ENVIRONMENTAL RISK MANAGEMENT AUTHORITY
NGĀ KAIWHAKATŪPATO WHAKARARU TAIAO

ERMA New Zealand

# ENVIRONMENTAL RISK MANAGEMENT AUTHORITY

## *NGĀ KAIWHAKATŪPATO WHAKARARU TAIAO*

# Briefing for the Incoming Minister

***November 2008***

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# Introduction

This briefing provides a brief overview of the Environmental Risk Management Authority (ERMA New Zealand) and the issues it is facing.

ERMA New Zealand referred to as ERMA throughout this briefing comprises four formal elements: the Authority, Ngā Kaihautū Tikanga Taiao (Maori advisory committee), The Ethics Advisory panel and the Agency (staff).

The briefing is in three parts. **Part I provides information on ERMA and its role** in managing hazardous substances and new organisms.

**Part II outlines the general introduction relating to hazardous substances and new organisms** in New Zealand.

**Part III sets out current issues** that may either require your attention or might be controversial.

ERMA is established under the Hazardous Substances and New Organisms (HSNO) Act 1996 (The Act). The purpose of the Act is to protect the environment and the health and safety of people and communities by preventing or managing the adverse effects of hazardous substances and new organisms. It is an important component of the framework that promotes health, safety, environmental sustainability and innovation in New Zealand.

ERMA is a Crown Entity set up to regulate the introduction and use of hazardous substances and new organisms (including genetically modified organisms) under the HSNO Act.

# Part I What ERMA Does

ERMA's vision statement is ***"Safeguarding New Zealand's future by managing the risks of hazardous substances and new organisms."***

ERMA regulates over 100,000 different types of hazardous substances ranging from explosives, fireworks, poisons, pesticides, industrial chemicals, petrol and LPG, to consumer goods such as cosmetics and graphic materials. ERMA also regulates the importation, development and use of plants, animals and other new organisms including genetically modified organisms (GMOs). It does this by approving (or not approving) the substances or organisms and by attaching controls (conditions) to any approvals. It is not responsible for substances covered by other Acts, such as radioactive substances, human medicines, and most manufactured products.

ERMA is funded primarily by the Crown through the Non-Departmental Output Expenditure "Hazardous Substances and New Organisms Assessment and Management" in Vote Environment and partly about (6% of total revenue) by application fees**.** The total budget for 2008/09 is $10.798 million.

## Types of Approvals

### Hazardous Substances

The import or manufacture of a new hazardous substance requires an approval under the HSNO Act.

Types of approval include:

- approval to import or manufacture a new hazardous substance for release (i.e. general use);
- approval to import a new hazardous substance into containment or manufacture a new hazardous substance in containment (e.g. for scientific or field testing).

Approvals for hazardous substances in containment are granted mainly for research or storage, including for use in emergency situations.

### Group Standards

A Group Standard is an approval for a group of hazardous substances of a similar nature or type, or having similar circumstances of use. The risk of substances in each Group Standard is managed by a single set of conditions.

Substances can be grouped under a Group Standard by product type (e.g. for paints or cosmetics). Any new hazardous substance which complies with a Group Standard will not need its own individual approval.

### New Organisms

***Approvals for new organisms in containment***

ERMA may approve the importation, development or field testing of new organisms in containment in the following cases:

- the development of any genetically modified organism e.g. genetically modified crops;
- the field testing of any new organism;
- maintaining a new organism for use in an emergency;
- the conservation of any genetic material;
- the public display of any organism, e.g. in a circus or zoo;
- maintaining a new organism in containment to produce such things as antigens, biopharmaceuticals, enzymes, hormones or vaccines for release;
- maintaining new organisms in containment for diagnostic purposes; and
- other similar purposes.

***Conditional release approvals***

Conditional release approvals are intended to fill the gap between containment and full release approvals by allowing controls to be imposed on releases. They can cover a wide range of circumstances, from a scientific trial to a full commercial release.

***Full release approvals***

With these approvals there are no controls and the organism is unregulated with no monitoring. Once fully released, the organism is no longer considered a new organism in New Zealand.

