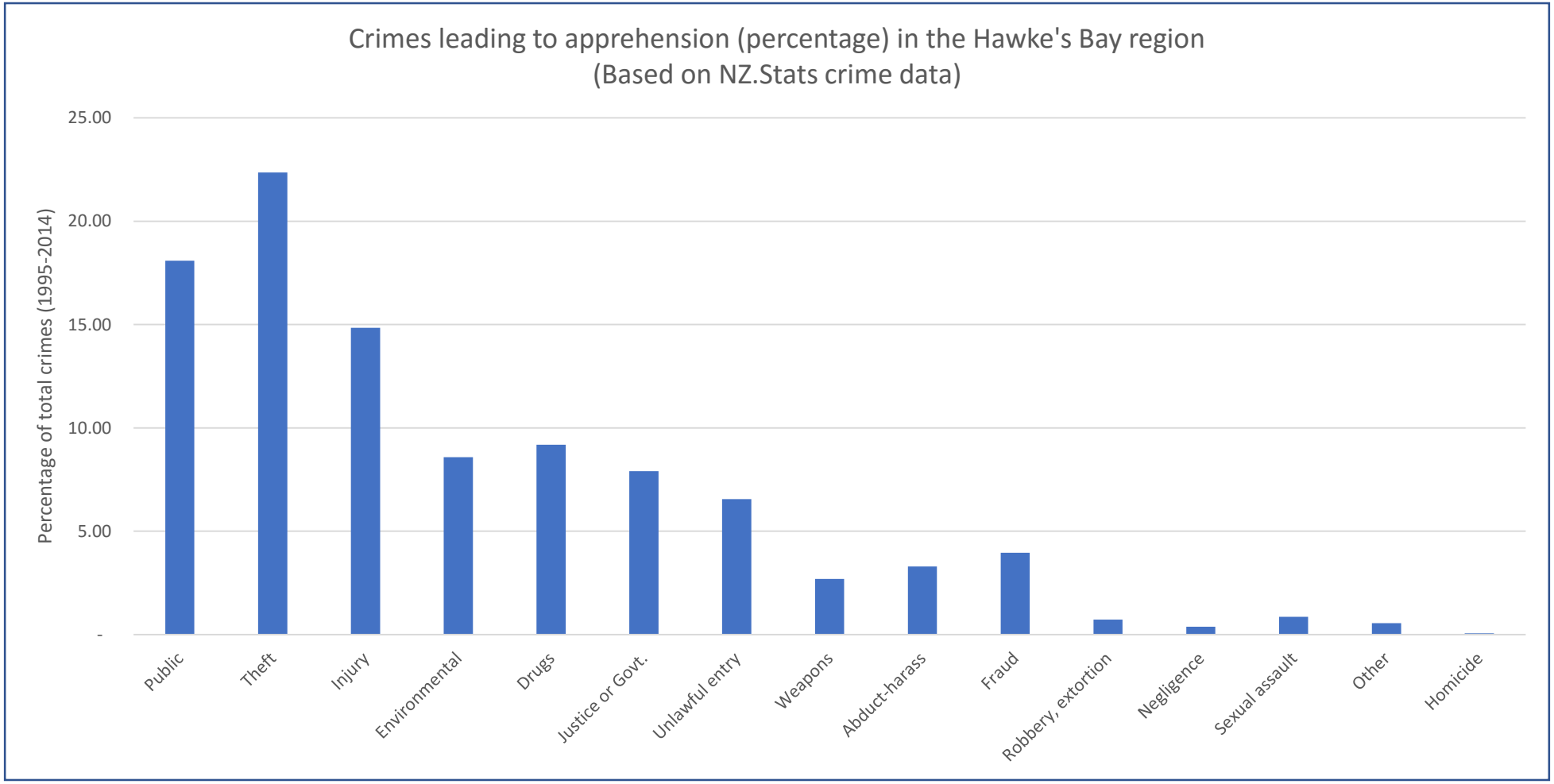
# Coping strategy #6

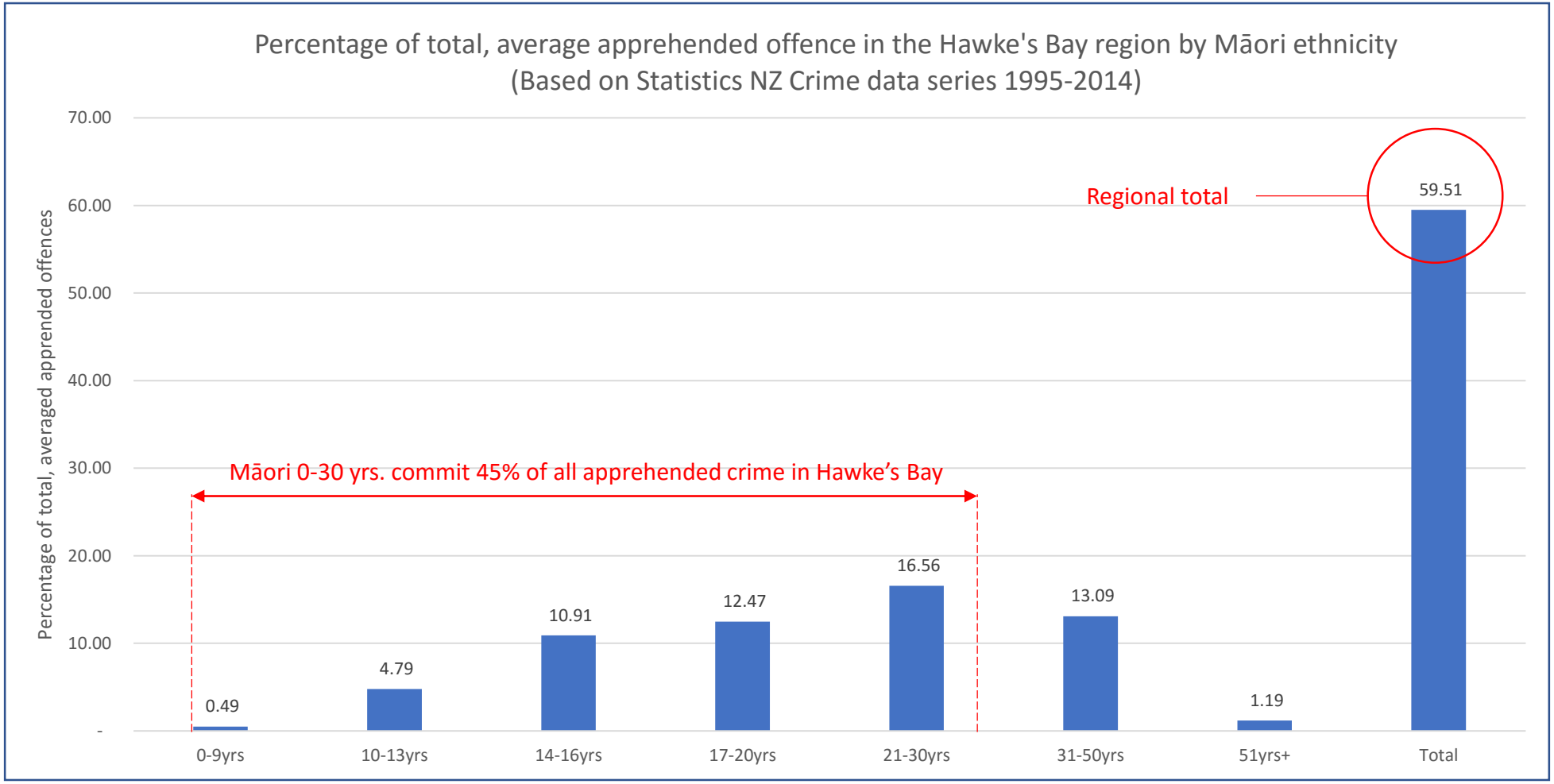
Crime, addictive behaviour, domestic violence, suicide …






