

# The New Zealand Experience

**Wellington**

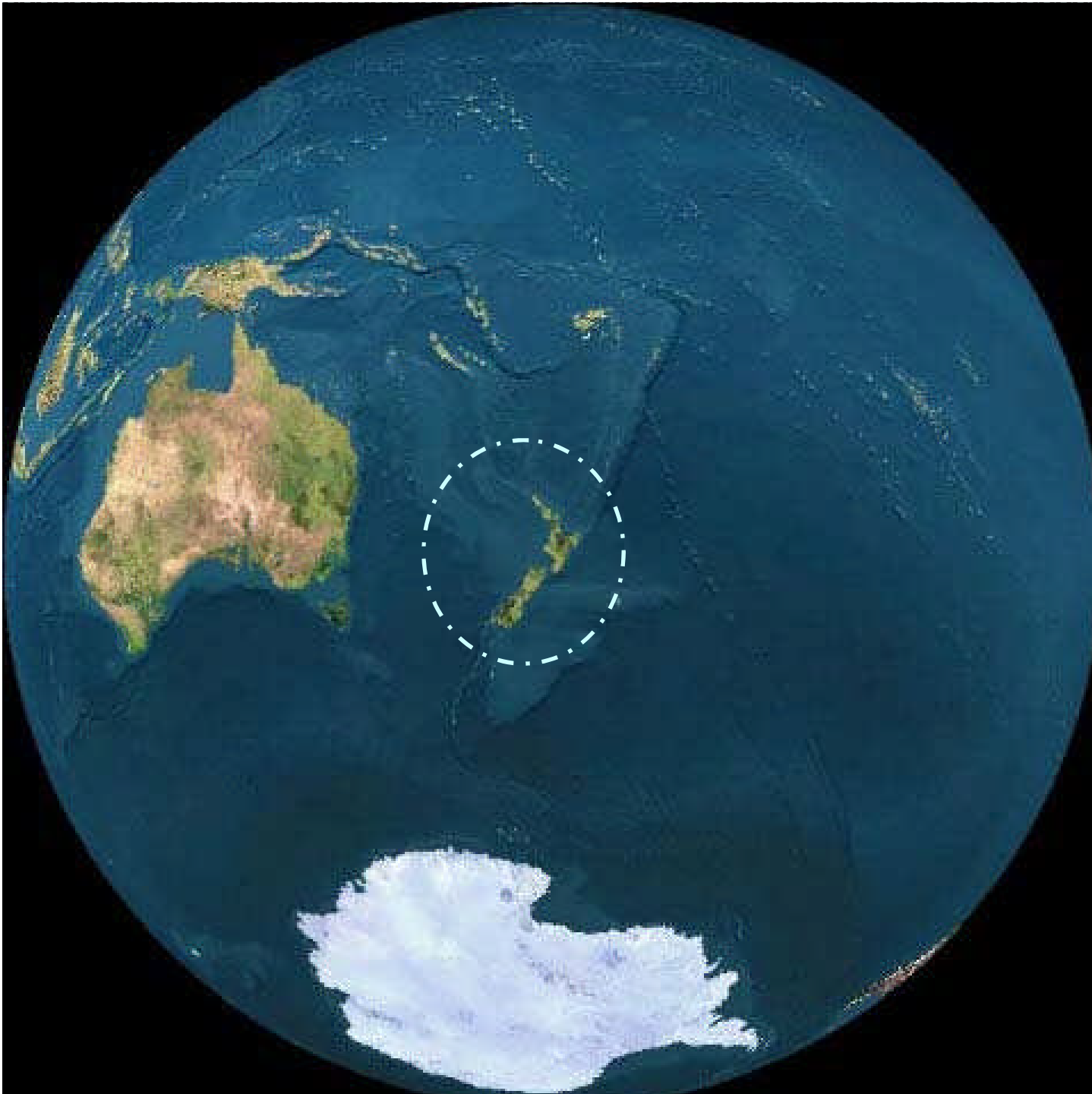
**Beat Huser  
Environment Waikato  
New Zealand**

**Lake Taupo**

**Auckland**

**PRI Workshop, Ottawa - 22/23 February 2010**





What about  
New Zealand?



100% PURE NEW ZEALAND

[newzealand.com](http://newzealand.com)

# What we will cover

- New Zealand's **governance**
  - Role of central (federal) and local government

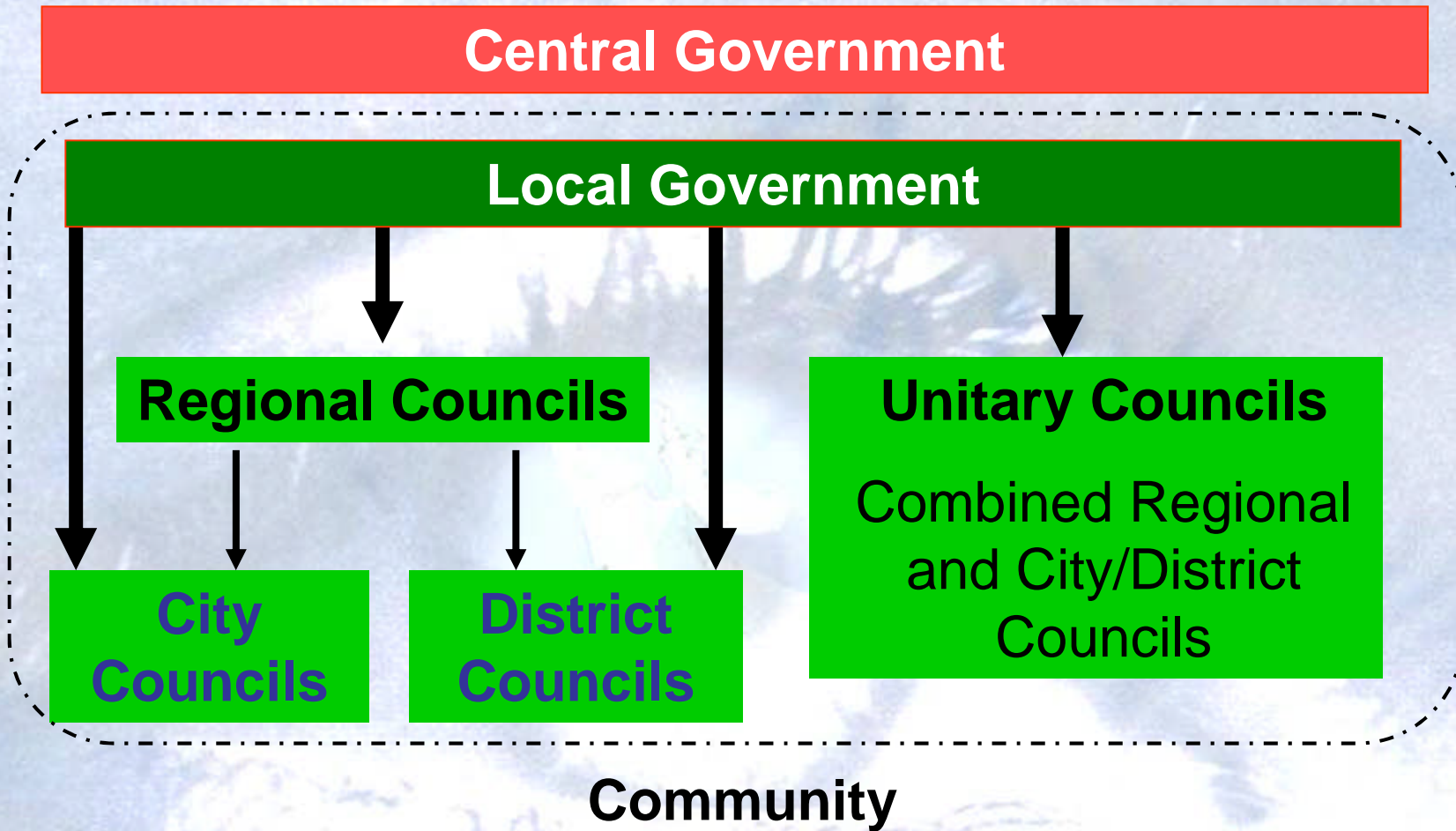
## Two projects:

1. **Creating Futures** project (strategic planning tools)
2. **Protecting Lake Taupo** (innovative policy)

## Concluding observations:

- Role of federal (national/central) government
- Science and policy interface

# *The Structure of Government*





# Central Government

- Elected by the people (as a nation)
- Decide national policy and make laws (social, cultural, economic and environmental)
  - for the whole of New Zealand
- Supported by non-elected officials
  - Provide policy advice