# The Organisation

## Authority

The Authority, a Crown Entity, comprises six to eight members appointed by you under the HSNO Act. *Appendix 1* gives brief biographies of current Authority Members. The Authority is responsible for exercising the statutory functions set out in the legislation. Members of the Authority also comprise the governing body of the organisation.

## Ngā Kaihautū Tikanga Taiao

Ngā Kaihautū, the Māori Advisory Committee, a statutory body, has four to eight members appointed by the Authority. *Appendix 2* gives brief biographies of current Ngā Kaihautū members. Ngā Kaihautū is responsible for assisting the Authority to ensure that Māori interests and concerns are fully incorporated in the Authority's decision-making.

## Ethics Advisory Panel

The Ethics Advisory Panel, comprising three members, (*Appendix 3)* is a non statutory body established by the Authority to assist it in considering ethical and spiritual matters in its decision-making -

## Staff (Agency)

The organisation established to support the Authority has a staff of around 90. The Chief Executive has specific statutory powers and functions. An organisational chart is attached as *Appendix 4*.

### *Core Capability*

ERMA's core capability is in carrying out robust risk assessments and decision making processes.

To undertake its functions, ERMA has a core of specialist scientific staff with expertise in genetic modification, ecology, chemistry, toxicology and ecotoxicology. These staff advise the Authority (which itself has members with considerable scientific expertise) on applications through staff reports, known as Evaluation and Review Reports (E&R Reports). Over the last two years ERMA has found it difficult to recruit senior toxicology and ecotoxicology staff who tend to be trained and live offshore. This can place a constraint on what ERMA can achieve.

### *Relationships with Other Agencies*

ERMA is part of a network of agencies that make up the hazardous substances and new organisms regulation and compliance regime. The relationships between those agencies are crucial in making the HSNO Act work well, given that ERMA's role is as regulator and other agencies are responsible for enforcement. In particular, ERMA works closely with the Ministry of Agriculture and Forestry, the Department of Labour, the New Zealand Food Safety Authority, the Department of Conservation and the Ministry of Health.

### *Relationships with the Research Community*

ERMA works with Crown Research Institutes, Universities and the Foundation for Research Science and Technology, to ensure access to research required to support robust risk assessments.

### *Relationships with Māori*

The HSNO Act has specific provisions requiring certain Māori interests and the principles of the Treaty of Waitangi to be taken into account.

ERMA has set up a Māori National Network to maintain positive and mutually beneficial relationships with 'key influencers' in the iwi/Māori community and thus develop a broad pool of knowledge and experience of HSNO Act issues as they relate to Māori perspectives. This has proved to be a successful model and ERMA has received good feedback from the Network.

### *Relationships with Industry*

ERMA has extensive and ongoing relationships with many industry sectors and organisations both as users of hazardous substances and as applicants. Good communication with industry is important to the dissemination and uptake of information about safety rules and regulations.

### *Relationships with the Community*

As many applications are publicly notified, ERMA has close contact with a number of environmental NGO's and other interested members of the public. We also actively and regularly meet with the public and community organisations at various locations around New Zealand.

### *International Relationships*

ERMA has to take account of international obligations when deciding on applications and creating regulations. It has relationships with many international regulatory and scientific organisations.

# Part II General Introduction

## New Organisms

### *Genetically Modified Organisms*

Many members of the public view genetically modified organisms (GMOs) with concern. GMOs are often considered to be high risk. Consequently, issues relating to GMOs tend to be high profile.

New Zealand has one of the strictest regulatory regimes in the world for GMOs. There have been no releases to date of any GMOs in New Zealand, and all GMOs are in contained research facilities[1]. There are currently three active field tests of GMOs in New Zealand[2] and a further three which have ended and are in a phase of post-test monitoring.

In contrast, a number of developed nations (e.g. USA, Canada, Australia, Spain, France, Portugal and Germany) grow GMO crops commercially and many have a well-developed field testing programme.

The compliance regime for GMO research is also very strict. The Ministry of Agriculture and Forestry (MAF) is the sole enforcement agency. Laboratories and field test sites are visited and audited by MAF approximately every six months.