Crimes leading to apprehension (percentage) in the Hawke's Bay region
(Based on NZ.Stats crime data)
Percentage of total crimes (1995-2014)
25.00
20.00
15.00
10.00
5.00
-
Public
Theft
Injury
Environmental
Drugs
Justice or Govt.
Unlawful entry
Weapons
Abduct-harass
Fraud
Robbery, extortion
Negligence
Sexual assault
Other
Homicide

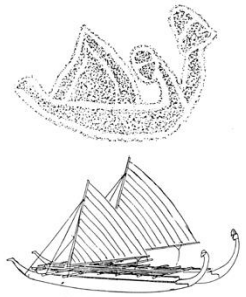

Percentage of total, average apprehended offence in the Hawke's Bay region by Māori ethnicity
(Based on Statistics NZ Crime data series 1995-2014)
Percentage of total, averaged apprended offences
70.00
60.00
50.00
40.00
30.00
20.00
10.00
-
Māori 0-30 yrs. commit 45% of all apprehended crime in Hawke's Bay
Regional total
0.49
4.79
10.91
12.47
16.56
13.09
1.19
59.51
0-9yrs
10-13yrs
14-16yrs
17-20yrs
21-30yrs
31-50yrs
51yrs+
Total

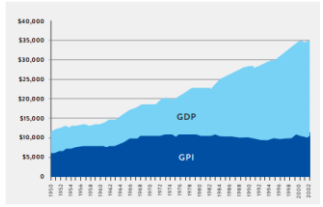
# We could also look at Māori …

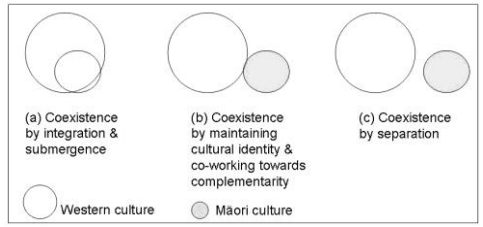
- Drug use (addition)
- Obesity/diabetes
- Domestic violence
- Suicide
- Educational achievement
- Labour market participation
- Mental health
- Homelessness
- Debt …