# Local Government

## Regional & City/District Councils

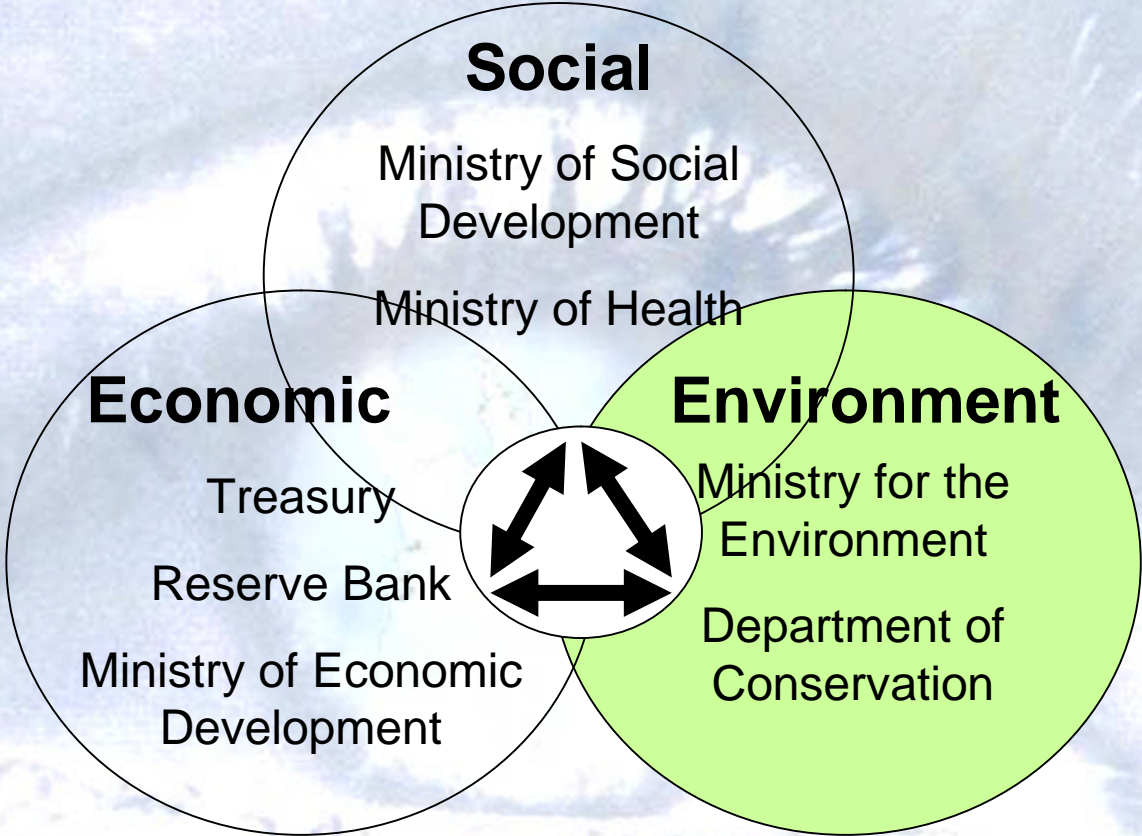
### Regional Councils (12)

- Natural boundary based on watersheds
- Core business - natural resource management
  - air, land, water, coast

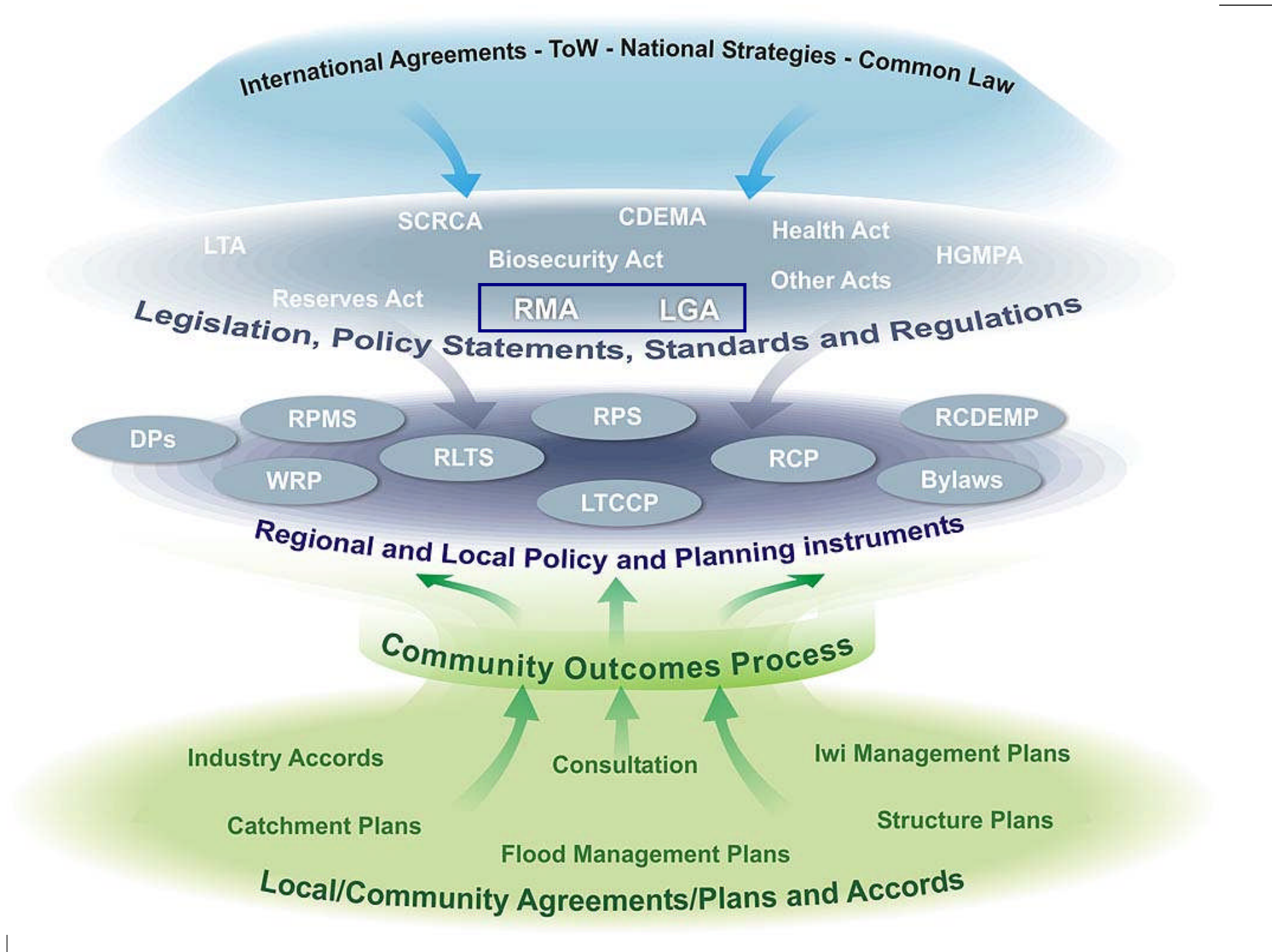
### District / City Councils (68)

- Boundary based on community of interest
- Core business - land use, economic development, service delivery
  - water supply, sewerage, refuse collection, roading, parks

