

BrightEconomy

Rotorua

Leading prosperity naturally



Rotorua Economic Growth Opportunities Forum 2006

Rotorua Future Insights Process 2025

Prof Wayne Cartwright

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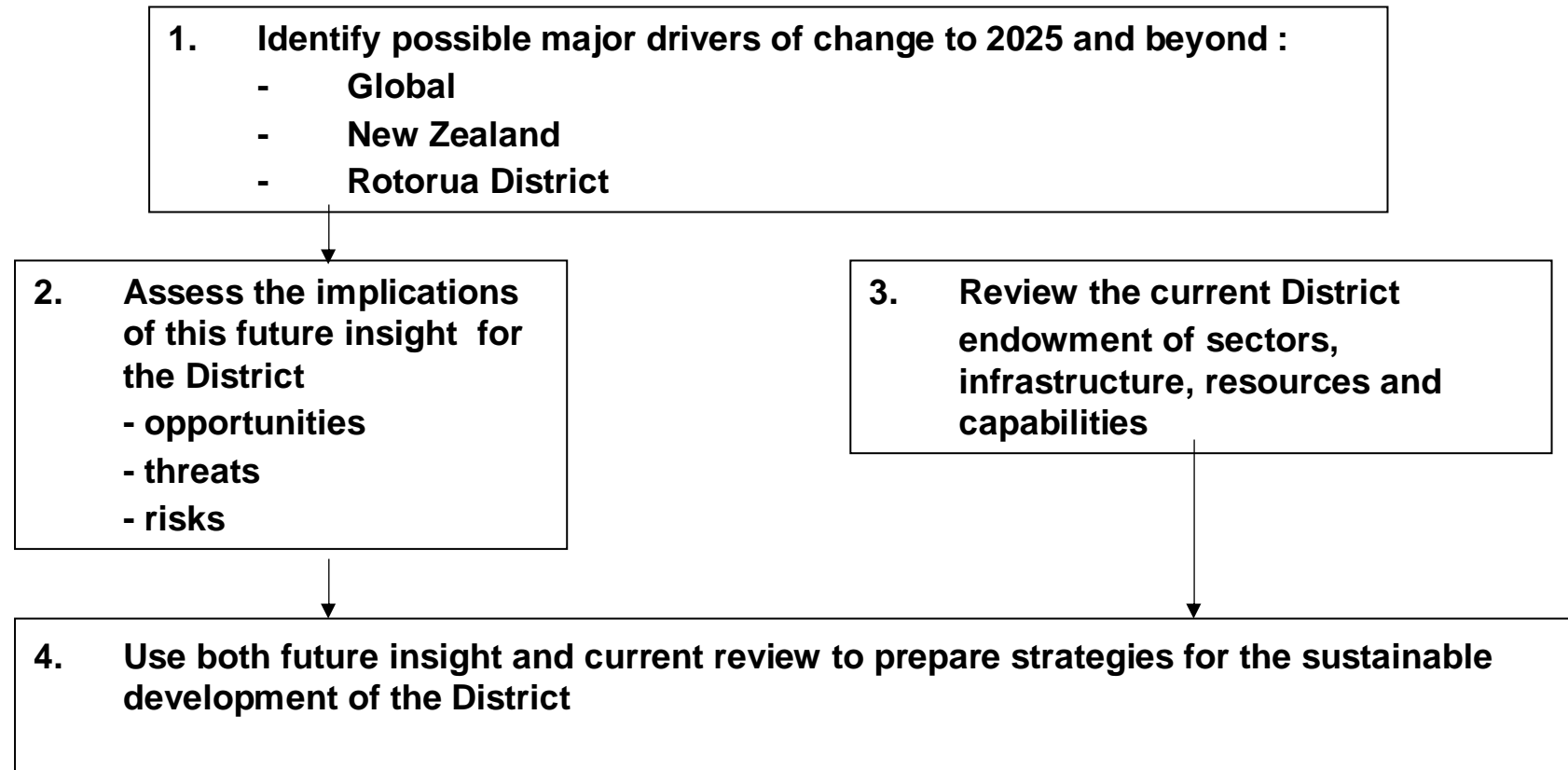


Rotorua Future Insights Process 2025

- **This process was used intensively by the BrightEconomy Advisory Board and in workshop meetings of stakeholder groups, Councillors and senior Council staff**
- **It provides a means of ‘getting our heads out into the future’ so that when we are making economic development recommendations or decisions with long term consequences, we are as well informed as is practical about the drivers of change that will shape and influence these consequences**
- **The process works to highlight opportunities and also identifies potential risks that should be managed**
- **Similar approaches are used widely overseas and the approach used here has a track record in New Zealand**