### *Other New Organisms*

As with GMOs, New Zealand has strict regulations for other new organisms such as plants, microorganisms and animals. These regulations are designed to preserve New Zealand's biosecurity. However, the downside of this system is that it can be an expensive and time consuming process for an applicant to obtain a full release approval for beneficial new organisms, such as new crops, forage grasses or biological control agents.

ERMA has a programme of working with new organism applicants to assist them to prepare robust and cost-effective applications.

For all new organism releases ERMA undertakes a robust risk assessment. Once a new organism is released it is in the environment forever, so an incorrect decision could have major consequences if the introduced new organism turns out to be a weed or pest. Consequently, applications for the release of a new organism are amongst the most significant for the Authority.

## Hazardous Substances

### *Complexity of the Regulatory Regime*

ERMA regulates more than 100,000 hazardous substances ranging from pesticides and explosives, to household chemicals (refer Table 1). These substances present a range of hazards such as explosiveness, flammability, corrosiveness, toxicity to people, or toxicity to the environment. The large number of substances regulated, the wide variety of uses they are put to, and the range of hazards they represent, means that the HSNO Act regime can be complex and difficult for people to understand.

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[1] As at 8 November 2008. An application to conditionally release a genetically modified vaccine for Equine Influenza is before the Authority with a decision due on 19 November 2008.

[2] As at 8 November 2008. The active field test approvals are GM Brassicas, and two for GM Cows. A further field test application (for GM Onions, leeks and garlic) is before the Authority with a decision due before 28 November 208.

**Table 1. Range of Hazardous Substances Managed under the HSNO Act**

| |
|---|
| **Explosives (e.g. fireworks, detonators);** |
| **Dangerous goods (e.g. petrol, diesel);** |
| **Toxic Substances (e.g. timber treatment chemicals, antifouling paints, cyanide);** |
| **Pesticides (e.g. 1080, methyl bromide);**[3] |
| **Veterinary medicines (e.g. flea treatments, wormers);**[4] |
| **Gases under pressure (e.g. air, LPG); and** |
| **Some household chemicals (e.g. paint, detergents, oven cleaner, weed killer).** |

The situation is exacerbated by the "performance-based" nature of the legislation. While performance-based regulation provides industry with more flexibility than "prescriptive" regimes, it also provides little specific guidance on how to comply and no certainty that a chosen solution provides the desired performance-based outcome. This situation can cause problems for small businesses in particular. Many small businesses do not have the time or expertise to keep abreast of the legislation, let alone work out how to comply with it. In those cases, businesses simply want a clear and detailed prescription setting out exactly what they need to do to comply, so that they can devote their time and expertise towards running their business.

Over the past two years, ERMA has devoted increased resources to provide clear and simple compliance guidance to industry sectors. Examples include HSNO Act compliance guides for embalmers, drycleaners, farmers, service stations, and electroplaters.

***High Risk Hazardous Substances***

Workplace solvents and flammables are most likely to cause harm to New Zealanders. However, the common public perception is that pesticides are the highest-risk hazardous substances. While pesticides have significant risks, they are heavily regulated both in New Zealand and internationally. One of the major achievements of the HSNO Act has been to bring New Zealand's pesticide regulations up towards international best practice. For higher-risk pesticides, purchasers and users now need to be trained and certified in their safe use.

***Reassessment Regime***

A key tool in the regulatory regime for hazardous substances is the ability to reassess a chemical if there are concerns about its effects, especially if there are alternatives available.

Reassessment is the only way of tightening (or relaxing) the rules around the use of an already approved chemical. Reassessments can be initiated through an external application (e.g. the Animal Health Board and Department of Conservation's application to reassess the vertebrate poison 1080) or by the Chief Executive of ERMA. ERMA has identified a priority list of 20 chemicals for Chief Executive-initiated reassessment (*refer Appendix 5)*. ERMA has committed to reassessing the chemicals on the list within the next five years.

The reassessment process can be both long and expensive and NGO's have expressed concern that resources allocated to reassessments are inadequate.
A key focus for ERMA in the next two years will be the reassessment of methyl bromide. The reassessment application will involve coordination and input from a number of other government agencies who have an interest in methyl bromide use in New Zealand.

