

# A Report on the Research Strategy Futures Workshop

26 September 07

Wellington Airport

# **The workshop goal was:**

- To develop a plan, as part of our research strategy, to address the big future issues that will affect councils in the next 25 years.**

# The workshop objectives were:

1. To discuss the big future issues that we need to prepare for that are going to come along in the next 25 years that will affect us as councils
2. To achieve a better understanding on how research could help councils prepare for these impacts
3. To identify a process to develop research programmes or research capability to prepare for these issues.

# Workshop Agenda

- 1000 Introduction - Why are we here?
- 1015 Future Thinking - Guest Speakers
- 1020 Julie Collins - Climate change impacts - a national perspective
- 1050 Ralph Chapman - Future implications of CC
- 1120 Eric Pyle - Adjusting science to the future
- 1150 Tim Bennetts - NZ in 20 years
- 1230 Lunch
- 1pm Discussion
- 130 Gary Bedford - The 12 Critical Issues Revisited
- 2 pm Workshop session - How do we prepare for the future?

# The purpose of the research strategy is:

- To provide a single powerful voice for RC's to communicate immediate and longer-term RS&T priorities
- To provide a mechanism to get input from all Regional Councils and TLA's on R, S & T priorities, promote greater collaboration, and enhance communication within the Local Government framework to ensure that good science supports the roles and functions of Regional Councils and TLA's in general.
- In particular the strategy will provide a process that will assist in the further development of high quality, relevant research and timely and appropriate knowledge transfer mechanisms.

# Scope of Research Strategy

- Research, science and technology that is necessary to support and inform environmental and sustainable management.
- Environmental research and relevant hazard research, and also social, cultural, and economic aspects where they relate to the roles and functions of Regional Councils
- The recognition and promotion of sciences that go beyond just the physical to incorporate values and societal effects and values and perspectives
- Science to enable policy issues to be addressed.

# Goals of Research Strategy

- 1. Providing timely, authoritative and respected direction to science research and funding**
- 2. Catalysing and enhancing science delivery – capability, capacity, and targeting**
- 3. Science uptake opportunity and facilitation**
- 4. Feedback and updating**

# Future Thinking

## Guest Speakers:

- Julie Collins - MAF
- Ralph Chapman - Victoria University of Wellington
- Eric Pyle - MRST
- Tim Bennetts - MfE

# Discussion

- The Govt recognises the importance of sustainability and the role of the Regional Councils to deliver on the RMA and other legislation.
- The Ministry for Research, Science & Technology welcomes the RC's to take a lead in driving environmental science. There is unanimous agreement that we should take up the opportunity.
- It's not always clear where RC's can fit into the science and delivery process and it was suggested that we develop a comprehensive diagram that shows where we fit (Action).
- It is unanimously agreed that Climate Change, or at least CC policies, will have a very significant impact on the functions of the Regional Councils. It will also drive research needs.
- As well as CC there are many other issues that can be expected to have an impact on NZ including aging demographics, increasing urbanisation and possibly lack of appreciation for the environment, carbon fuel supply, and international treaties and trade.

# Discussion (2)

- As well as the anticipated issues there will be many unpredictable shocks that could affect us - e.g., financial markets, political instability, epidemics, major biosecurity incursions etc
- The warning is that if RC's are slow to respond to change then there is a risk that Central Govt will make decisions
- Our strategy should help us to respond in a timely manner by promoting relevant research, technology transfer, and science-based policy
- A well designed Research Strategy should also enable RC's to influence Govt funding to areas of perceived priority by give us a more powerful collective voice.
- RC's need to be seen as more than just "implementers" or end users and we need to be providing direction.

# Discussion (3)

- The workshop recognised that there is a communication vacuum in some areas between RC's and Central Govt and there is currently an excellent opportunity to fill this vacuum
- RC's need to identify what their information needs are - which is what this process is about - and then we can communicate these needs to the ministries
- It was agreed that there is value in having a repeat forum on future impacts in a year or two with RC's and Central Govt.
- Resourcing issues within RC's is a challenge, partly because of labour demand and also the number of court cases etc. and RC CEO's need to realise this has to be a priority. Investment in research to help inform decision making needs to be regarded as essential.
- Central Govt thinks we have the tools now - RMA etc - and processes - so they need to realise the difficulty we have coming through the community participatory process.
- We need to consider these issues as to how we direct our research - i.e., barriers to change, social processes, economic, (urban containment)