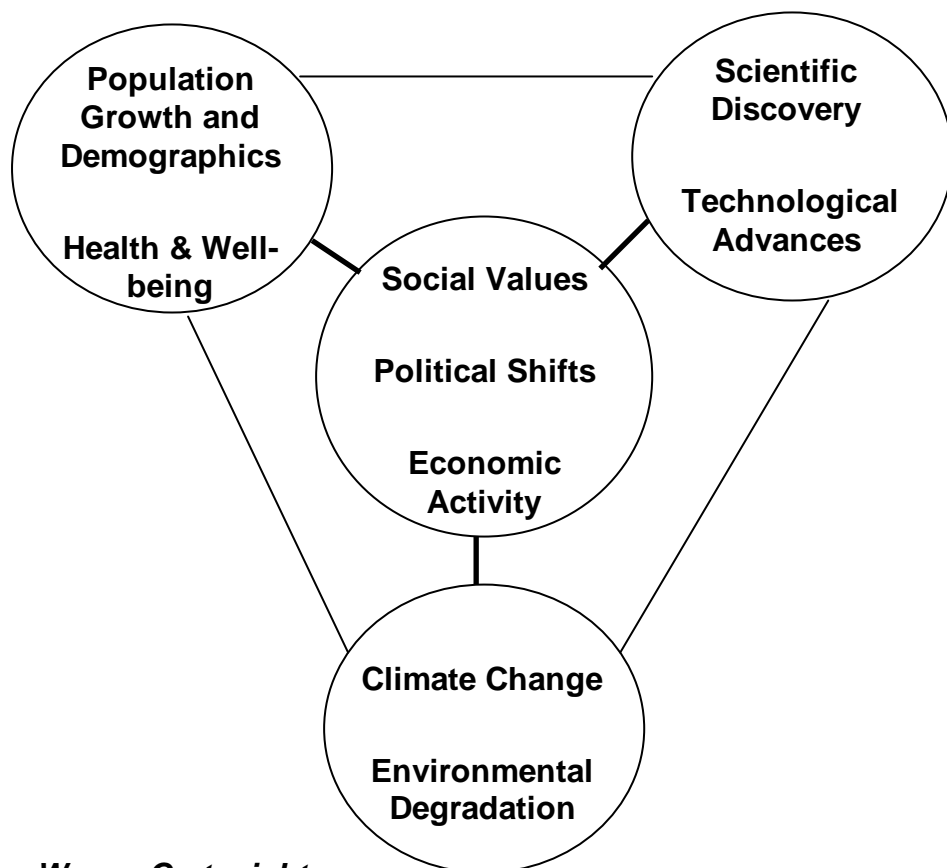
Future Insights Framework





Identifying the Major Drivers of Change to 2025: a three-step Approach

Step 1 : Assess the drivers of global change :



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Step 2 Focus the drivers into global scenarios that span the plausible futures:

Globalisation and Security

Conflicted World

Sustainability Emerges

Step 3 Use the key elements of these scenarios to identify the change drivers that are relevant to New Zealand and Rotorua District



Overview of Major Drivers of Change to 2025

- Energy prices and supply
- More frequent and severe weather events
- Changing lifestyles, work styles and families
- Increasing global disruptions and anxiety
- Global and New Zealand economic conditions
- New Zealand infrastructure investment lags
- Technological change
- Global water shortages
- Geological instability (local)
- Strengthening role of Maori (NZ and local)

All of these drivers are considered highly relevant to the economic future of the District, although the timing and strength of them remains uncertain

Major Drivers of Change to 2025

Energy Prices and Supply

- The prices of oil, coal and natural gas - and the costs of using them - are set to **trend upwards** very substantially but will also **vary** a great deal around this trend, due to
 - Costs of extraction
 - The influence on prices of recognition of the 'peak oil' situation
 - 'Polluter pays' penalties for releasing greenhouse gases and toxins to the atmosphere and water, through marketable rights and tax policies
 - Supply unreliability due to restrictive ownership of reserves, and global/regional conflicts affecting extraction and shipping