[3] Also regulated by NZ Food Safety Authority
[4] Also regulated by NZ Food Safety Authority

# Part III Current Issues

## Authority Appointments in 2009

**One of your roles is to appoint members to the Authority.** The terms for Dr Manuka Henare, Dr Max Suckling and Dr Deborah Read expire in 2009. Dr Henare's and Dr Suckling's terms expire in March 2009 and they will have served the customary six years (two 3-year terms). Dr Read's appointment expires in December 2009 and she will have served one 3-year term.

## Hazardous Substance (HS) Compliance and Enforcement

The Authority's single biggest concern in relation to the HSNO Act is the level and nature of the compliance and enforcement regime for hazardous substances. The Authority has expressed concern about this for the past three years.

The level of compliance prior to the HSNO Act (e.g. under the Dangerous Goods Act) was variable. But data suggests that the number of compliance visits has reduced significantly, from over 20,000 visits per annum in 2001 to around 6,000 visits per annum in 2007. Most of these visits are undertaken by the Department of Labour. That equates to an average of approximately one inspection per business per 25 years. The number of inspections may fall further in 2009 with the expiry of time-limited funding to the Department of Labour (see *DoL resourcing* below).

The current compliance regime is a complex two-tier system. Private individuals (Test Certifiers – see below) certify that a site or storage system is compliant or that a person has the necessary skills to safely use a hazardous substance. Enforcement agencies inspect sites, verify that the certification is valid and, if necessary, suggest corrective actions or initiate enforcement proceedings.

There are 92 different enforcement agencies (including the 12 regional councils). These agencies have varying commitment to, and capability of, undertaking their HSNO Act enforcement tasks. For example, some councils do not carry out any HSNO Act enforcement activity.

ERMA's role is to monitor the effectiveness of the regime, coordinate and support the work of the enforcement agencies, and support the test certifier regime.

Improvement of the HSNO compliance regime has started. There is currently a Hazardous Substances Compliance and Enforcement Strategy which is designed to improve compliance with the HSNO Act. Initially the Strategy puts emphasis on public awareness activities and providing user-friendly information to a wide-range of new stakeholders (many of which are small-medium enterprises new to the HSNO Act and its requirements). The second stage concentrates on light-handed enforcement through compliance orders and prosecutions where necessary, with the third phase focussed on sustainable compliance and enforcement.

The HSNO Act relies heavily on certified, private market providers (Test Certifiers) to perform location, equipment and personnel assessments which are designed to ensure the safe management of hazardous substances. The costs of this work are met by industry and end users of hazardous substances. An interdepartmental working group identified a number of concerns with the test certification regime and the need for a review. The review is being undertaken by the Ministry for the Environment and is expected to be completed by 1 July 2009.

### *Department of Labour Resourcing*

The most significant enforcement agency is the Department of Labour (DoL), which enforces the rules for use of hazardous substances within workplaces. For a number of years, the DoL have struggled to provide the appropriate resources for this activity.

The DoL has a budget of around $4.7 million per annum for hazardous substance compliance activity in the estimated 150,000 workplaces in New Zealand. This level of funding allows DoL to do approximately 5,500 to 6,500 inspections per annum.

Based on a 2005 "stock take" report on hazardous substances by consultants Montgomery Watson Hazra, it is estimated that an appropriate level of site visits would be around 15% of relevant workplaces per annum. This would equate to approximately 20,000 workplace visit per annum (roughly the number inspected prior to the HSNO Act).

The Department of Labour is also focused on increasing the quality of its HSNO enforcement activity, through investing in the inspectorate's competence and understanding of HSNO. Raising the inspectorate's HSNO capability as well as its capacity is crucial to increasing the effectiveness of the Department's HSNO enforcement resources.

**Two matters where your support and assistance may be required** to ensure momentum is retained are as follows:

1. A significant proportion of DoL's HSNO Act compliance work is funded by a time limited appropriation which expires on 1 July 2009. If this funding is not continued (or an alternative source of funding is not found) then the capability of DoL to deliver their part of the HSNO compliance regime will fall further. DoL is unable to transfer other appropriations to undertake this work.

2. There is currently a Bill before Parliament (*The Health and Safety in Employment Amendment Bill No 2)* which would enable the Crown to recover a portion of the costs of HSNO Act enforcement functions through the Health and Safety Levy. If this Bill is passed in a timely manner, and if the Crown appropriates the Health and Safety Levy funds to DoL for HSNO compliance, then the additional funding could be available in the 2010/2011 year.