# Central Government – Key Agencies







# Resource Management Act

1991

CENTRAL GOVERNMENT

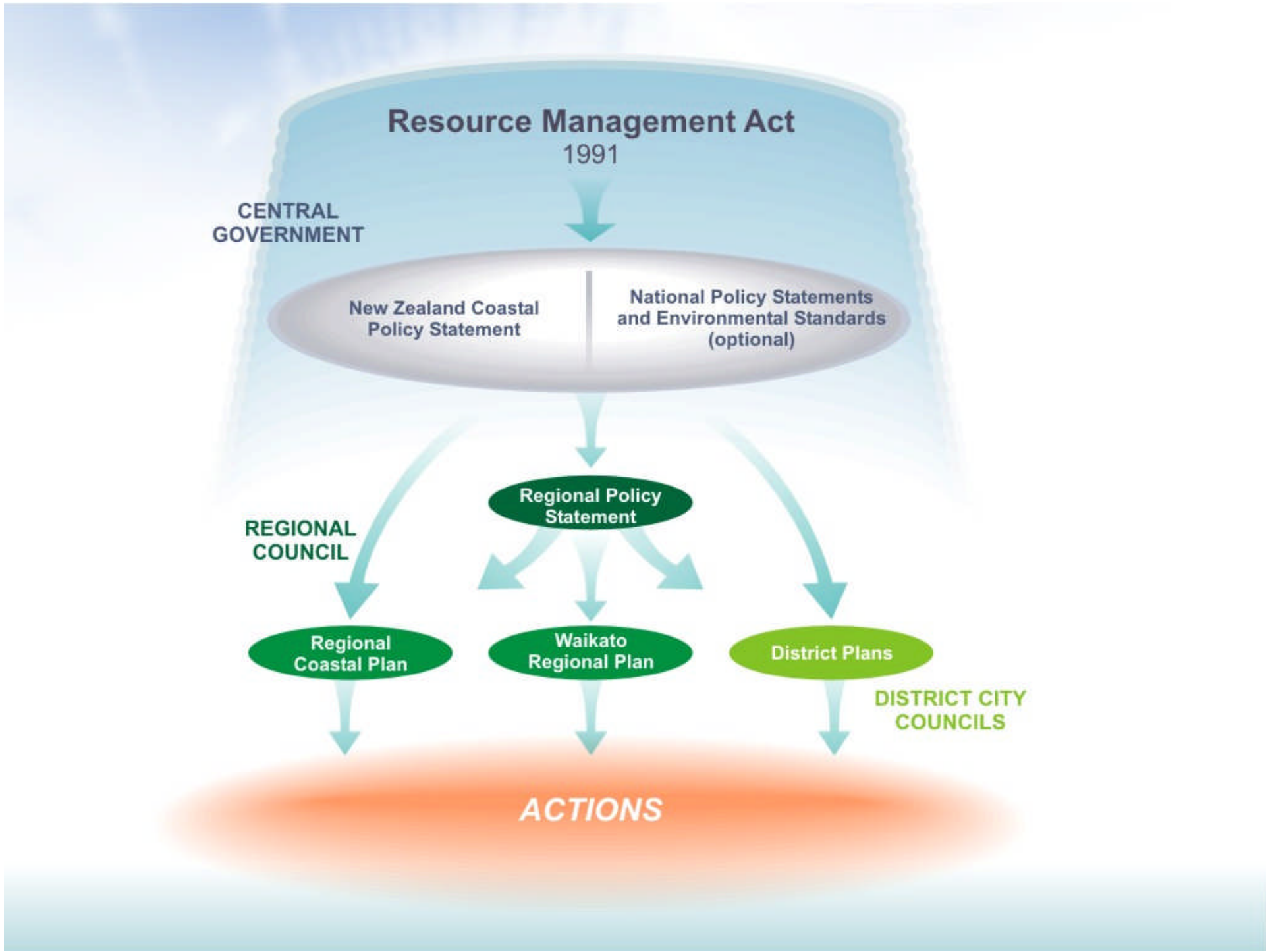


REGIONAL COUNCIL

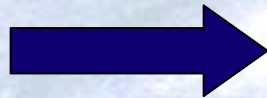


DISTRICT CITY COUNCILS

**ACTIONS**



# Relationship Between Policy Instruments



Prevent this (regulation)

**Sustainable**

**Unsustainable**

Encourage this  
(education/economic)



Creating  
**Futures**

# Part I – Creating Futures project

## Strategic Planning Tools



Creating  
Futures

# ***Waikato Region - what we manage***

- 25,000 km<sup>2</sup> total area
- 1,150 km coastline
- Longest river, largest lake
- 400,000 people (10% of NZ)
- \$10 Billion GDP (10% of NZ)
- \$ 6 Billion Agriculture Export



15% Maori - *and increasing*



# Vegetation Cover

1840

and

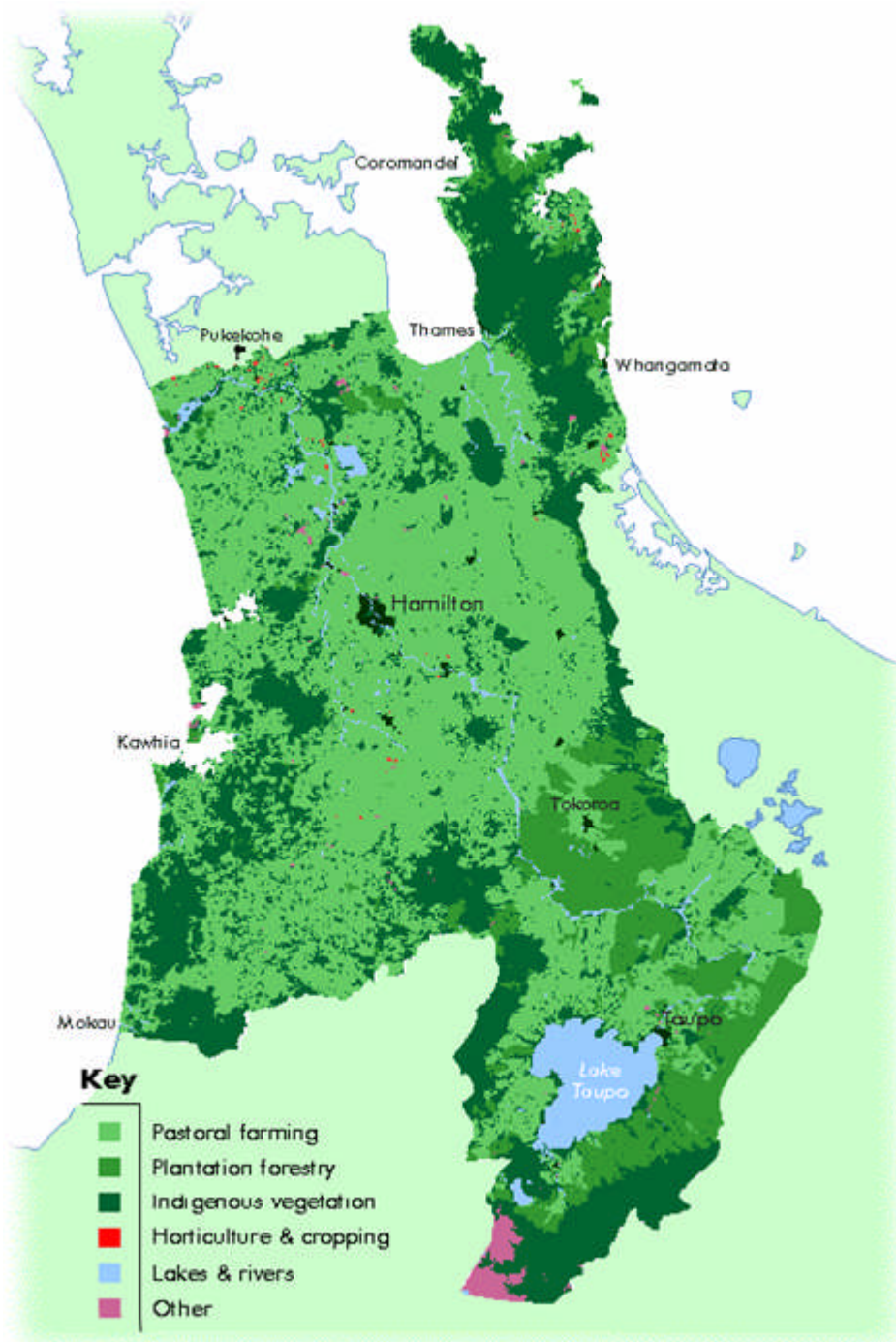
Today



Creating  
Future

Key

Native forest,  
scrub and tussock



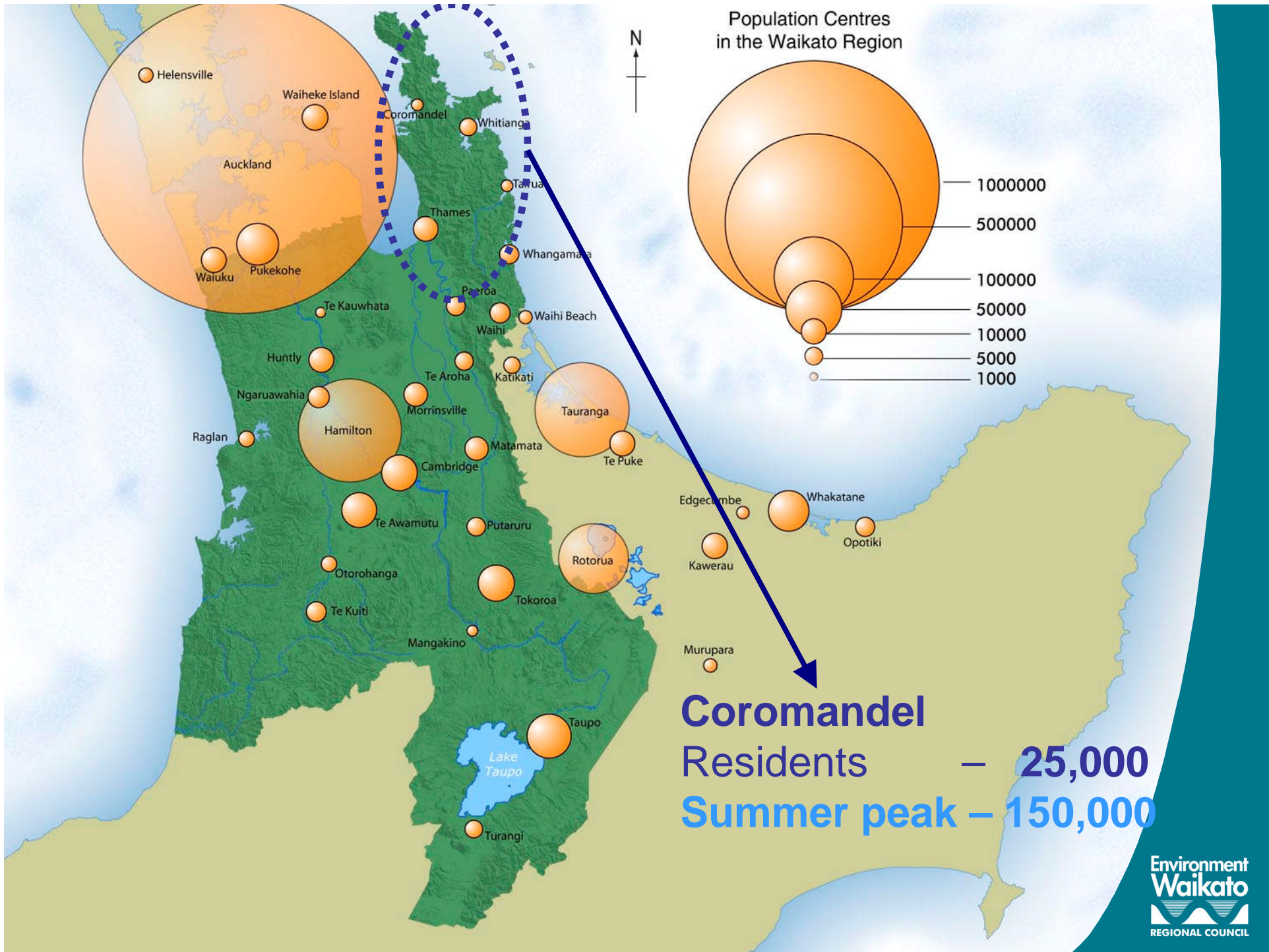
Land cover data supplied by Terralink NZ Limited (from 1996 Waikato Land Cover Database);  
 COPYRIGHT RESERVED.