Major Drivers of Change to 2025

Energy Prices and Supply continued

- **Supply of energy from carbohydrates (plants and micro-organisms) will expand rapidly but will not be available in sufficient volume when needed to substitute for mineral oil and gas as these prices increase. Energy prices will become even more highly variable around 2015-2020 as serious transition from hydrocarbons to carbohydrates begins**
- **The crops required for bio-fuels will compete strongly for use of agricultural land, putting pressure on some traditional farming systems**
- **All options for growth of electricity generation in NZ have downsides concerning environmental effects, and/or cost levels, and/or ethical and safety concerns. Choices will be difficult and politically divisive. Prices will increase substantially**
- **Given the risk of damage to transmission lines due to increasing frequency of severe weather events, the 'main trunk' electricity generation and distribution model will become increasingly unreliable. Local 'distributed generation' may be more attractive, despite higher costs.**



Major Drivers of Change to 2025

More Frequent and Severe Weather Events

- Global warming is happening.
- The main effects of global warming will be more extreme weather
- In New Zealand the outlook is for:
 - More severe and more frequent wind and rain, sometimes with flooding
 - Prolonged droughts
 - Generally warmer winters but with more extreme weather events
 - More unseasonal frosts and hail
 - Variations of these effects across the regions of New Zealand
- Weather events will increasingly be outside the ranges of historical data so that current engineering and safety standards will no longer be sufficient
- Extreme weather in New Zealand will incur substantial damage, cost and anxiety, but these impacts will be *less* than in most other countries, especially in the Northern Hemisphere. Thus New Zealand will be seen as a *relatively* safe haven
- Global warming will have more gradual direct effects on agriculture and forestry



Major Drivers of Change to 2025

Shifting Lifestyles, Work Styles and Families

- **Material wealth will decline in *relative* contribution to overall well-being as more people embrace the importance of harmonious communities and sustainable development**
- **‘Baby boomer’ demographics will increase numbers of ‘active elderly’ and also result in more extended families living together**
- **Increasing proportion of people will want to move away from metropolitan living due to congestion and pollution, and increasingly prefer regional cities and rural towns**
- **Some groups in the community will have strengthening preferences for more dense ‘urban village’ environments, but others will increasingly favour living as part of ecologically sustainable land use**
- **New Zealand will become relatively more desirable – internationally – as a place to visit and live because it is a relatively ‘safe haven’.**



Major Drivers of Change to 2025

Global and New Zealand Economic Conditions

- **Global economic growth continues – spurred by technology and by China and India - but is increasingly disrupted by political instability, conflicts, energy costs, water availability and environmental concerns**
- **In New Zealand – and several other countries – growth as a dominant objective gives way to stability and security,**
- **Management of international trade and business becomes increasingly challenging due to**
 - **Security-based barriers and higher costs**
 - **Conflicts that reduce the reliability of shipping**
 - **Adverse effects of weather events on offshore markets – but there may also be favourable competitive dynamics**
- **Countries and districts that credibly offer *relatively* more safety, security and harmony will achieve international competitive advantage as ‘safe havens’ for tourism, permanent living, and some categories of investment.**

Major Drivers of Change to 2025

Technological Change

- **Highly evolved electronic connectivity and ‘ubiquitous computing’**
- **Distributed energy generation**
- **Energy efficiency systems for transportation, heating, air conditioning and manufacturing**
- **Sustainable materials and buildings**
- **Medical science delivers extended life expectancy and ‘the active aged’ - but there is also more risk of major epidemics.**

Global Water Shortages

- **Shortage of clean potable water is already a major threat to human health and a limitation to industrial development in many parts of the world**
- **This situation will intensify greatly and will become a potent source of political instability and conflicts – stronger than access to oil**
- **Unlike oil/energy, which has substitutes through technology, there is no known solution to this problem**
- **Secure sources of clean water exports will become increasingly valuable.**

Major Drivers of Change to 2025

New Zealand Infrastructure Investment Lags

The chronic lag in NZ central government infrastructure investment will continue and worsen, especially affecting roads, electricity generation and distribution, and public transportation. Districts and cities increasingly take more self-sufficient approaches.

Geological Instability (Rotorua District)

This is a change of *perspective*, not of facts. To current views that the geothermal resource is a tourist attraction but also a risk, will be added its potential for locally generated energy. This opportunity will become increasingly attractive relative to the future costs and risks of remote oil and coal generators and transmission from them.

Strengthening Role of Maori, Locally

The existing unique relationship of Maori with the district will provide a base for a strengthening role in several economic initiatives.

Conclusions

- **The Future Insights process has provided an effective initial framework and approach to thinking about economic strategies for Rotorua District**
- **The presentation by Bryce Heard will explain further the opportunities that have been highlighted by the drivers of change to 2025**
- **I wish you well in your consideration of these proposals.**