## Quality Regulations Bill

The Quality Regulations Bill was introduced to Parliament on 9 September 2008 and includes a number of proposed changes to the HSNO Act which are designed to streamline HSNO processes and thus reduce compliance costs as follows:

- Facilitate rapid assessment of certain classes of applications;
- Allow discretion to publicly notify hazardous substance release applications that otherwise do not qualify for rapid reassessment;
- Give the Authority the ability to delegate additional low risk applications to the ERMA Chief Executive.

ERMA has been involved in the preparation of this bill and supports it. **Your input to Parliamentary consideration would be appreciated.**

## Methodology Review

The Methodology is a regulation which sets out how ERMA will consider applications. At the request of the previous Minister for the Environment, ERMA has commenced consultation on a revised Methodology to replace the current one which has been in operation since 1998.

In mid February 2009, **ERMA will provide you with a final proposed revised Methodology** together with a report on the results of the consultation. If you approve the Methodology, it will be promulgated by an Order in Council.

## Applications of Interest

Below is a list of potentially controversial or large applications that ERMA is currently processing:

- GM Alliums (onions, leeks and garlic) – a decision is due before 28 November 2008
- GM Equine Influenza Vaccine Conditional Release Application – A decision is due by 19 November 2008
- Reassessment of Endosulfan – A decision is due before the end of 2008;
- Reassessment of Methyl Parathion- A decision is due before the end of 2008
- GM Animals Field Test and Outdoor Development Applications – Currently under legal challenge. Hearings unlikely to be earlier than mid 2009.
- Reassessment of Methyl Bromide – application currently being prepared.

# Appendix 1. Authority Member Profiles

**Richard Woods CNZM, MA - Chair**

Richard Woods was appointed to the Authority as its Chair with effect from April 2008. He is also New Zealand Chair of the New Zealand-France Friendship Fund. From 1999-2006 Richard was Director (CEO) of the New Zealand Security Intelligence Service. In his previous diplomatic career he served as Ambassador in Tehran, Athens, Moscow and Paris (where he was also Permanent Representative to the OECD). At the Ministry of Foreign Affairs and Trade in Wellington he served as Director for Middle East and Africa and as Director of External Aid. He was made a Companion of the New Zealand Order of Merit in 2007.

**Max Suckling BSc (Hons), PhD – Deputy Chair**

Max Suckling was appointed to the Authority in February 2003, to the position of Chair of the New Organisms Committee from July 2004, and to the position of Deputy Chair in April 2008. Max is an insect ecologist with 20 years experience in research and research management and is a past President of the New Zealand Plant Protection Society. He completed his PhD in entomology in 1983 at Lincoln University, following completion of a post-graduate diploma in Biotechnology (1980) and a BSc (Honours) in Zoology at Massey University (1978).
He joined DSIR in 1983, and has worked for HortResearch since it was formed in 1992, where he has contributed extensively to the development of sustainable methods for horticultural production in New Zealand. In November 2003, he was made Fellow of the Royal Society of New Zealand in recognition of his significant scientific leadership on biosecurity matters. Max is also a recipient of the New Zealand 1990 Commemorative Medal for Excellence in Science.

**Manuka Henare BA (Hons), PhD Te Aupouri, Te Rarawa people of Tai Tokerau**

Manuka Henare was appointed to the Authority in January 2003, and to the position of Chair of the Audit Committee in May 2004. Manuka has a doctorate in Māori Studies and is currently the Associate Dean of Māori and Pacific Development and the foundation Director of the Mira Szāszy Research Centre for Māori and Pacific Economic Development with the University of Auckland Business School. He is also Co-ordinator of the Graduate Diploma of Business (Māori Development) and Masters of Management (Māori). He was previously a Senior Lecturer in Māori Studies at Victoria University of Wellington and he also lectured in the Masters of Development Studies on culture, religion and economic development at Victoria University and the School of Māori and Pacific Development, Waikato University. Manuka has published articles on Māori philosophy and ethics, the Treaty of Waitangi / Te Tiriti o Waitangi, development theory and practice, social policy, and globalisation and indigenous peoples.