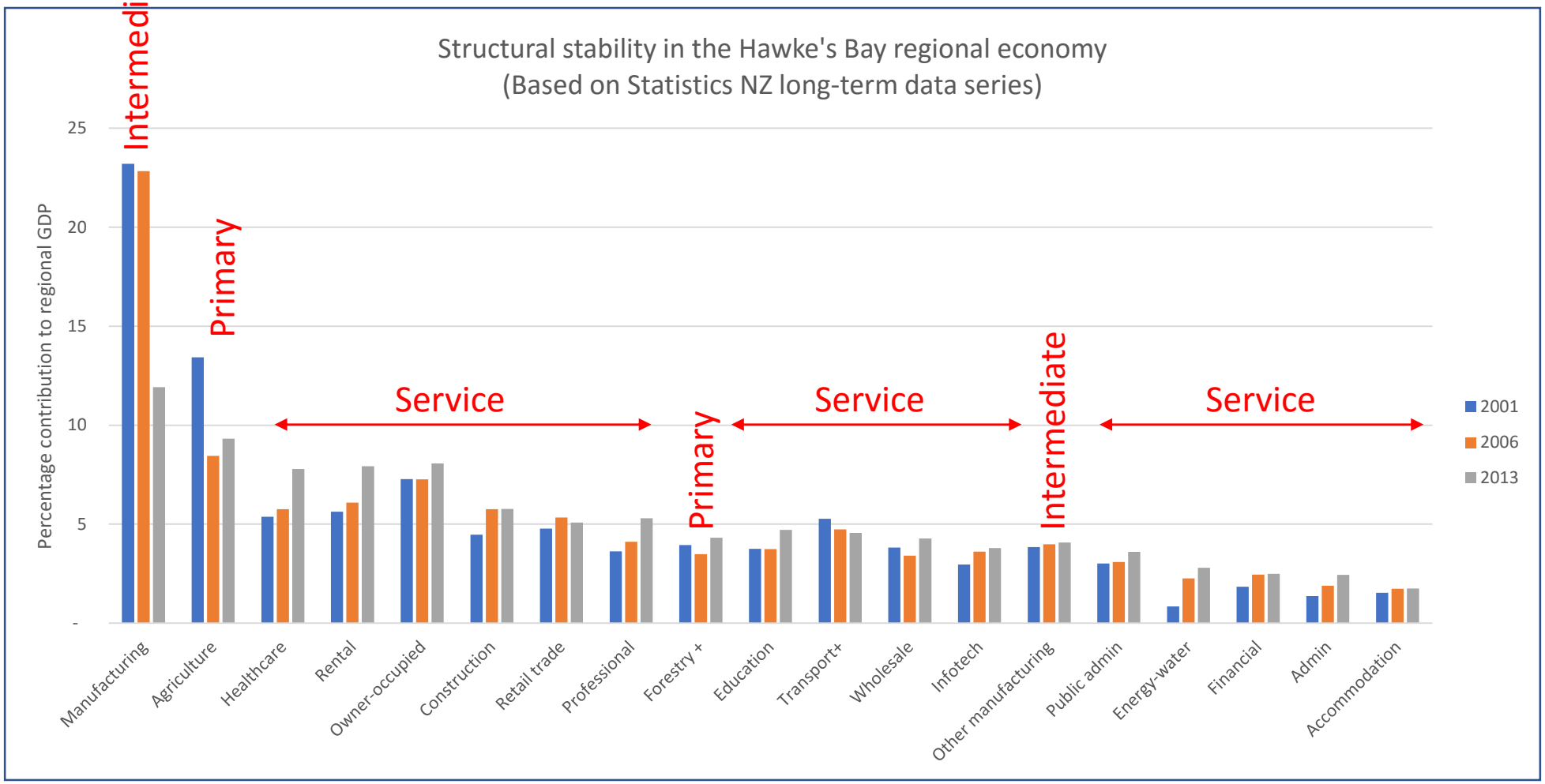
# The Hawke’s Bay economy

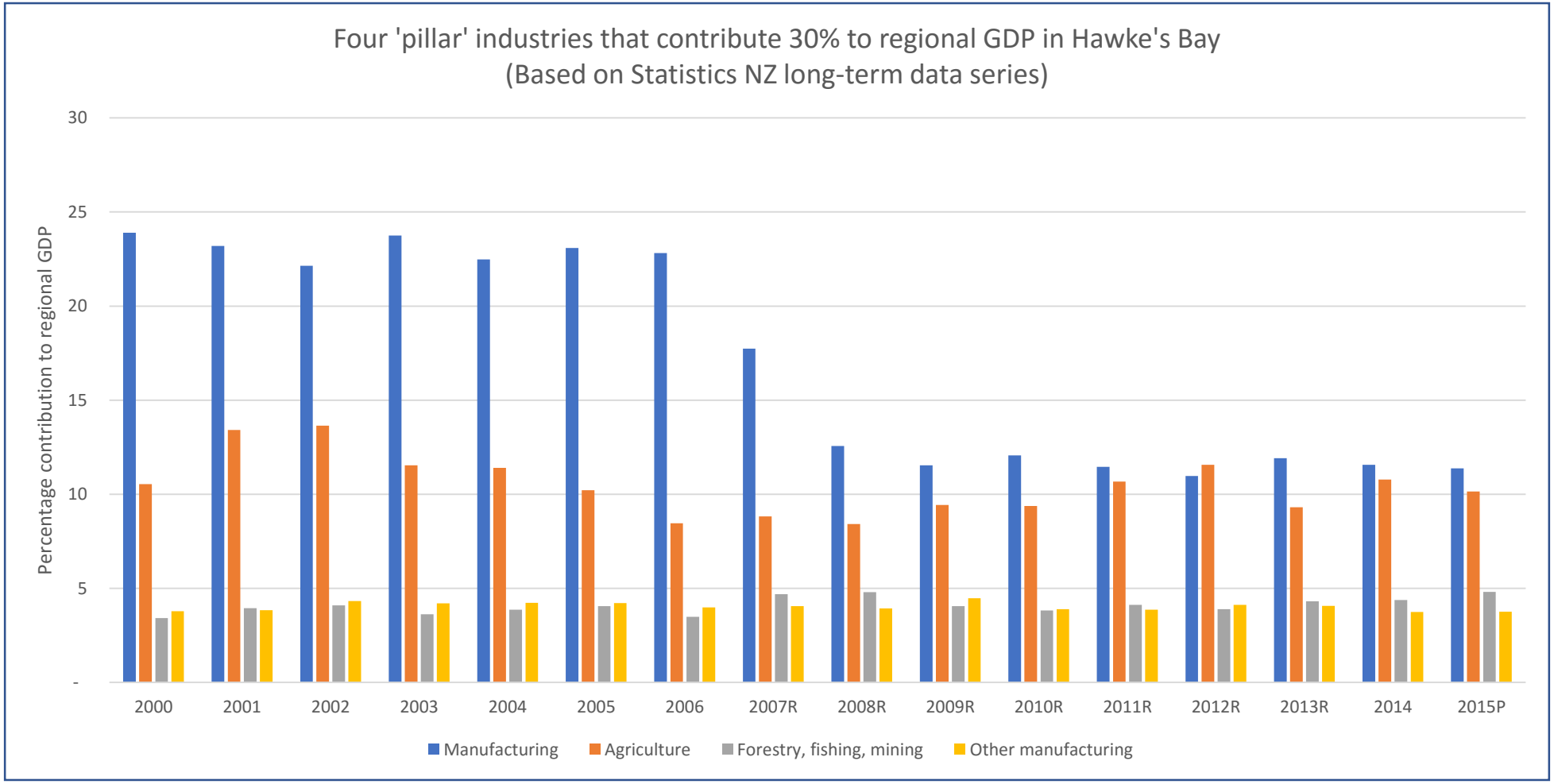
## Tank catchments (2006-2013)

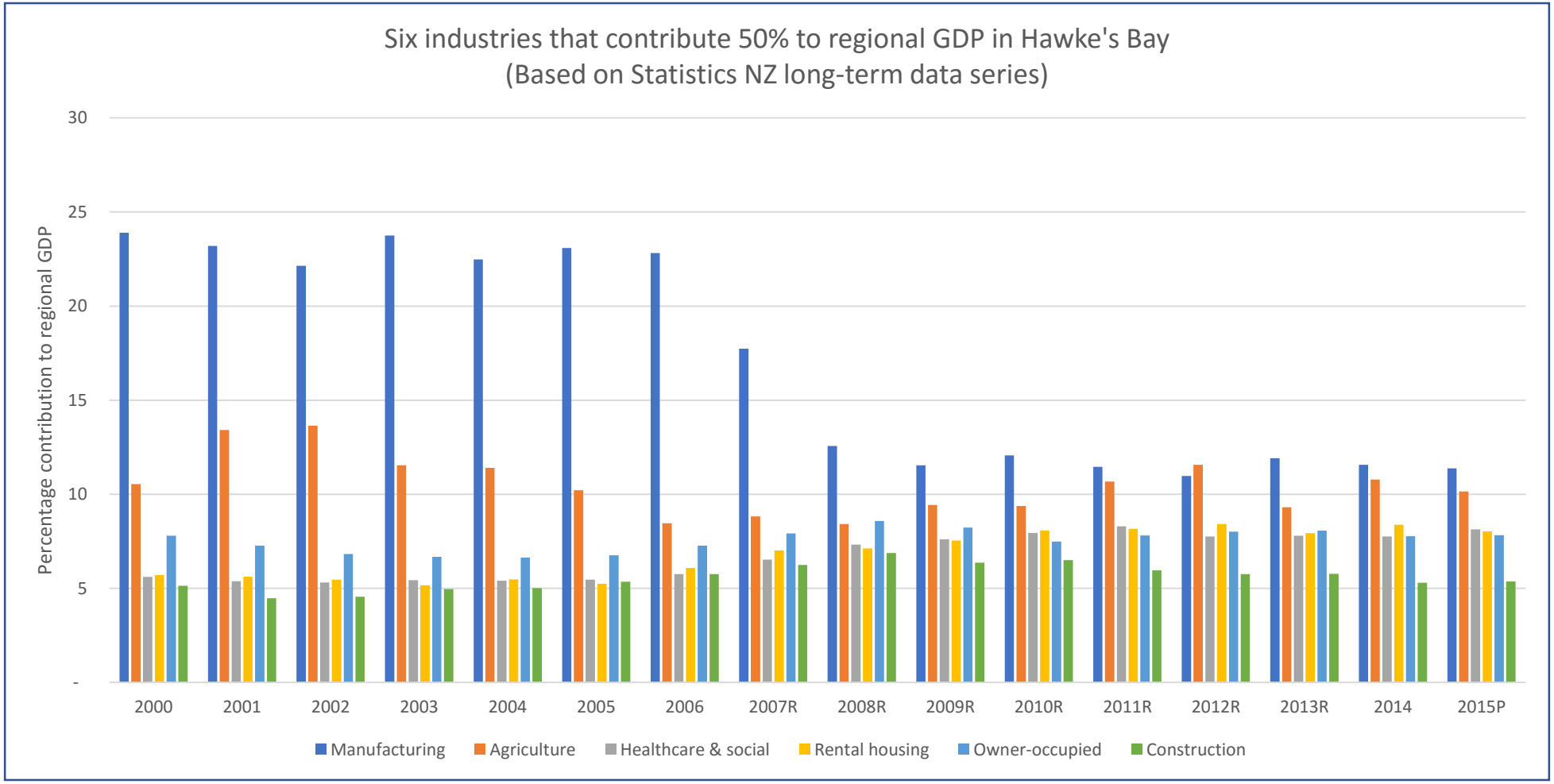





Structural stability in the Hawke's Bay regional economy
(Based on Statistics NZ long-term data series)
Percentage contribution to regional GDP
25
20
15
10
5
-
Intermediate
Primary
Service
Primary
Service
Intermediate
Service
2001
2006
2013
Manufacturing
Agriculture
Healthcare
Rental
Owner-occupied
Construction
Retail trade
Professional
Forestry +
Education
Transport+
Wholesale
Infotech
Other manufacturing
Public admin
Energy-water
Financial
Admin
Accommodation


Four 'pillar' industries that contribute 30% to regional GDP in Hawke's Bay
(Based on Statistics NZ long-term data series)
Percentage contribution to regional GDP
30
25
20
15
10
5
-
2000
2001
2002
2003
2004
2005
2006
2007R
2008R
2009R
2010R
2011R
2012R
2013R
2014
2015P
Manufacturing
Agriculture
Forestry, fishing, mining
Other manufacturing