# Land Use

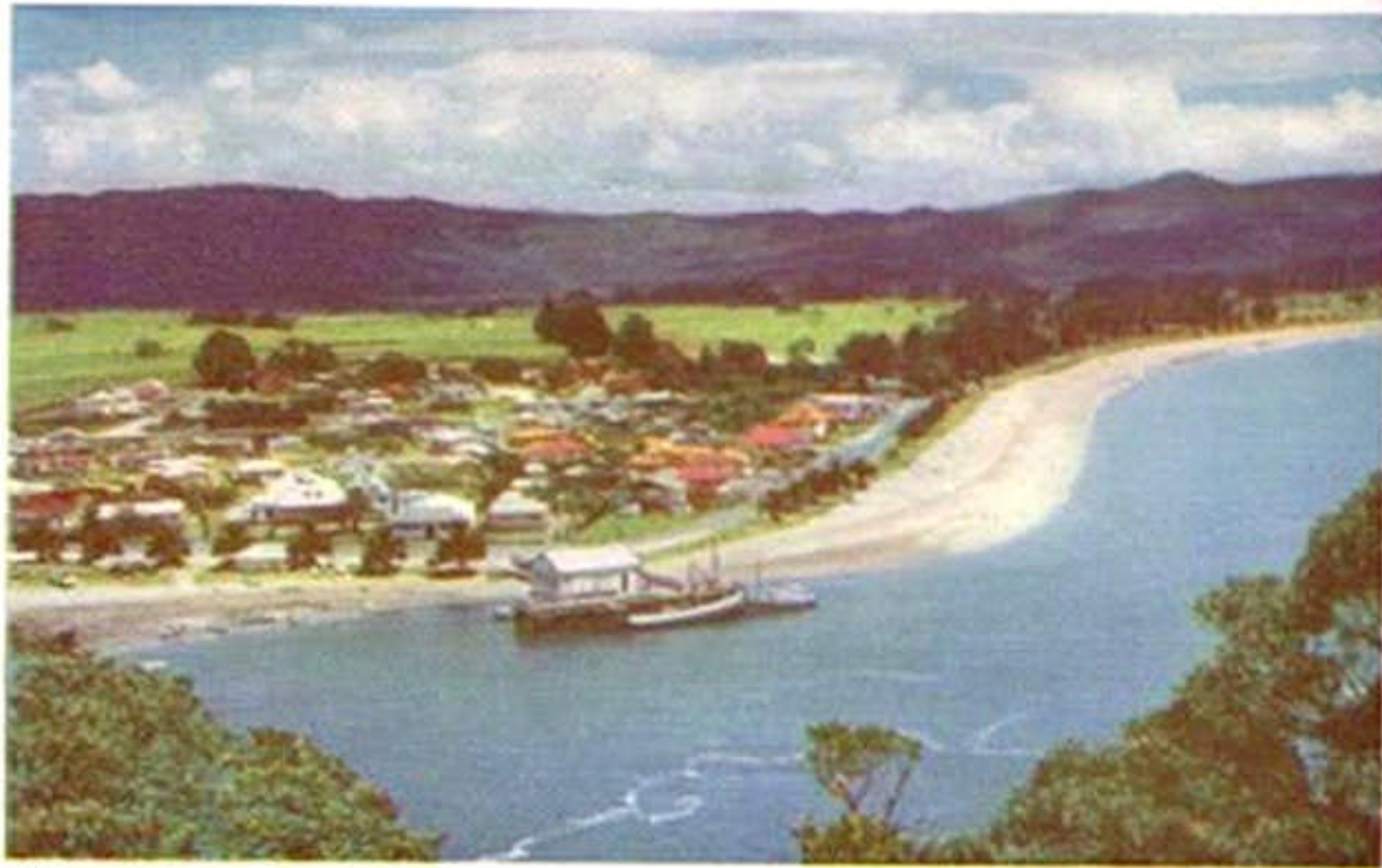
- 56%** pastoral farming
- 12%** plantation forestry
- 28%** indigenous vegetation and wetlands
- < 1%** horticulture
- < 1%** urban uses

**Waikato in 2050 ?**





# Whitianga in 1950s



Whitianga, Mercury Bay. Buffalo Beach, right, named after H.M.S. Buffalo, wrecked there, 27th July, 1840

Now - 2007



Future - 2030



# Future - in 500 years ...

➤ *Whitianga 2500?*

*What people value:  
“The natural  
environment and  
lifestyle the  
Coromandel offers”*



