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

<table>
<thead>
<tr>
<th>Time</th>
<th>Cost</th>
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<tr>
<td>Long time</td>
<td>High</td>
</tr>
<tr>
<td>Adaptive</td>
<td>Medium-high</td>
</tr>
<tr>
<td>Quick</td>
<td>Low</td>
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- **Legally defensible**
- **Management decision-making**
- **Scoping/rapid assessment**
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

Plan objectives

Implement

Adaptive management

Enhanced Aquatic ecosystems

Costs and benefits
Section 32 (economic evaluation)
Section 32 (social and cultural assessment)

Plan objectives

Social and cultural assessment

Enhanced Aquatic ecosystems

Adaptive management

Implement

AgFirst Nimmo Bell MEL

Costs and benefits

Ability of the community to bare the cost of implementation
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)
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)

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)
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 age structure of two TANK catchments
(Based on Statistics NZ Census 2013 data)
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)
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 Tangaroa Rongo Haumia Urutengangana Ruaumoko

Mahuta Tiketike

Hine-ahu-one ------ Tāne

Hime Titama Hine-nui-te-po

\[\ldots\]

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

65%

94%

96%

99%
TANK (indigenous forest)

pre-1840

65%

94%

96%

99%

2012

0.5%

0.4%

23%

6.7%
TANK (wetlands)

pre-1840

34%

5.2%

5.9%

3.4%
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

<table>
<thead>
<tr>
<th>Income Level</th>
<th>2006</th>
<th>2013</th>
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<tr>
<td>&lt;$50,000</td>
<td>46</td>
<td>40</td>
</tr>
<tr>
<td>&gt;$50,000</td>
<td>54</td>
<td>60</td>
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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.)

No source of income
One source
2-6 sources

2001 2006 2013

2001 2006 2013

No source of income
One source
2-6 sources

Population number (>15 yrs.)
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

- Wages/salary
- Self-employment
- Interest dividends, rent, invest.
- Accident insurance
- NZ super or pension
- Other super, pension
- Unemployment benefit
- Sickness benefit
- Domestic purposes
- Invalid benefit
- Student allowance
- Govt benefits
- Other income
- No income

Sources of family income in the Karamu catchment
(Based on Statistics NZ Census data)

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
- Invalid benefit
- Student allowance
- Govt benefits
- Other income
- No income

Percentage of total Census response

2001 2006 2013
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
Total net worth of top 10 per cent vs bottom 10 per cent

Source: Statistics New Zealand
What is a Gini co-efficient?

Gini co-efficient plot for the Ahuriri catchment
(Based on Statistics NZ household income data 2013)
Income inequality in New Zealand
(Based on NZIER long-term data series)
Income inequality by TANK catchment
(Based on Statistics NZ Census data)

Gini co-efficient (estimate)

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

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

The top 1%

The bottom 50%
The top 1%

... and when wealth accumulation harms the environment,
The top 1%

... and leads to unchecked cultural wellbeing decline and **extinction**

The indigenous inhabitants of this land had a wise saying - "Every time you take something from the Earth, you must give something back."

**How about a compromise? We keep the land, the mineral rights, natural resources, fishing, and timber, and we'll acknowledge you as the traditional owners of it.**
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 world's 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
   - Reclains
   - 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)
Measurement of Gross Domestic Product

- Involves a national accounting *blind spot*
- GDP counts all final goods and services
- This means that ...
... are good for GDP

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

- 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 capita (1950–2002) for the USA
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The cost of economic growth

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

An upward trend

A downward trend
The key message of GPI accounting so far ...

More economic growth ≠ more wellbeing
As noted - 2 models of economy in NZ

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NZ mixed market economy

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GDP Growth → Wellbeing decline
Manawatū and Horowhenua

Pre-1840 Ngahere

Pre-1840 kūkūwai

2012 Landcover
Manawatū and Horowhenua (1840–2009)

Percentage change

Time (years)

Settlor population
Manawatū and Horowhenua (1840–2009)
Growth in the settlor economy

Time (years)

Percentage change

Pastoral farming

Settlor population

1840 1883 1890 1920 1930 1963 2009
Manawatū and Horowhenua (1840–2009)
Growth in the settlor economy

Time (years)

Percentage change

Pastoral farming
Settlor population
Manawatū and Horowhenua (1840–2009)
Decline in Te Whānau o Rangi rāua ko Papatūānuku

- Percentage change
- Time (years)

Pastoral farming
Settlor population
Māori population
Manawatū and Horowhenua (1840–2009)
Decline in Te Whānau o Rangi rāua ko Papatūānuku

Pastoral farming

Settlor population

Māori population

Ngāhēre Urutapu

Percentage change

Time (years)

1840   1883   1890   1920   1930   1963   2009
Manawatū and Horowhenua (1840–2009)
Decline in Te Whānau o Rangi rāua ko Papatūānuku

Kūkūwai

Māori population

Ngahere Urutapu

Pastoral farming

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

Pastoral farming
Settlor population
Maori population
Ngahere Urutapu
Wetlands

Time (years)
1840 1883 1890 1920 1930 1963 2009

Percentage change
Manawatū and Horowhenua (1840–2009)

- Settlor population
- Pastoral farming
- Wetlands
- Māori population
- Ngahere Urutapu
- Ohanga Rākira


Percentage change
Manawatū and Horowhenua (1840–2009)

Percentage change

Time (years)

0 10 20 30 40 50 60 70 80 90 100

1840 1883 1890 1920 1930 1963 2009

Settlor population

Pastoral farming

Wetlands

Ohanga decline

Māori population

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)
Annual percentage change (real) in income for New Zealand
(Based on NZIER Data. 1850 long-term data series)

- Liberalisation
- National Debt
- Think Big
- Energy crisis
Why?