**Kieran Elborough, BSc (Hons), D. Phil**

Kieran Elborough was appointed to the Authority in August 2004. He serves on the new organisms standing committee and is currently the chair of the GMO standing committee. Kieran followed a degree in microbiology and microbial genetics from the University of Dundee with a doctorate from Imperial College in cancer biochemistry. He then lectured in plant molecular biology and human biochemistry at the University of Durham before moving, six years ago, to New Zealand to join ViaLactia, a subsidiary of Fonterra, as chief science officer-forage. He is currently a Business Leader with HortResearch.

**Helen Atkins, LLB**

Helen Atkins was appointed to the Authority in August 2004. Since April 2008 she has been Chair of the Hazardous Substance Standing Committee. She is currently a partner at the law firm of DLA Phillips Fox where she specialises in public, environmental, resource management and local government law. Helen's degree is from the University of Canterbury. In addition to working for law firms, she has worked in the public sector in both England and New Zealand. Over the past fifteen years especially, she has been involved in law reform in the environmental area with a particular focus on the Resource Management Act 1991. In 2003, Helen was a member of a special working party established by the Ministry for the Environment to review the hazardous substance elements of the HSNO Act.

**Valerie Orchard, PhD**

Val Orchard was appointed to the Authority in May 2006. She is currently the Science and Research Manager for ESR. Val is actively involved in science strategy and has a special interest in ensuring that research underpins society's need for people to live and work in safe and healthy environments. Val was the Research Manager at the Consumers' Institute for three years and was a practising researcher for 17 years with the DSIR Soil Bureau and Landcare Research. She is an experienced research microbiologist with considerable field work experience, including Antarctica. She has led teams on Public Good Science Funded projects and has published over 60 refereed papers as well as numerous reports and articles. Val also served on the Victoria University of Wellington Council for six years.

**Deborah Read, MB ChB, DComH, FAFPHM (RACP**

Deborah Read was appointed to the Authority on 15 December 2006. Dr Read is a public health medicine consultant, Medical Officer of Health for the Regional Public Health division of Hutt Valley District Health Board, Chair of the Ministry of Health's Organochlorines Technical Advisory Group and Deputy Chair of the Medical Council of New Zealand. She has published extensively on issues relating to environmental risks and public health, and received a World Health Organisation Fellowship in 1995.

**Shaun Ogilvie BSc, MSc (Hons), PhD (Te Arawa, Ngati Awa)**

Shaun Ogilvie was appointed to the Authority in July 2008. Shaun has a PhD in Ecology from the University of Canterbury and is currently a Senior Lecturer in Wildlife Management at Lincoln University. Shaun is also the Tumuaki of the Kaupapa Māori Unit at Lincoln's Bio-Protection and Ecology Division. Shaun was previously Principal Scientist - Māori Research at the National Institute of Water and Atmospheric Research in Christchurch, and Scientist at Manaaki Whenua - Landcare Research. He was a member of Ngā Kaihautū Tikanga Taiao from 2004 to 2008. Shaun's research interests include the development of techniques for the management of animal pests. He has also been involved in investigating the fate of 1080 in the environment, and has published a number of articles in this area.

# Appendix 2. Ngā Kaihautū Tikanga Taiao Member Profiles

**Glenice Paine, Tumuaki (Chair), Te Atiawa; Ngāi Tahu**

Glenice Paine has been a member of Ngā Kaihautū since 2003, and was appointed Tumuaki (Chair) in October 2008. Glenice brings a wealth of experience in Māori organisations to this new role. She is currently a Resource Management Consultant with considerable experience in iwi resource management issues. She is accredited under the RMA Making Good Decisions Programme. Glenice is a Trustee on Te Atiawa Manawhenua ki Te Tau Ihu Trust and is also involved in a wide range of community initiatives.