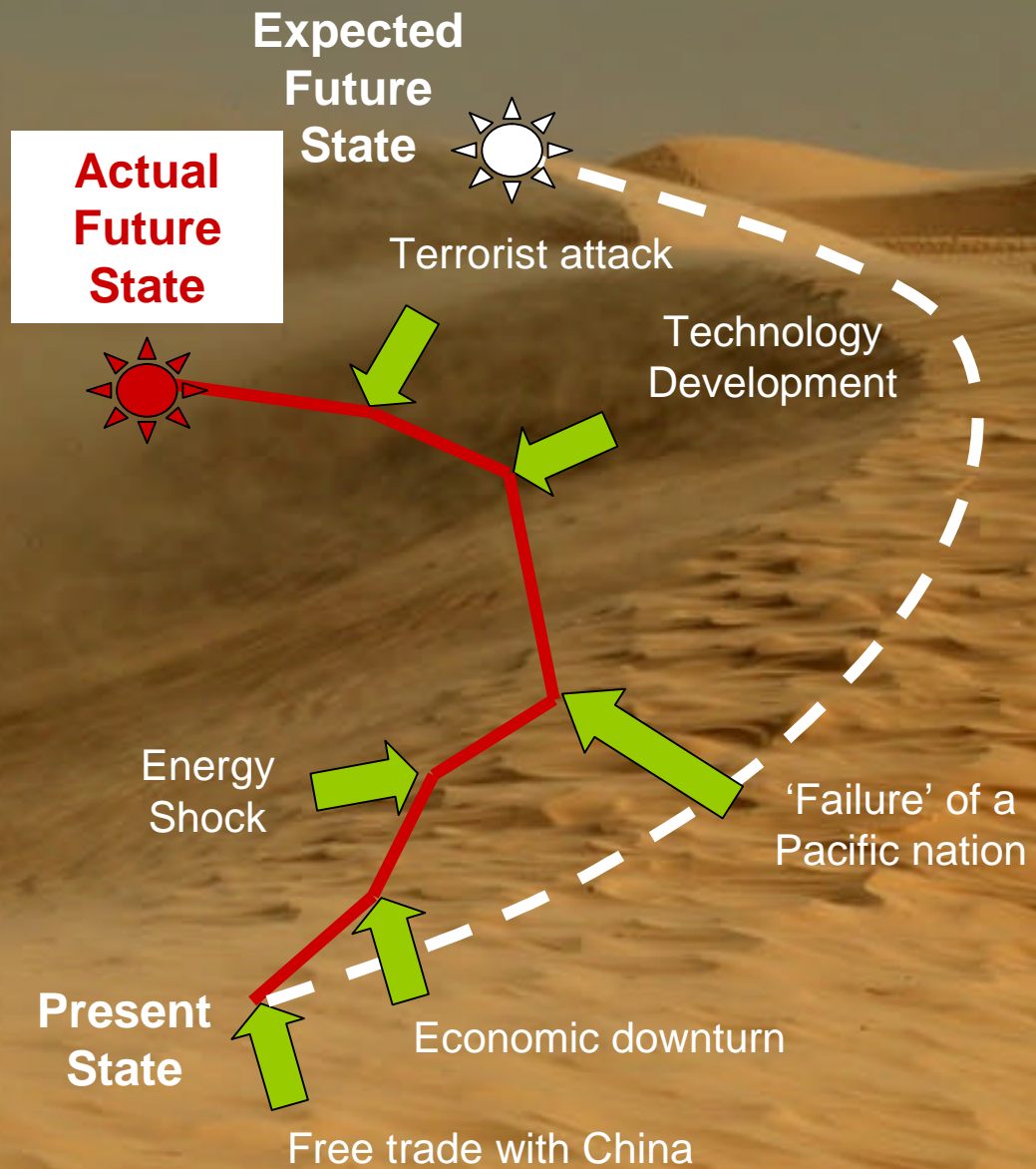
*We can't predict the future ....*

The 'futures landscape'  
is one of shifting sands

Creating  
**Futures**



The path between the present and the future is not clear and direct



# **Creating Futures** (2006 – 2010)

## **Project Aim**

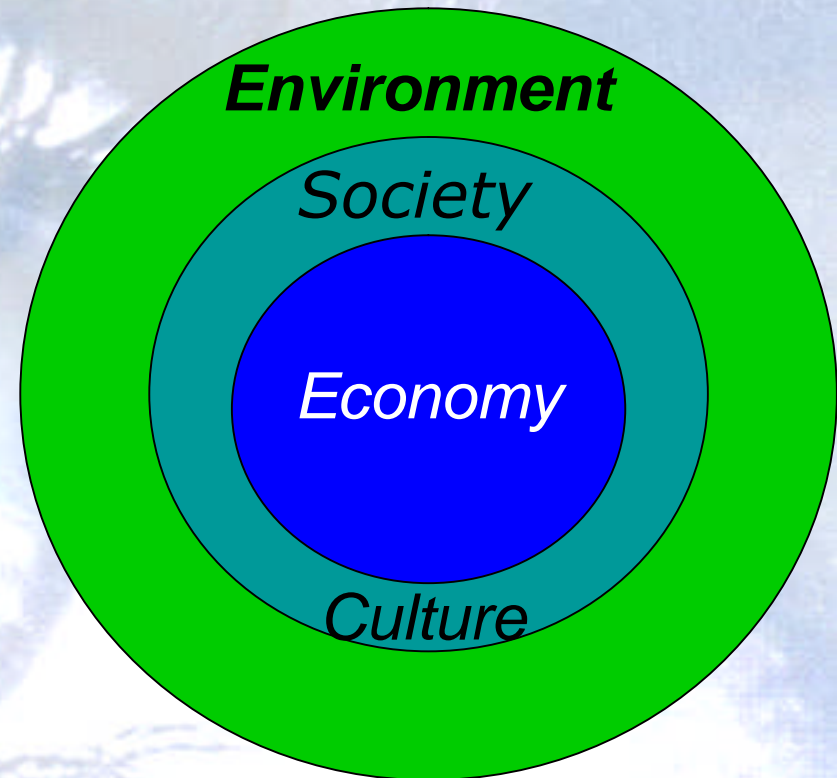
Develop and apply  
planning and communication tools  
to make informed choices for the future

Creating  
**Futures**



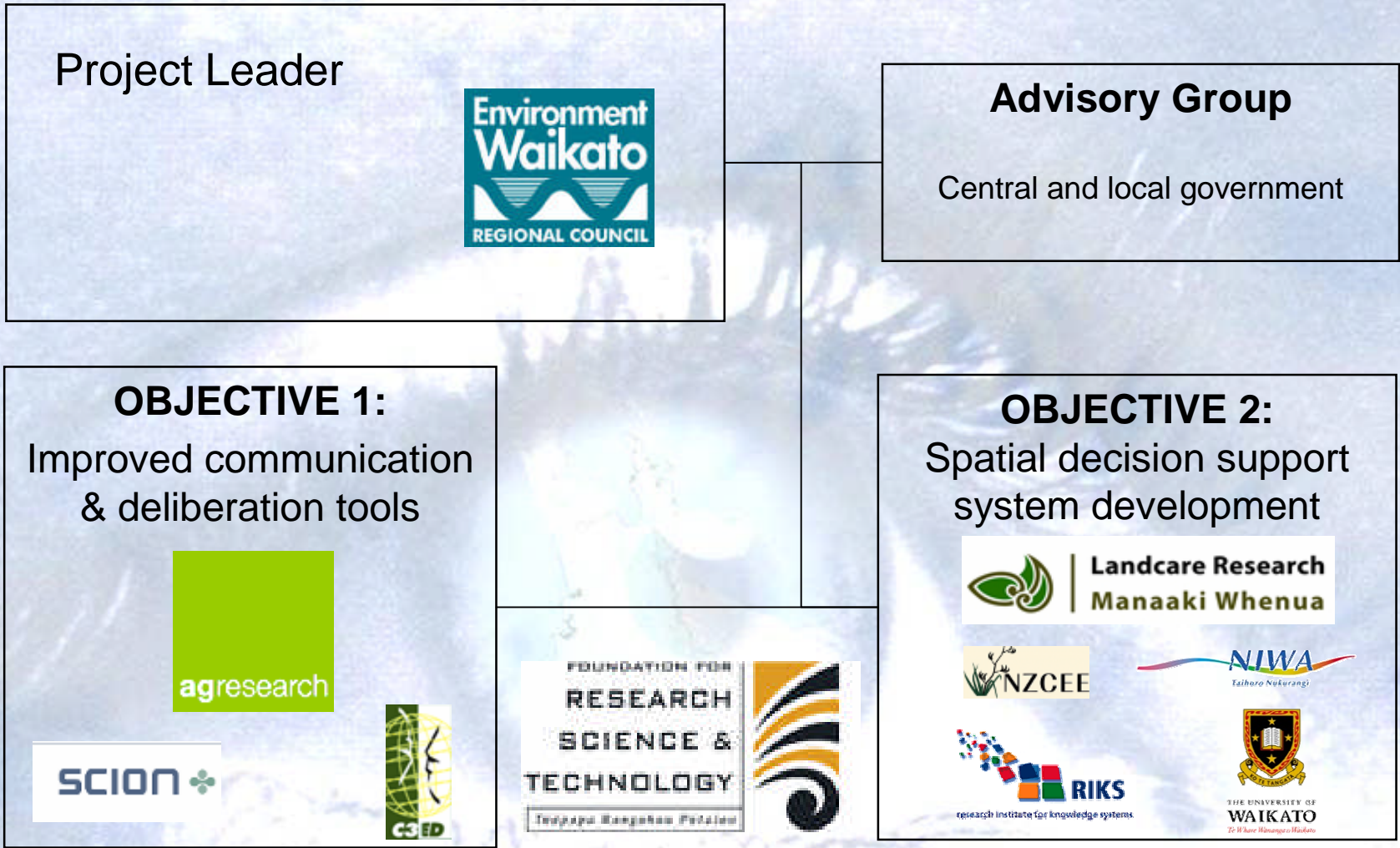
# Key Features

1. **LONG TERM** planning and enhanced strategic focus
2. **LINKING Science to Policy**
  - Evidence-based
  - Informed decision-making
3. **INTEGRATION**
  - Strategic partnerships
  - Linking the four well-beings