6 macro-economic coping strategies
Coping strategy # 1 – currency trading

$9B NZ/US currency sale

20% Devaluation

Sub-prime mortgage
Coping strategy # 2 – free wage bargaining

Trade Union 'density' in New Zealand (1960-2016)
(Based on OECD long-term data series)

- Robert Muldoon PM (1975)
- Employment Contracts Act (1991)
- Employment Relations Act (2000)

Density (Number of Trade Union members/total employees)
Coping strategy # 3 – control inflation

A comparison of annual CPI and Wage index (real) datasets for NZ
(Based on NZIER Data1850 long-term series)

Annual percentage change in CPI and wage index (real) data

Reserve Bank of New Zealand Act 1989
Coping strategy # 4 – state asset sales

The thing is, we'll give them the chance to buy them back. They'll love the idea when they get used to it.

I think Richard, we're gonna have to do something about your sales technique.
Coping strategy # 5 – user pays
Coping strategy # 5 – aggressive debt reduction

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)
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)
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.
Total advances outstanding on credit cards in New Zealand
(Based on Reserve Bank long-term data series)
Coping strategy #4

The housing market
Total housing and personal consumer lending for New Zealand
(Based on Reserve Bank long-term data series)

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)
Māori 0-30 yrs. commit 45% of all apprehended crime in Hawke’s Bay.

Regional total: 59.51%

Percentage of total, average apprehended offence in the Hawke’s Bay region by Māori ethnicity

(Based on Statistics NZ Crime data series 1995-2014)
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)
Four 'pillar' industries that contribute 30% to regional GDP in Hawke's Bay
(Based on Statistics NZ long-term data series)
Six industries that contribute 50% to regional GDP in Hawke’s Bay
(Based on Statistics NZ long-term data series)

- 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
Unsustainable threshold reached

Heretaunga – a home for whānau Kahungunu

Arrival of Tauiwi

Land alienation (ca. 97%)

Ōhanga Māori

Hapū reservations (land <3%)

Atua Domains (100%)

Oranga Tangata, Oranga Taiao

Whānau Māori

Missionary economy

Welfare state

Waitangi tribunal

Economic liberalisation

Mixed market economy

Unsustainable threshold reached

Dysfunction

High crime

Mental health

Educational lag

Addiction

Family violence

Homelessness

Debt

Cultural survival?

Social fairness crisis

Mana diminishing behaviour

Economic liberalisation

Exclusive Economic Zone (EEZ)

Fisheries population collapse

Recession

Depression

WWI

Influenza

WWII

Golden years

Urban drift

Welfare dependency

High unemployment

Sub-prime mortgage

Debt $500B

Economic growth focus

Interest rates

Exchange rates

Farming crisis

National debt

- asset sales

High unemployment

Welfare dependency

High crime

Mental health

Educational lag

Addiction

Family violence

Homelessness

Debt

Cultural survival?

Resource Management Act (1991)

Economic liberalisation

Emerging technology

Diversification

New markets

Scale

Economic growth focus

Treble Economic output

Sub-prime mortgage

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Cultural survival?

Think Big – An energy Future for NZ

Drain wetlands

Flood mitigation

Aquatic ecosystem decline

Irrigation sedimentation

E. Coli

Nutrients

K

Irrigation

Irrigation sedimentation

Drinking water crisis

Water scarcity

Global Climate change

National Freshwater Policy

Diversification

New markets

Scale

Economic growth focus

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Sub-prime mortgage

Debt $500B

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Debt

Cultural survival?

Think Big – An energy Future for NZ

Drain wetlands

Flood mitigation

Aquatic ecosystem decline

Irrigation sedimentation

E. Coli

Nutrients

K

Irrigation

Irrigation sedimentation

Drinking water crisis

Water scarcity

Global Climate change

National Freshwater Policy

Diversification

New markets

Scale

Economic growth focus

Treble Economic output

Sub-prime mortgage

Debt $500B

National debt

- asset sales

High unemployment

Welfare dependency

High crime

Mental health

Educational lag

Addiction

Family violence

Homelessness

Debt

Cultural survival?
Manawatū and Horowhenua (1840–2009)

- Striking similarity
- GDP/GDI for the US economy

Percentage change

Time (years)

1840 1883 1890 1920 1930 1963 2009

Manawatū and Horowhenua (1840–2009)
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 it 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
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

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<tr>
<td>Government</td>
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<td>Other</td>
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<td><strong>$242.4b</strong></td>
<td><strong>$232.9b</strong></td>
<td><strong>$164.2b</strong></td>
<td><strong>$125.2b</strong></td>
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<td>Gross external lending</td>
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Herald graphic