Six industries that contribute 50% to regional GDP in Hawke's Bay
(Based on Statistics NZ long-term data series)
Percentage contribution to regional GDP
30
25
20
15
10
5
-
2000
2001
2002
2003
2004
2005
2006
2007R
2008R
2009R
2010R
2011R
2012R
2013R
2014
2015P
Manufacturing
Agriculture
Healthcare & social
Rental housing
Owner-occupied
Construction

# Surviving globalisation

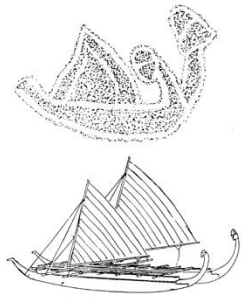
- **Business in a global marketplace** – agile, adaptive, creative, responsive, evidential (i.e. research-based), accountable (i.e. branding), socially fair, ecologically sustainable, resilient and forward looking (i.e. anticipating market shifts, disruptive events)

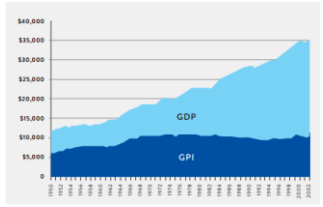
# The Hawke's Bay economy

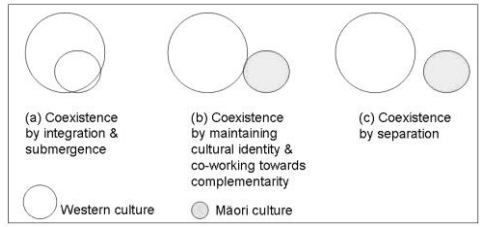
- Worked in the past, but now faces some real challenges
  - Income inequality
  - Ecosystem harm (ecologically unsustainable)
  - Ongoing Māori cultural wellbeing and survival decline
  - High welfare dependency
  - Debt reduction (i.e. economic growth is now water limited)
  - Fragile (dependency on 2-4 key sectors)
  - Ageing/sub-replacement population
  - Mobile population (high turnover) …