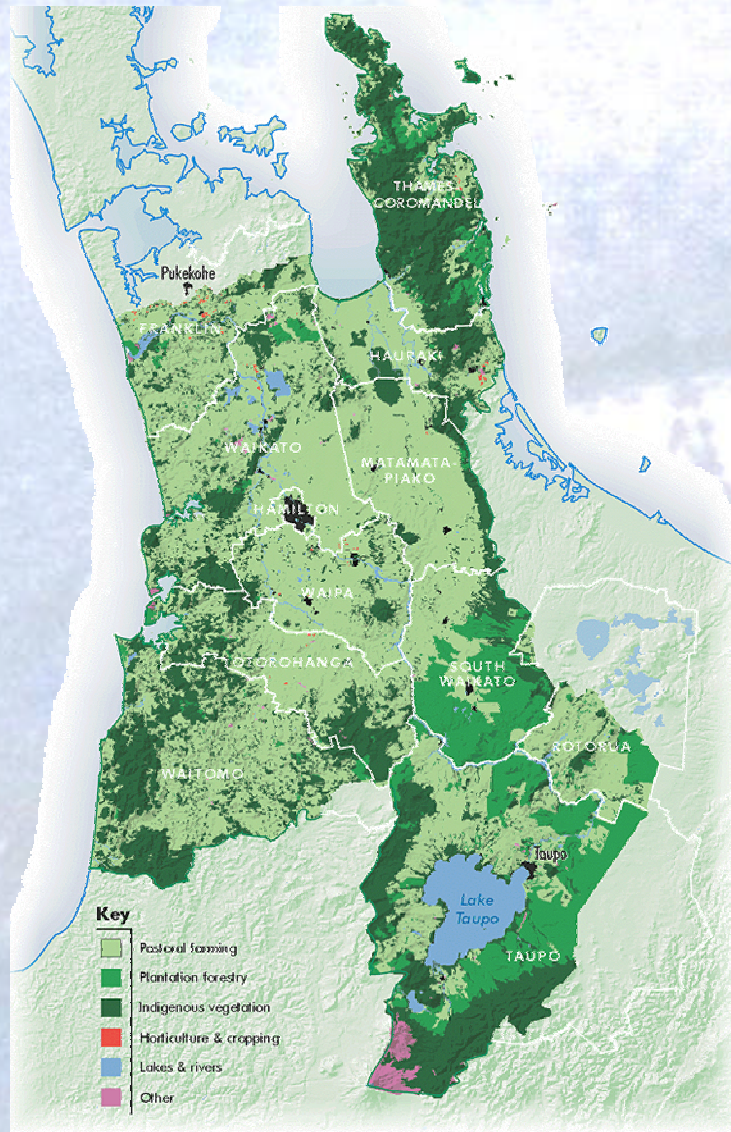


# Project Structure



Creating  
Futures

# Key Project Tools

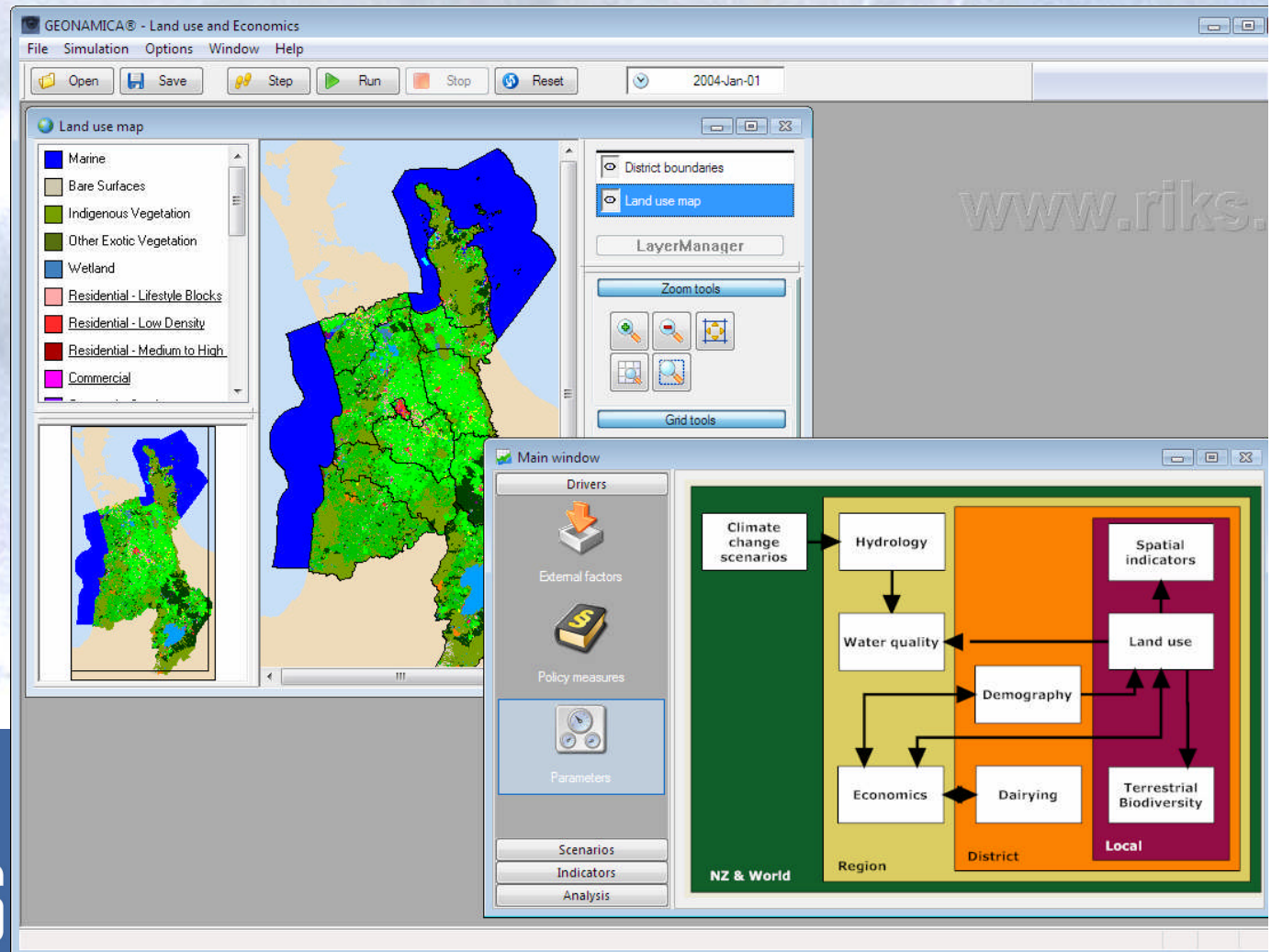


- Scenarios
- Deliberation Process
- **Computer Model**  
(Decision Support Systems)  
⇒ **WISE**

Creating  
Futures

# WISE (Waikato Integrated Scenario Explorer)

- Stand-alone software application
- System of interacting models

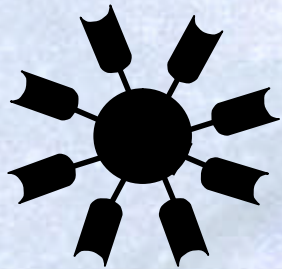


Creating  
Futures

# Dynamic and Spatial Modelling

Source: RIKS 2006









## Basic Framework

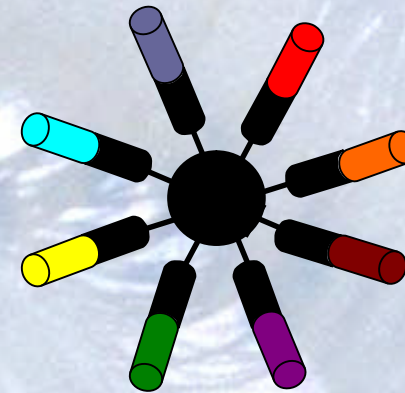


Geonamica



## Model library:

-  Land use local level
-  Regional interaction
-  Transport
-  Population (Age cohort)
-  Plant growth
-  Climate
-  Hydrology
-  Input – Output (Economy-Environment)