# **The 12 Critical Issues Revisited**

- **The workshop reviewed the “12 Critical Issues” identified by the RMG in 2001 to see if they were still relevant today and if more research was required.**
- **Not surprisingly, many are still relevant, but in most cases the thinking has moved on and the issues are more complex.**

Issue	Detail of Concerns	Research still needed?
<p><b>Loss of biodiversity:</b></p> <ul style="list-style-type: none"> <li>• Remnant indigenous vegetation and links networks corridors</li> <li>• Wetland areas</li> <li>• Marine and inter-tidal ecosystems</li> <li>• Impacts of plant and animal pests biosecurity border control</li> </ul>	<ul style="list-style-type: none"> <li>• Small to medium areas often in private ownership</li> <li>• Significant areas in Crown ownership have pest control problems</li> <li>• Interaction of RA and TLA responsibilities</li> <li>• Interaction of RMA and Biosecurity responsibilities</li> <li>• Need for consistent approach nationwide</li> <li>• Role of ecosystem principles an ecosystem valuation</li> </ul>	<ul style="list-style-type: none"> <li>• FRST project on what motivates people in the absence of rules (NS); won't answer question of best incentive; RC will still have to take decisions</li> <li>• Transfer issue on remnant biodiversity issue;</li> <li>• Still a need for more on "valuation"</li> <li>• Also - size of functional ecosystem a gap</li> <li>• Control of aquatic pests including marine a gap</li> <li>• Scope for more applied research on adaptive management, precautionary principle etc</li> </ul>

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Issue	Detail of Concerns	Research still needed?
<p><b>Degradation of ground and surface water from land use:</b></p> <ul style="list-style-type: none"> <li>• Urban stormwater (peaks and contaminants)</li> <li>• Rural land use and surface and groundwater contaminant levels (especially from dairying)</li> </ul>	<ul style="list-style-type: none"> <li>• Extent of problem –</li> <li>• Are the causes well understood</li> <li>• Looming 2001 re-consenting</li> <li>• Appropriateness of BPO to stormwater discharges</li> <li>• Historical over-emphasis on riparian man't as a solution</li> <li>• Realistic and appropriate resource management objectives</li> </ul>	<ul style="list-style-type: none"> <li>• Heaps - predictive and diagnostic tools - groundwater and surface water - quality and quantity - including stormwater.</li> <li>• Source tracking - for contaminants</li> <li>• Multiple stressors</li> <li>• Assimilative capacity</li> <li>• Emerging contaminants framework - endocrine disruptors etc; biofuels</li> <li>• Push for an integrative approach - groundwater to surface to coastal</li> </ul>

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Issue	Detail of Concerns	Research still needed?
<p><b>Urban sustainability:</b></p> <ul style="list-style-type: none"> <li>Inefficient use of resources and inefficient transport, energy and waste services, management of hazardous/chemical risks, stormwater and water services, amenity, communication services</li> <li>Demand and suitability of land for urban land use</li> </ul>	<ul style="list-style-type: none"> <li>Managing urban growth</li> <li>Interaction of RA and TLA responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>Transforming urban form - i.e., why are we still building habitats for cars?</li> <li>Decisions being made at TA level? But it's not a TA issue</li> <li>Research on influencing human behaviour (and politicians)</li> <li>Research on incentives to promote affordable housing</li> <li>Models</li> <li>Valuing land for all purposes? Biodiversity, carbon, food etc - research on rural subdivision - versatile soil argument</li> <li>Research on responding to CC - e.g., transport etc</li> <li>Yes - much more needed</li> </ul>

Issue	Detail of Concerns	Research still needed?
<p><b>Treaty of Waitangi:</b></p> <ul style="list-style-type: none"> <li>Resource ownership (river beds and coastal resources)</li> <li>Impact of ownership changes on water management</li> </ul>	<ul style="list-style-type: none"> <li>Recognition of kaitiakitanga and Maori role for natural resources</li> </ul>	<ul style="list-style-type: none"> <li>Ownership of water and other resources - is this management or science?</li> <li>Where's the alignment between RC and Māori on resource use. - lack of understanding in RC's on Māori culture; might not be a research issue</li> <li>But, this does have a bearing on capability building - capacity of councils to deliver - information transfer to Māori and others and vice versa</li> <li>Development of frameworks for interaction with Māori on resource management issues is needed</li> </ul>