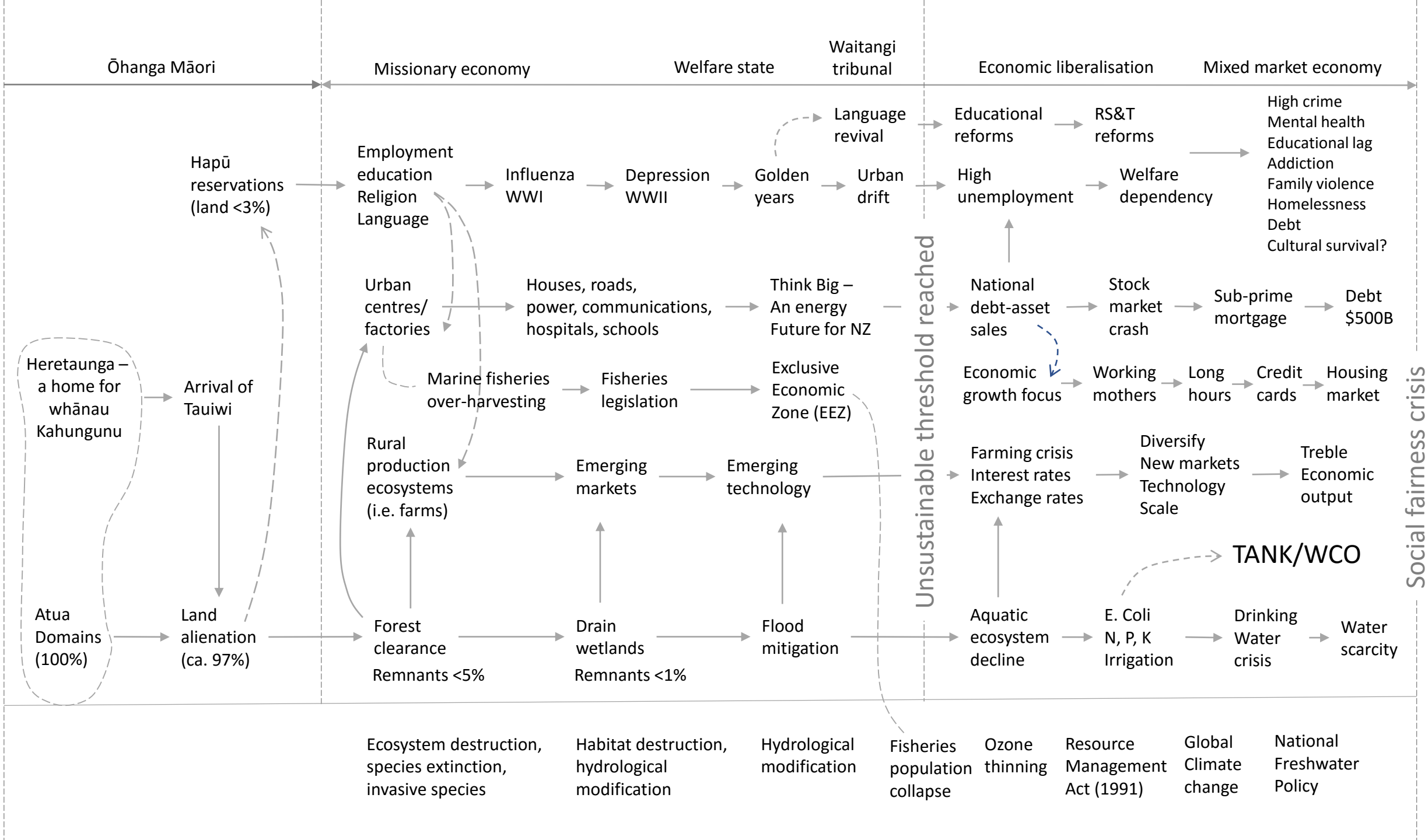
# The Hawke’s Bay economy

## Income inequality and social fairness






Ōhanga Māori
Missionary economy
Welfare state
Waitangi tribunal
Economic liberalisation
Mixed market economy
Hapū reservations (land <3%)
Employment education Religion Language
Influenza WWI
Depression WWII
Golden years
Language revival
Urban drift
Educational reforms
RS&T reforms
High unemployment
Welfare dependency
High crime
Mental health
Educational lag
Addiction
Family violence
Homelessness
Debt
Cultural survival?
Urban centres/ factories
Houses, roads, power, communications, hospitals, schools
Think Big – An energy Future for NZ
National debt-asset sales
Stock market crash
Sub-prime mortgage
Debt $500B
Heretaunga – a home for whānau Kahungunu
Arrival of Tauiwi
Marine fisheries over-harvesting
Fisheries legislation
Exclusive Economic Zone (EEZ)
Economic growth focus
Working mothers
Long hours
Credit cards
Housing market
Rural production ecosystems (i.e. farms)
Emerging markets
Emerging technology