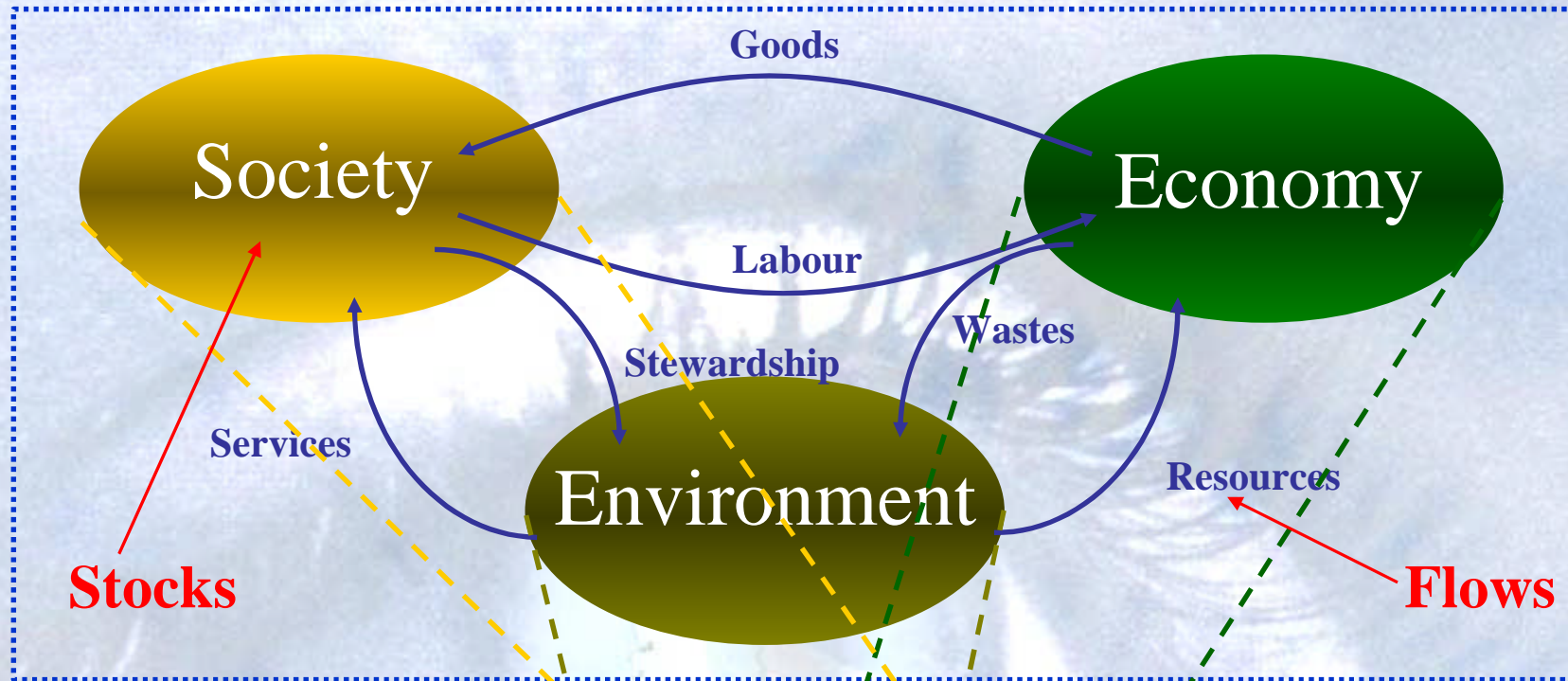


Product

**WISE**

Creating  
Futures

# Interdisciplinary

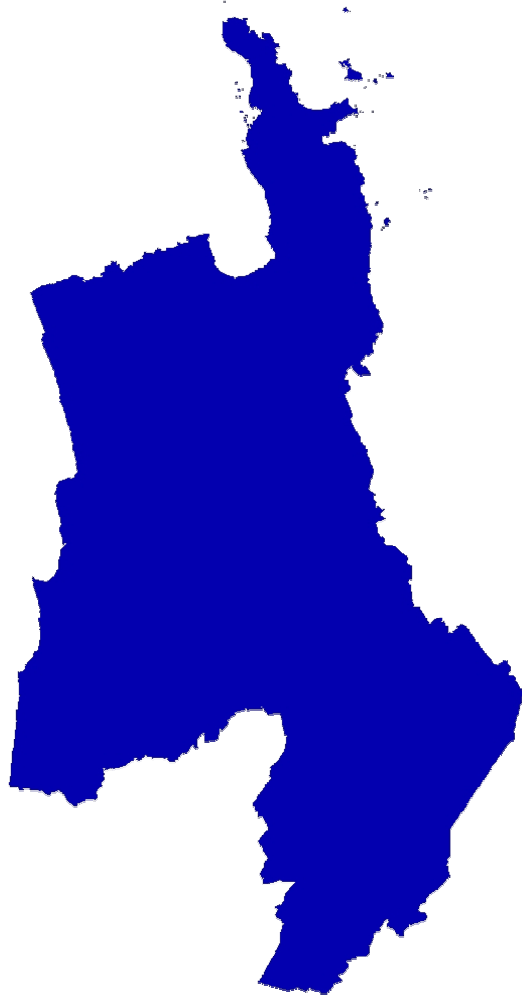


**Spatially-Explicit**

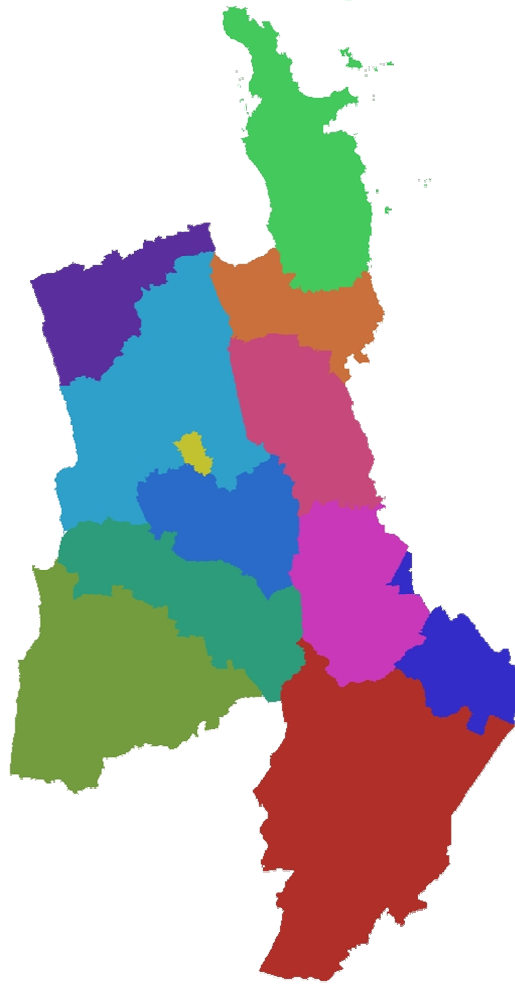
**Dynamic**

Creating  
**Futures**

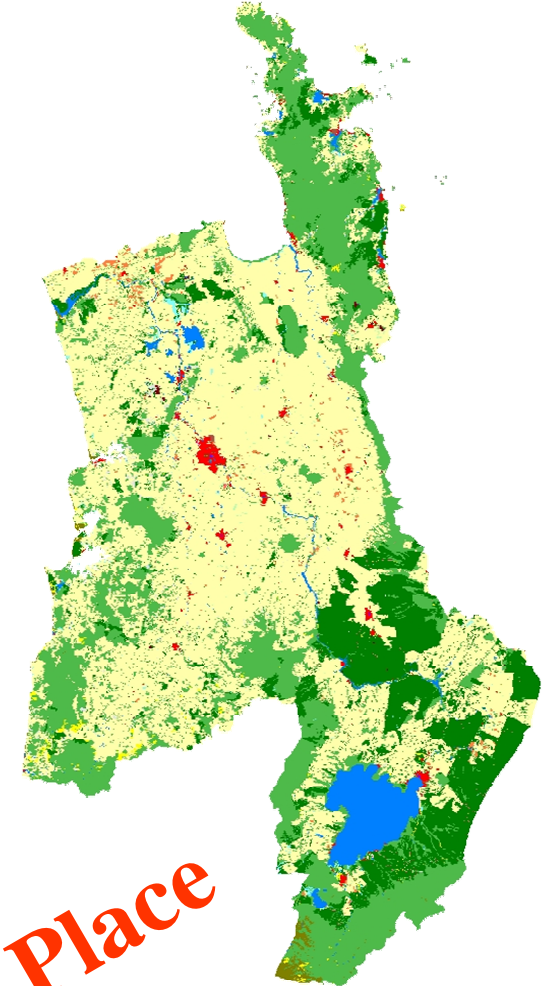
# Multi-scale



Region



District



Place

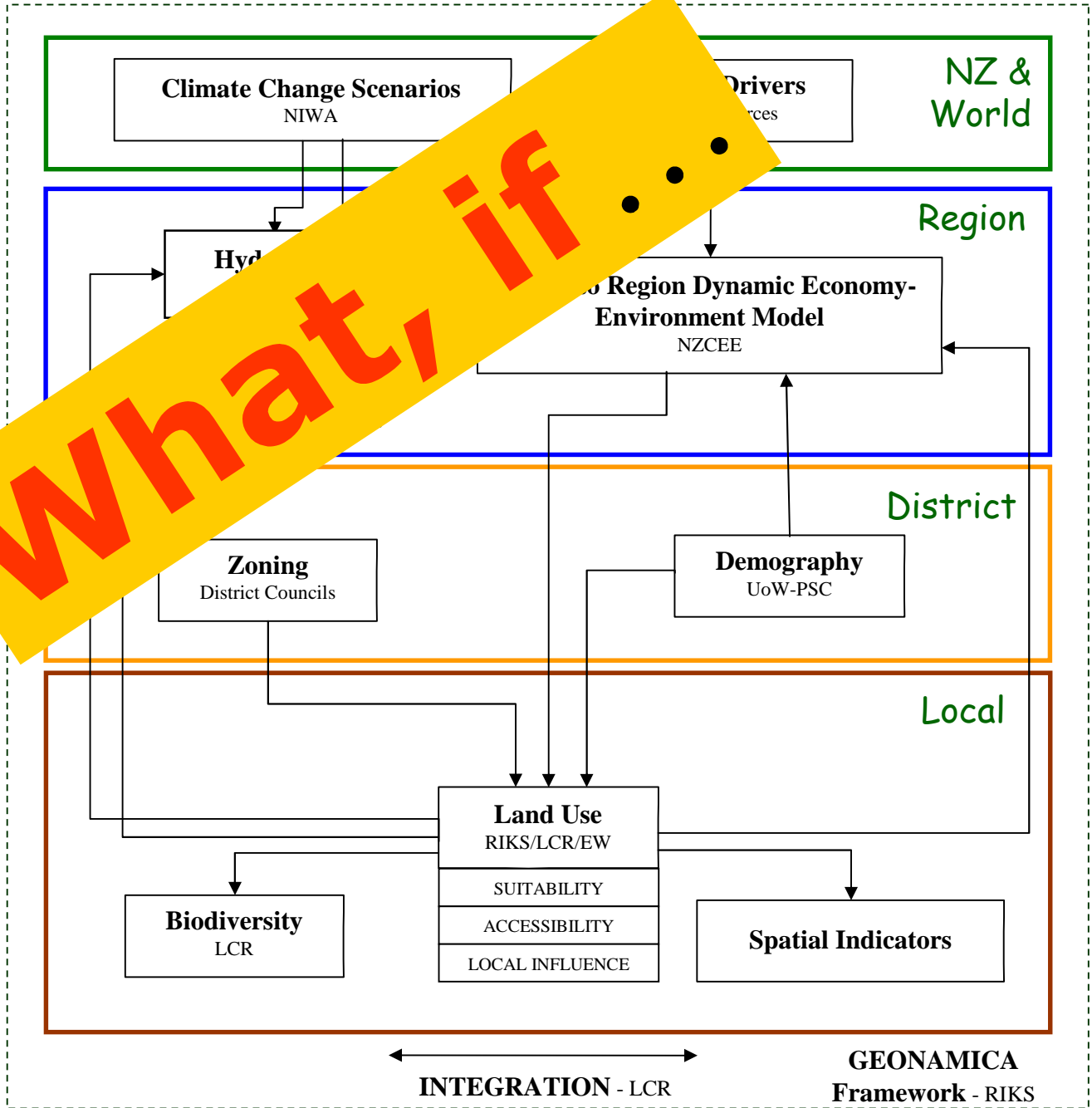
Local  
(200 x 200 m cells)