Issue	Detail of Concerns	Research still needed?
<p><b>Waste management and minimisation:</b></p> <ul style="list-style-type: none"> <li>• Effects of charging for refuse disposal</li> <li>• Poor historical standards for landfills</li> <li>• Fly tipping</li> </ul>	<ul style="list-style-type: none"> <li>• Interaction of RA and TLA responsibilities</li> <li>• What role for central Government and industry</li> <li>• Interaction of RA and TLA responsibilities</li> <li>• What role for central Government</li> <li>• NIMBY</li> </ul>	<ul style="list-style-type: none"> <li>• Lifecycle costings</li> <li>• Incentives for waste minimisation</li> <li>• Technologies for reuse</li> <li>• Scale of economy</li> <li>• Research needed under all these</li> <li>• Waste and sustainable homes etc</li> <li>• Water use; water efficiencies</li> <li>• Visualisation - landscape - dump next door</li> <li>• Contaminated sites - cleanup technology</li> </ul>

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Issue	Detail of Concerns	Research still needed?
<p><b>Degradation of coastal water quality:</b></p> <ul style="list-style-type: none"> <li>Including algae blooms and pathogens (public health)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of understanding of causes and impacts</li> <li>Poor health warning capability</li> <li>Links to general land use</li> </ul>	<ul style="list-style-type: none"> <li>Still don't understand algal blooms - CC effects; increase loading from land use;</li> <li>Source tracking</li> <li>Productivity and use of coastal waters - marine farming etc - esp in view of fish quotas</li> <li>Need to take closer look at this - based on new coastal policies</li> <li>Heaps of biosecurity issues</li> <li>Valuation of coastal waters - ecosystem services (ARC looking at this)</li> <li>Valuing coastal space (leading to charges) - Cawthron doing some</li> </ul>

Issue	Detail of Concerns	Research still needed?
<p><b>Greenhouse gas emissions:</b></p>	<ul style="list-style-type: none"> <li>• International commitments</li> <li>• Role of carbon sinks and their management</li> <li>• What roles for central and local government</li> <li>• Iwi concerns about windfall profits to existing forests</li> </ul>	<ul style="list-style-type: none"> <li>• Yes for more research</li> <li>• Or should we let central govt drive this?</li> <li>• But there is a link with RC issues - NOX, CH4</li> <li>• Denitrifier efficacy is a gap</li> <li>• Impact of nitrification inhibitors needs more research</li> <li>• What are the unexpected consequences of CC initiatives?</li> <li>• Wind energy mapping</li> <li>• Social aspects - NIMBY - landscape etc</li> </ul>

Issue	Detail of Concerns	Research still needed?
<p><b>Allocation coastal space to competing demands:</b></p> <ul style="list-style-type: none"><li>• Impact of aquaculture on amenity values, water quality and public access to coastal waters</li></ul>	<ul style="list-style-type: none"><li>• Allocation of coastal space. Extent of problem – how widespread is it</li><li>• How are cumulative effects and carrying capacity assessed</li><li>• What responses are being applied nationwide</li></ul>	<ul style="list-style-type: none"><li>• Development of a valuation system</li></ul>

Issue	Detail of Concerns	Research still needed?
<p><b>Degradation of urban and rural air quality in terms of public health and amenity</b></p> <ul style="list-style-type: none"> <li>• Visibility</li> <li>• Particulates</li> <li>• Indoor air</li> <li>• Spraydrift</li> <li>• Odour</li> <li>• Outdoor burning</li> <li>• Industrial emissions</li> <li>• Domestic emissions</li> </ul>	<ul style="list-style-type: none"> <li>• How widespread is the problem</li> <li>• Impacts on public health and amenity</li> <li>• Interaction of RA and TLA responsibilities <ul style="list-style-type: none"> <li>- nuisance</li> <li>- ambient/airshed</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing requirement</li> <li>• Standards of new wood burners</li> <li>• Refining ability to carry out inventories</li> <li>• Air-shed modeling</li> <li>• Epidemiology of contaminants other than PM10</li> <li>• And unknowns as we shift away from petroleum fuels etc</li> <li>• Transport emission near schools</li> </ul>

Issue	Detail of Concerns	Research still needed?
<b>Genetically modified organisms and new organisms and potential for environment impacts</b>	<ul style="list-style-type: none"><li>• Roles and responsibilities of government and industry</li><li>• International responses</li></ul>	<ul style="list-style-type: none"><li>• Seen as ERMA's job;</li><li>• RC role to understand GE and how a strategy could be used in a possible advocacy role</li><li>• Many different roles for GE</li></ul>