Farming crisis Interest rates Exchange rates
Diversify New markets Technology Scale
Treble Economic output
TANK/WCO
Atua Domains (100%)
Land alienation (ca. 97%)
Forest clearance
Remnants <5%
Drain wetlands
Remnants <1%
Flood mitigation
Aquatic ecosystem decline
E. Coli N, P, K Irrigation
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Water scarcity
Unsustainable threshold reached
Social fairness crisis
Ecosystem destruction, species extinction, invasive species
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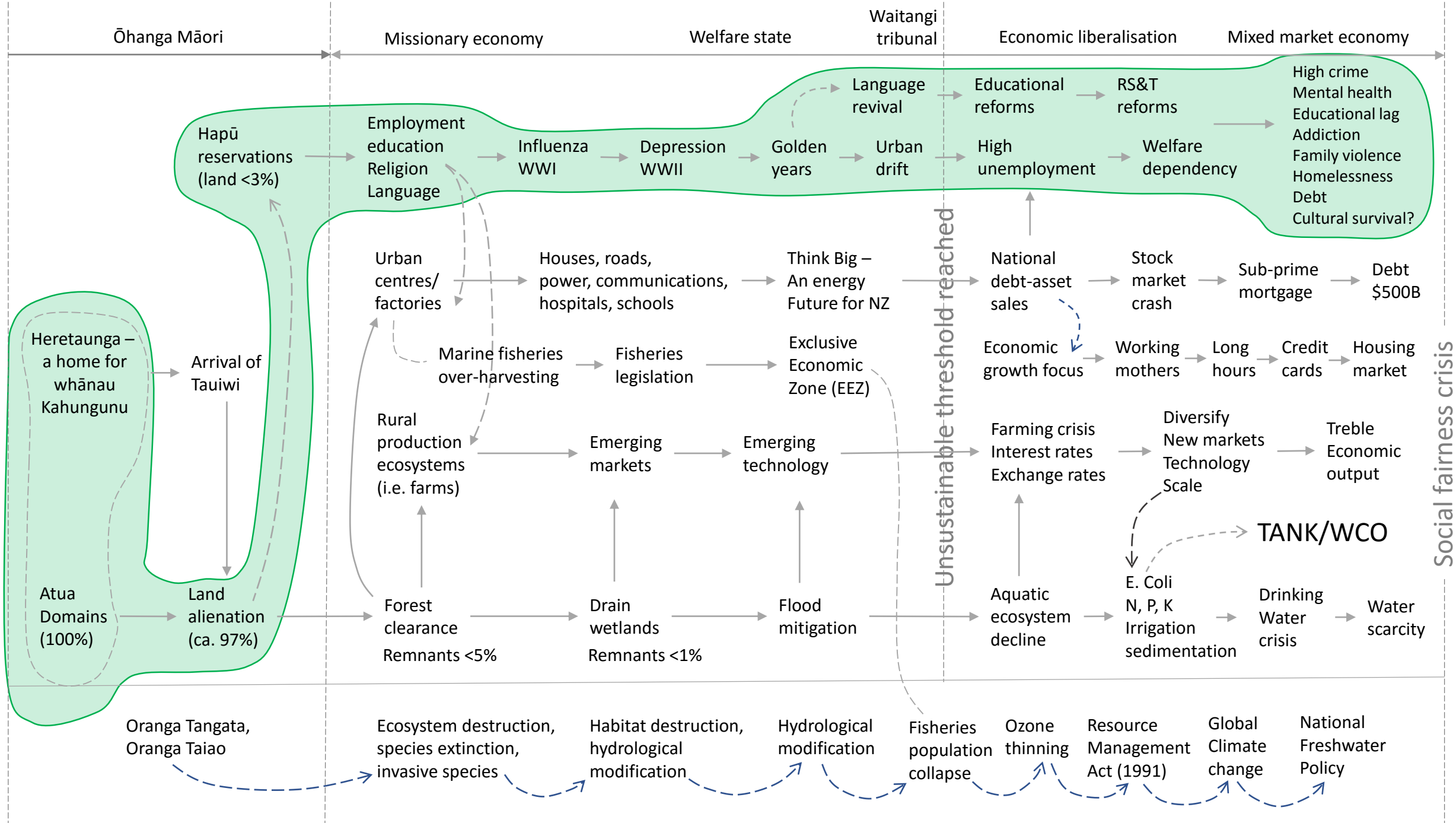
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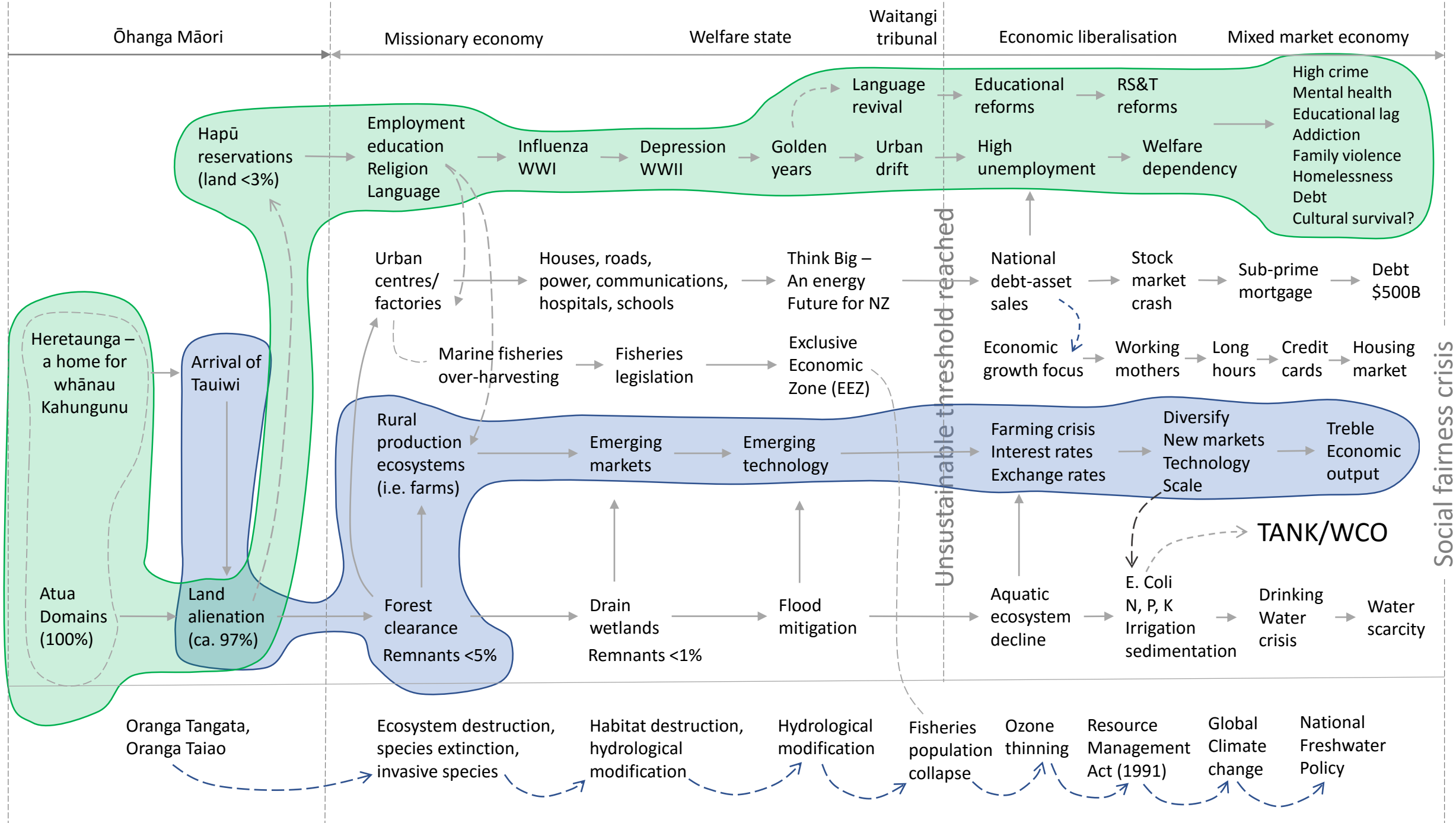
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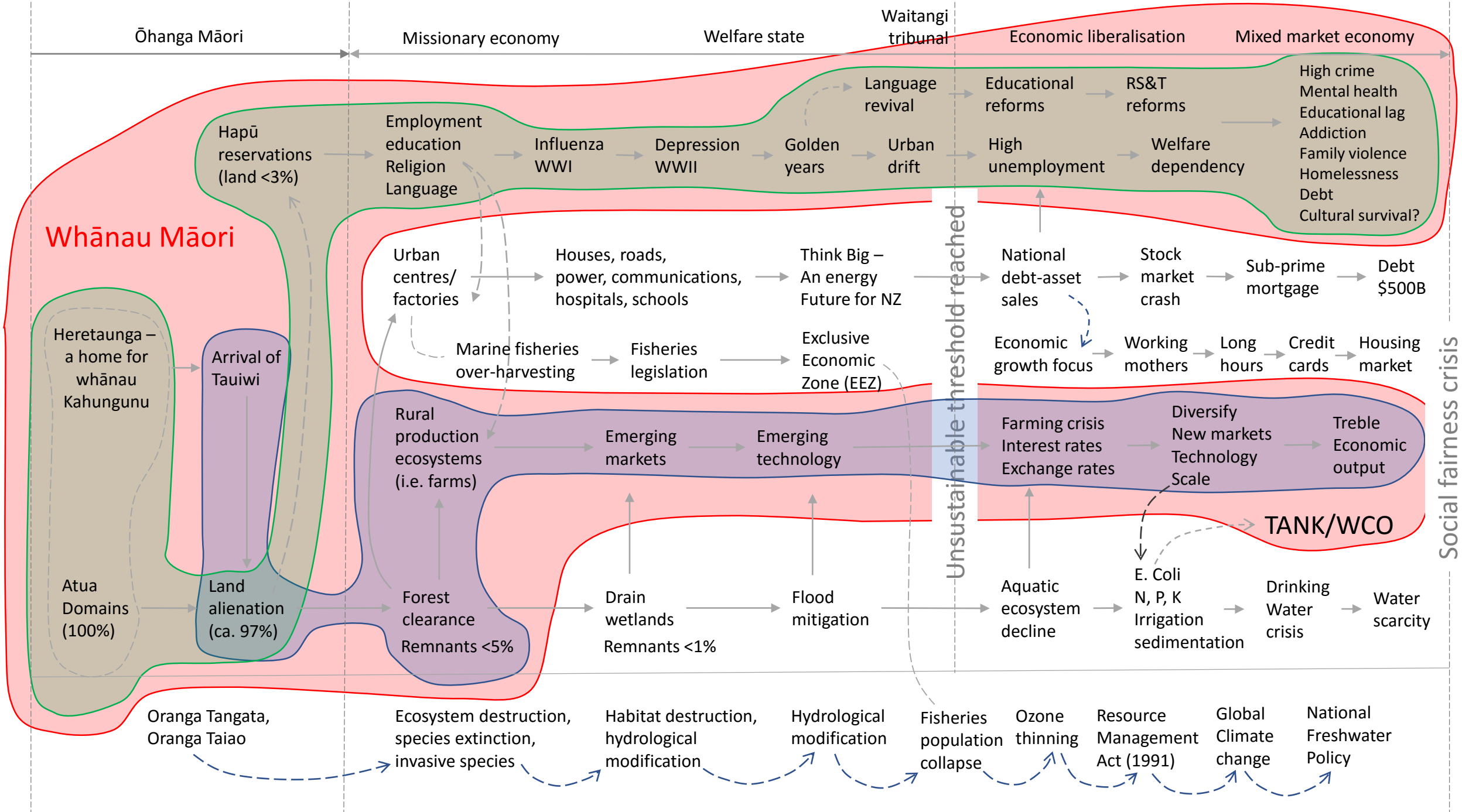
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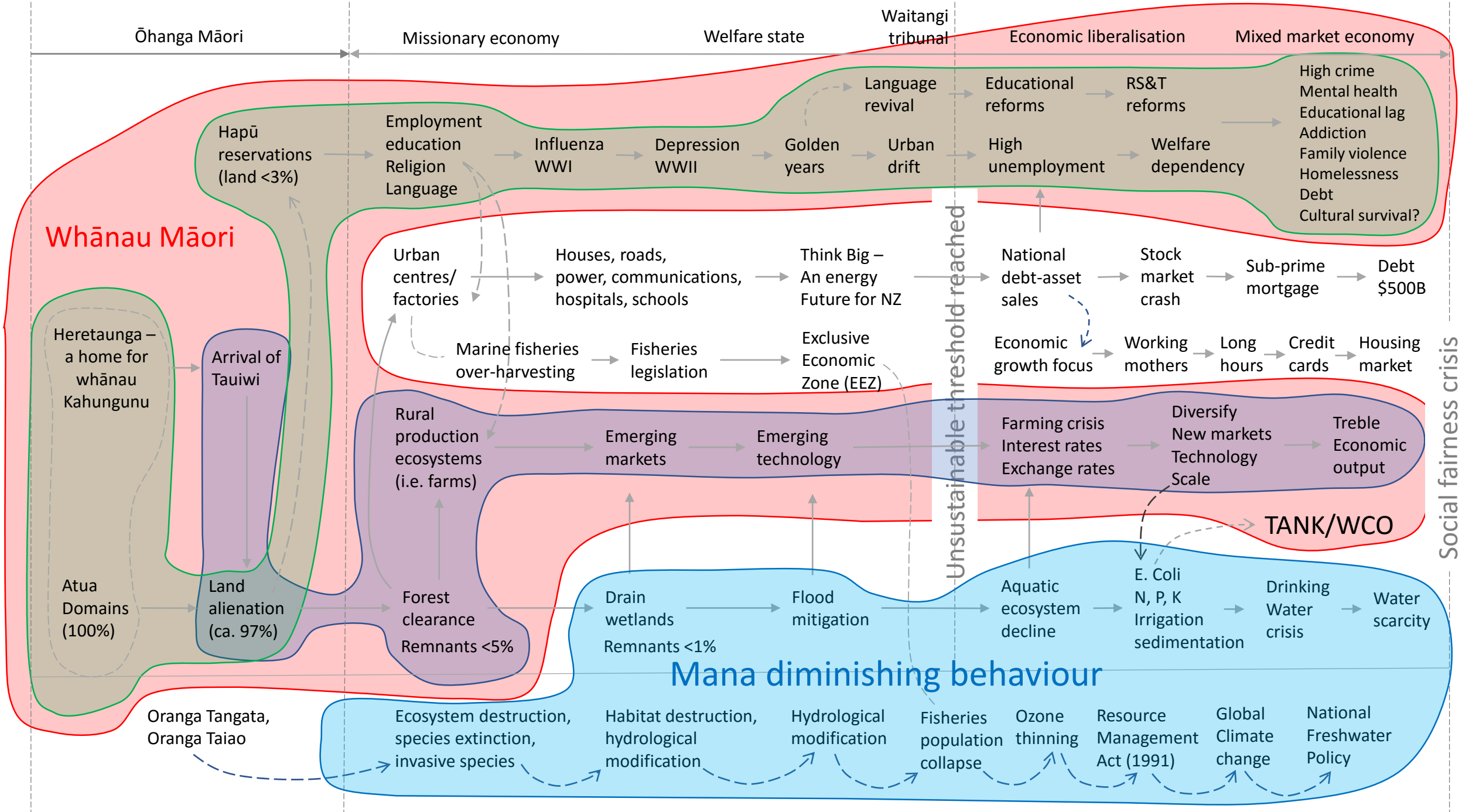
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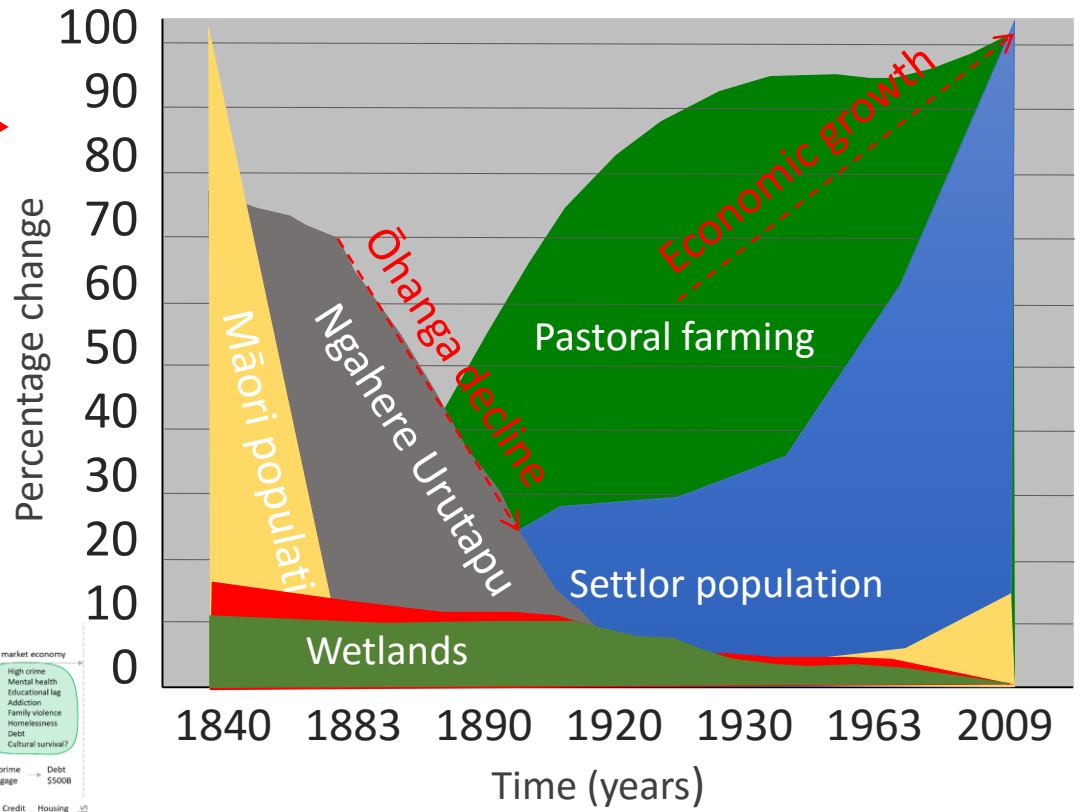
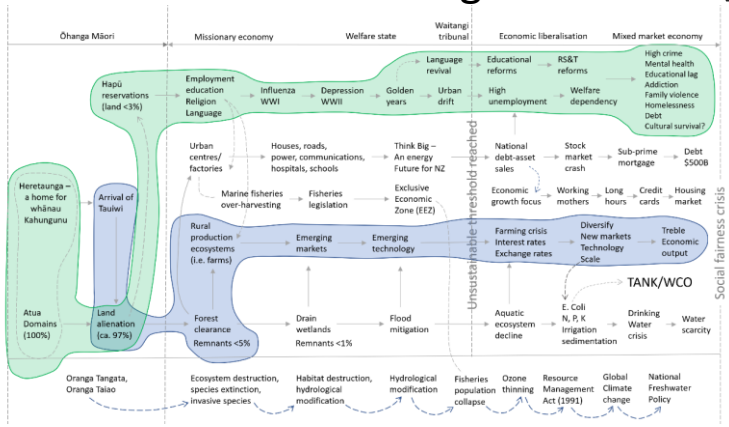
# Manawatū and Horowhenua (1840–2009)