# WISE Beta System Design



**What, if ...**



# 3 Mock Scenarios for Waikato's Future 2001-2050 based on WISE Prototype

## Dairy Expansion

Land for dairying  
increases ~4% annually

## Diversification

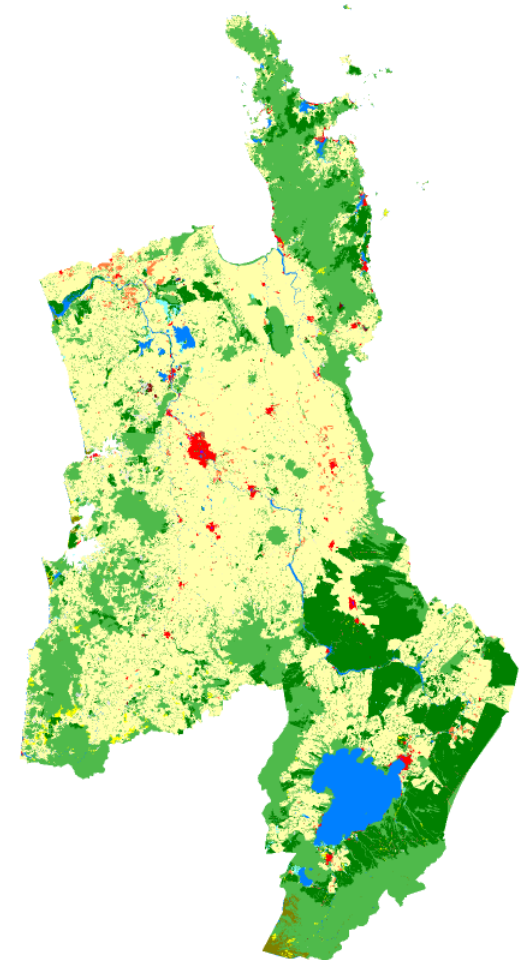
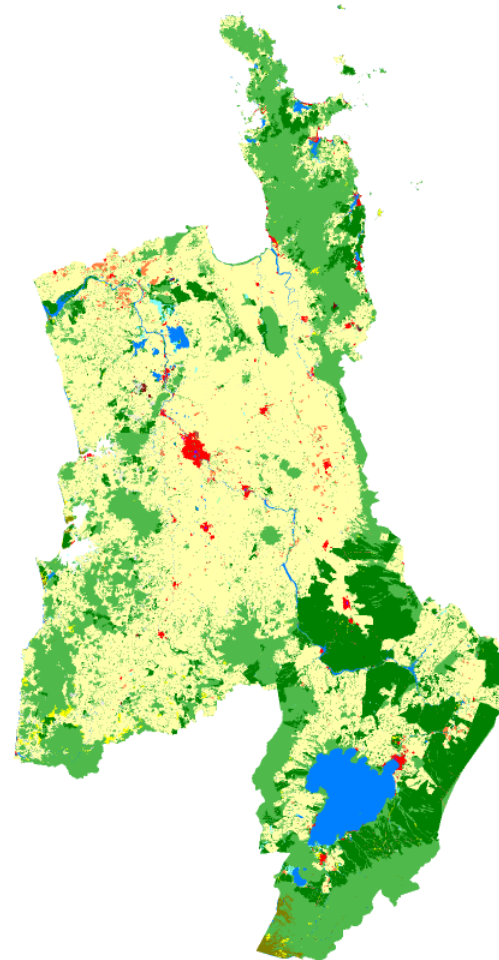
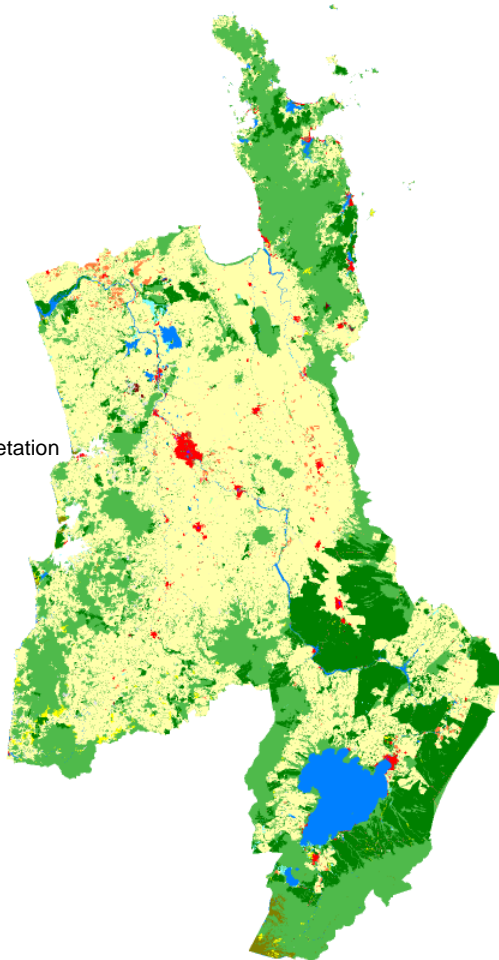
Demand for non-dairy primary  
production land increases

## Village Life

Residential land  
increases 7-fold

### Land Use

- Abandoned
- Bare Ground
- Broad-Acre
- Forestry
- Infrastructure
- Mine
- Indigenous Vegetation
- Pastoral - Dairy
- Pastoral - Other
- Other Primary
- Residential
- Water
- Wetland
- Utilities
- Services
- Manufacturing
- Construction



# How WISE helps Environment Waikato

- Explore alternative policy options for **regional planning**, assess trade-offs and prioritise issues
- Regional development and sub-regional strategies (non-statutory) - **Future Proof project**
- Cumulative effects of policy and permits (over space/time)
- Up-to-date data and information
- Access to expert knowledge from all disciplines

Creating  
Futures

## **Lessons** for successful interdisciplinary multi-agency science/policy collaboration (so far):

- Allow significant time at the start of a project to develop shared understanding, a holistic project vision and strong relationships
- End user engagement from the beginning is absolutely critical. Involve the 'right people' (champions, networkers, strategic thinkers)
- Develop uptake and implementation strategy to optimize end users buy-in through:
  - ✓ Improving knowledge of tools
  - ✓ Making tools relevant (case studies), useable and credible
  - ✓ Provide support data management, training, model set-up
  - ✓ Collaboratively identify and implement improvements



## What's New

## About the Project

Creating Futures is a new and innovative 4-year research project aimed at creating tools for improving decision making. The research will develop and implement designed to inform communities about the long-term effects of current development patterns and trends. It also aims to enhance community involvement in choosing and planning for desired futures. >>

## Project Outputs

The Creating Futures project is now two years into a four year research project. Progress in developing tools is provided in this section. Some additional information on the tools, their use, and development process is also given. The three output areas are: >>

[Spatial Waikato Model](#)

[Deliberation Tools](#)

### 15 Jul **Waikato Futures Symposium**

New Zealand Trade and Enterprise in conjunction with Environment Waikato and partners are convening this Symposium to present and review work completed to date on developing future scenarios for the Waikato region. [Symposium Flyer... >>](#)

### 13 Jul **Deliberation Workshops**

In March 2008 the first of two deliberation workshops with Waikato stakeholders was held to develop deliberation methodologies. See [Deliberation Workshop 1 Report \[deliberation-tools\]... >>](#)

### 11 Jul **Narrative Stories**

Stories to help you imagine life in each of the Waikato (just completing draft stories - will link in before go live)... >>

### 10 Jul **Spatial Waikato Model**

Final specifications (report not quite complete)... >>

## Further Resources

### Project Team

[Structure](#)

[Roles](#)

[Contacts](#)

## Scenarios

Scenarios are plausible stories about the future. They are stories that are real enough - that is, sufficiently based on the trends and changes that we see happening now - to mean that they not only could possibly happen, but could plausibly happen. >>

[www.creatingfutures.org.nz](http://www.creatingfutures.org.nz)

# Thanks

- ✓ FRST – Foundation of Research Science & Technology
- ✓ Project team members
- ✓ Community Outcomes team
- ✓ Environment Waikato

[www.creatingfutures.org.nz](http://www.creatingfutures.org.nz)