Issue	Detail of Concerns	Research still needed?
<p><b>How to allocate scarce water resources</b></p> <ul style="list-style-type: none"> <li>• Consumptive uses</li> <li>• Transferability of water permits</li> <li>• Potential for speculative users</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate technical methodologies for determining allocable volumes, especially for small streams</li> <li>• Appropriate approaches to resource monitoring/investigations</li> <li>• Changes in resource availability due to climate change</li> <li>• Iwi concerns related to resource ownership aspirations</li> <li>• Inefficient use of water -optimising end use of water, conservation measures, irrigation application techniques (eg border dyke)</li> <li>• Role of RA in optimising end use of water</li> <li>• Appropriateness of RMA “first in first served” principle</li> </ul>	<ul style="list-style-type: none"> <li>• Lots to do around valuation of water - economic and societal tools</li> <li>• Role of economic instruments in water management</li> <li>• Climate change link - quite a bit to understand</li> <li>• Ownership issues - iwi</li> </ul>

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Issue	Detail of Concerns	Research still needed?
<b>Institutional barriers to environmental management</b>	<ul style="list-style-type: none"><li>• Overlapping statutory roles</li></ul>	<ul style="list-style-type: none"><li>• Social and economic factors to look at</li><li>• Need for new capability</li></ul>

# **Workshop Session**

- **What will be the big future issues facing Councils?**
- **What can we do to prepare?**
- **What research or capability building is required to help prepare?**
  
- **Notes from the Report Back session follow:**

# Report Back

- Need a better ability in futures modelling that could help RC's determine research needs - and determine what scenarios mean to our patch
- Recognised need to involve SIGs
- Capability and capacity building within our organisations and within our own disciplines. We need to get a message out as to what the needs are. There are institutional barriers here, e.g., between councils.
- Need to be more clever at using what we've got
- Should make use of training opportunities within councils.
- Secondments between CRI's and councils difficult, but might be easier between councils.
- Or just try locating a CRI researcher within a council and don't consider it a secondment
- Opportunities for scholarship programmes

# Report Back (2)

- Also opportunity with iwi - “secondment” for knowledge transfer and reciprocal learning
- Should make better use of FRST money for training capability with Masters/PhD’s - to increase the market pool
- Constrained environmental resources are a big problem - tradeoffs need to be known and understood - clusters around behaviour - and changing behaviour; e.g., understanding forestry - carbon and soil;
- Visualisation research - soil mapping initiative - need to boost and use GIS more effectively
- Utilisation of mineral resources not really covered - does it need to be? Not clear what needs to be done here. Scenario building necessary. The world is running out of minerals. What’s in NZ? What are the environmental impacts. Even “rock resource” is an issue.

# Report Back (3)

- More research emphasis needed on reclamation and protection of coastal areas - with regard to climate change
- Natural hazards were overlooked in the top 12 and need to be included
- Research on methods to mitigate CC - e.g., vehicle emissions;
- Need to understand the differential impacts of CC policies throughout NZ.
- Treasury can do the modelling - but we need to advocate for it and the underpinning research.
- Mapping implications of sea level rise.
- Integration across the major issues; e.g., Dairy = emissions, land change, nitrate etc
- The mass and energy flows of some of our principle resource stressors. Implications of rising dairy prices!

# Report Back (4)

- What are the big impacts of expanding dairy!?
- What don't we need? Probably not as much on class 7 and 8 land use - as these will go into trees. So don't need to research alternative uses.
- Less emphasis on soil classification and related areas - but we need to know the impacts of land use and hydrology
- But we need pedologists for detailed soil mapping.
- Is resource inventory science? It's an information need - not research - but yes - we need to see that it is resourced.
- Need for much more information sharing. E.g., pest distributions and impacts. It's more about taking a collective approach that we all think is valid. I.e., to become national regulation?

# Report Back (5)

- What are the nationally significant databases from an RC perspective? Science is not just “research”.
- How do the RC’s have a national voice?
- SIGs share information well, but not so much at RMG.
- There is an obvious need to “team up”. Even e-mail groups to share information.
- FRST is anxious to engage and wants to formalise a relationship with us. We need to work out how we want this to work. Seems like we’d be sitting at the same table as key Govt depts.
- We often lack information on uncertainty which is a gap when communicating with stakeholders.

# Wrap Up

- **Report to be produced to use as a reference in finalising the Research Strategy and other uses**
- **Continued effort to go into developing Research Strategy including discussion with other stakeholders**

END