Striking similarity

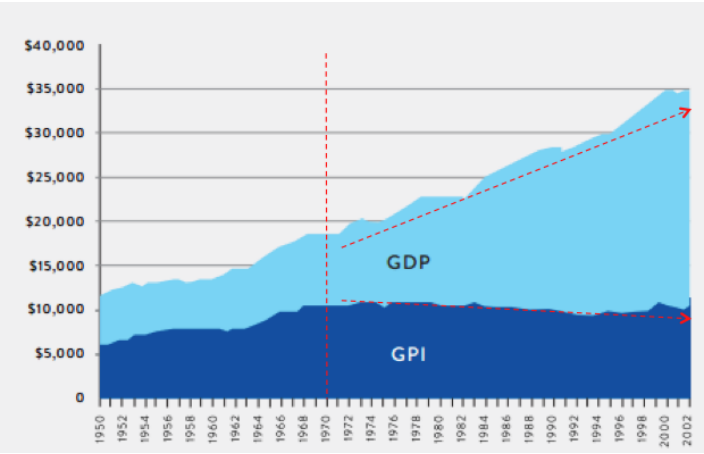



Striking similarity

Whānau Kahungunu




GDP/GDI for the US economy



# Social fairness

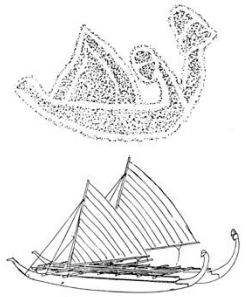
- **Inter-generational fairness -** land alienation means the current generation have been deprived of access to te whānau o Rangi rāua ko Papatūānuku within the rohe of whānau kahungunu ki te Heretaunga. This has diminished opportunities for their cultural wellbeing and survival
- **Intra-generational fairness –** the regional economy has failed to allocate and distribute the financial resources, jobs, homes and basic wellbeing means needed for whānau kahungunu ki te Heretaunga to achieve shared community wellbeing and cultural survival. This situation has been exacerbated by ecosystem decline and growing income inequality

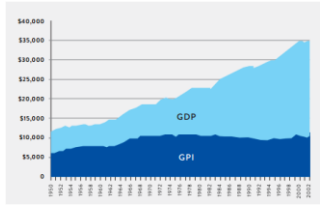
# Social fairness and the TANK plan

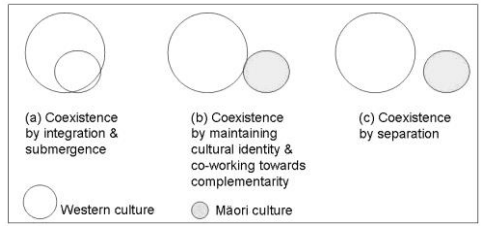
- Tangata Whenua are now faced with a choice between (a) Māori community wellbeing or (b) ecological (i.e. Atua Māori) wellbeing
- This is a choice that whānau Māori should never be asked to make because is concerns the goal of their cultural survival and cultural survival is a *non-negotiable* aspiration

# SCIA findings

## and recommendations





# Findings of this SCIA

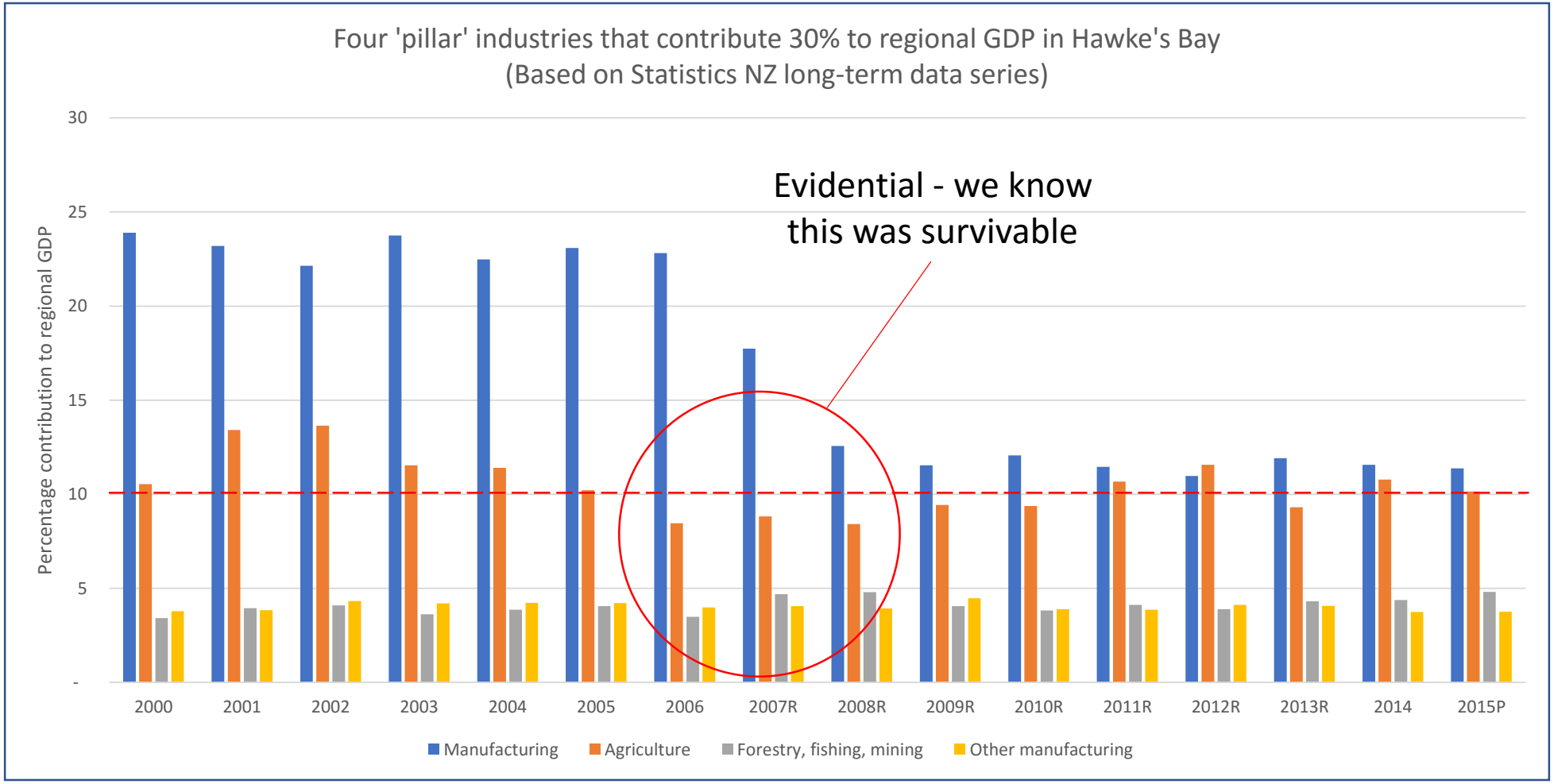
- The implementation of the current draft TANK plan will result in flows of ecological, social and cultural benefits to TANK communities
- However, there is a high likelihood that TANK plan adoption of minimum flow regimes evaluated by AgFirst, Nimmo Bell and MEL will cause social/cultural and financial harm to some (area unit) communities in the TANK catchments. In particular,
  - TANK catchment communities characterised by high levels of welfare dependency will be at risk
  - TANK catchment communities characterised by high levels of Māori population ethnicity will be at risk

# Recommendations

- That the TANK plan proceed to schedule 1 notification while taking specific regard to the following:

  (a) That the setting of a minimum flow regime and the creation of a long-term implementation plan for the achievement of this regime be undertaken in a way that appropriately responds to the economic, social and cultural *vulnerability* of all TANK catchment communities

  (b) That the implementation of the TANK plan avoids, remedies or mitigates any decline in regional GDP *exceeding 3 years*


Four 'pillar' industries that contribute 30% to regional GDP in Hawke's Bay
(Based on Statistics NZ long-term data series)
Evidential - we know this was survivable
Percentage contribution to regional GDP
30
25
20
15
10
5
-
2000
2001
2002
2003
2004
2005
2006
2007R
2008R
2009R
2010R
2011R
2012R
2013R
2014
2015P
Manufacturing
Agriculture
Forestry, fishing, mining
Other manufacturing

# Recommendations

(c) An implementation of the TANK plan be supported by a regional-scale economic development plan aimed at aggressively growing regional GDP with a focus on low-wage earners / unemployment / social business growth

(d) There is an urgent need for a conversation on the subject of social fairness relating to RMA 1991, part 2, section 5(a)

- Inter-generational sharing of wealth (past and future)
- Intra-generational sharing of wealth (now)

# Recommendations

(e) There is an urgent need for a conversation on the matter of Māori cultural survival

# The End

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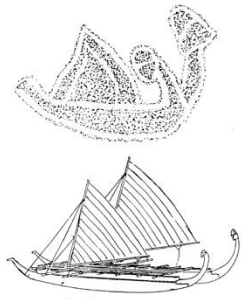

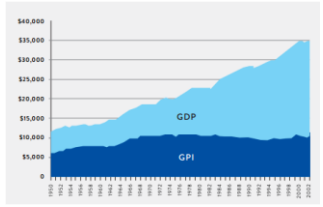


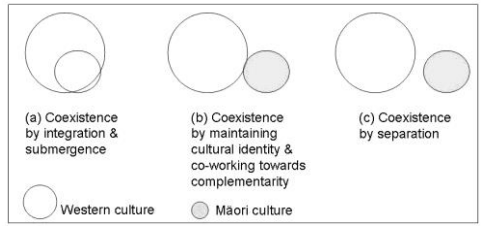

## NZ's net external debt

| *As at March 31* | 2015 | 2014 | 2013 | 2010 | 2005 | 2001 |
|---|---|---|---|---|---|---|
| **External debt** | | | | | | |
| Government | $54.9b | $47.8b | $54.7b | $23.6b | $16.0b | $16.7b |
| Banks | $117.9b | $110.7b | $114.9b | $133.9b | $91.0b | $55.2b |
| Inter-company | $44.9b | $48.6b | $48.4b | $51.2b | $36.6b | $26.3b |
| Other | $29.4b | $25.7b | $24.4b | $24.2b | $20.6b | $27.0b |
| **Gross external debt** | $247.2b | $232.8b | $242.4b | $232.9b | $164.2b | $125.2b |
| **Gross external lending** | $108.2b | $93.0b | $96.3b | $77.1b | $64.2b | $49.0b |
| **Net external debt** | $138.9b | $139.8b | $146.1b | $155.7b | $100.0b | $76.2b |

Herald graphic