**Te Kei Merito, Tumuaki Tuarua (Deputy Chair), Mataatua; Te Arawa and Tainui**

Te Kei Merito was appointed to Ngā Kaihautū in June 2001. Te Kei is currently employed by the Department of Conservation as Kaihautū Kaupapa Atawhai for the Bay of Plenty Conservancy. After retiring from a 25 year career with the New Zealand Army, Te Kei worked in a number of roles for the Department of Labour and Whakatane District Council. Te Kei is also Deputy Chair for Te Rūnanga o Ngāti Awa and kaumatua for Ngāti Awa and Ngāti Pukeko of Whakatane. Te Kei was re-appointed to Ngā Kaihautū in June 2007.

**Janis (Wiki) Walker, Ngāti Hine**

Wiki Walker was appointed to Ngā Kaihautū in October 2008. She currently works at the Manukau City Council as an Environmental Policy Planner (tangata whenua). Wiki has a Post Graduate Diploma in Business Administration, a Bachelor of Social Science Psychology and a Diploma in Environmental Studies. She is studying towards a Masters in Planning Practice.

**James Ataria; Rongomaiwahine, Ngāti Kahungunu, Ngāti Tuwharetoa**

Jamie Ataria was appointed to Ngā Kaihautū in May 2005. He has a doctorate in environmental toxicology from Lincoln University and is currently a researcher in the Built Environments and Sustainable Society Team at Manaaki Whenua (Landcare Research). He specialises in mechanisms of chemical toxicity in vertebrate wildlife species and the development and implementation of biochemical and physiological processes as tools for assessing chemical impacts on wildlife. James is also involved in initiatives to increase Māori capability in environmental research. Jamie was re-appointed to Ngā Kaihautū in May 2008.

**Matire Harwood, Ngā Puhi**

Matire Harwood was appointed to Ngā Kaihautū in July 2004. Matire has a Bachelor of Medicine and Surgery and is currently working as a Māori health researcher at the Medical Research Institute of New Zealand and Clinical Director at Tamaki Healthcare PHO in Auckland. Matire was re-appointed to Ngā Kaihautū in July 2007.

**Bella Tuau; Ngāti Porourangi, Ngāti Pou, Ngāti Korokikahukura, Ngāti Karewa Hikairo**

Bella Tuau was appointed to Ngā Kaihautū in May 2005. She is currently working with Waikato District Health in Hamilton as a Health Protection Officer. Bella has a Bachelor of Science, and Diplomas in Environmental Health Science, Putaiao, Health Studies and Māori Laws and Philosophy. Bella was re-appointed to Ngā Kaihautū in May 2008.

**Darcia Solomon, Ngāi Tahu; Rangitane; Ngāti Kuia; Ngāti Apa; Ngāti Toa; Ngāti Raukawa; Te Atiawa**

Darcia Solomon was appointed to Ngā Kaihautū in June 2001. Darcia represented Ngāi Tahu on the Nelson / Marlborough Conservation Board for eleven years. She is a member of Te Rūnanga o Kaikoura. Her background is in environmental management and customary rights of Māori and she is actively involved in hapū and iwi development and with activities of the Takahanga Marae in Kaikoura. Darcia was re-appointed to Ngā Kaihautū in June 2007.

**Dr Nicholas (Nick) Roskruge, Ātiawa ki Taranaki, Ngāti Tama**

Nick Roskruge was appointed to Ngā Kaihautū in October 2008. He is currently senior lecturer at the Massey University Institute of Natural Resources; his professional specialty is horticulture and sustainable Māori economic development. Nick has a PhD in Soil Science, a post-graduate diploma in Māori Resource Development and a Bachelor of Horticulture (Technology). He is currently Chair of Tāhuri Whenua Incorporated Society— a National Māori Vegetable Growers Collective.

# Appendix 3. Ethics Advisory Panel Member Profiles

### Denise Church QSO - Convenor

Denise Church has been a member and Convenor of the Ethics Advisory Panel since its establishment in April 2004. Denise has degrees in Zoology, Economics, Resource Management, and Urban and Regional Planning.
She has worked in the field of environmental management since 1977, with experience in New Zealand, the USA, and the UK. From 1996 to 2001, Denise was Chief Executive at the Ministry for the Environment.
She is now on the Boards of the Foundation for Research, Science and Technology, the National Centre for Tertiary Teaching Excellence, the Wellington Zoo Trust, and WWF New Zealand. She practises as a consultant in leadership development, and policy and strategic management.

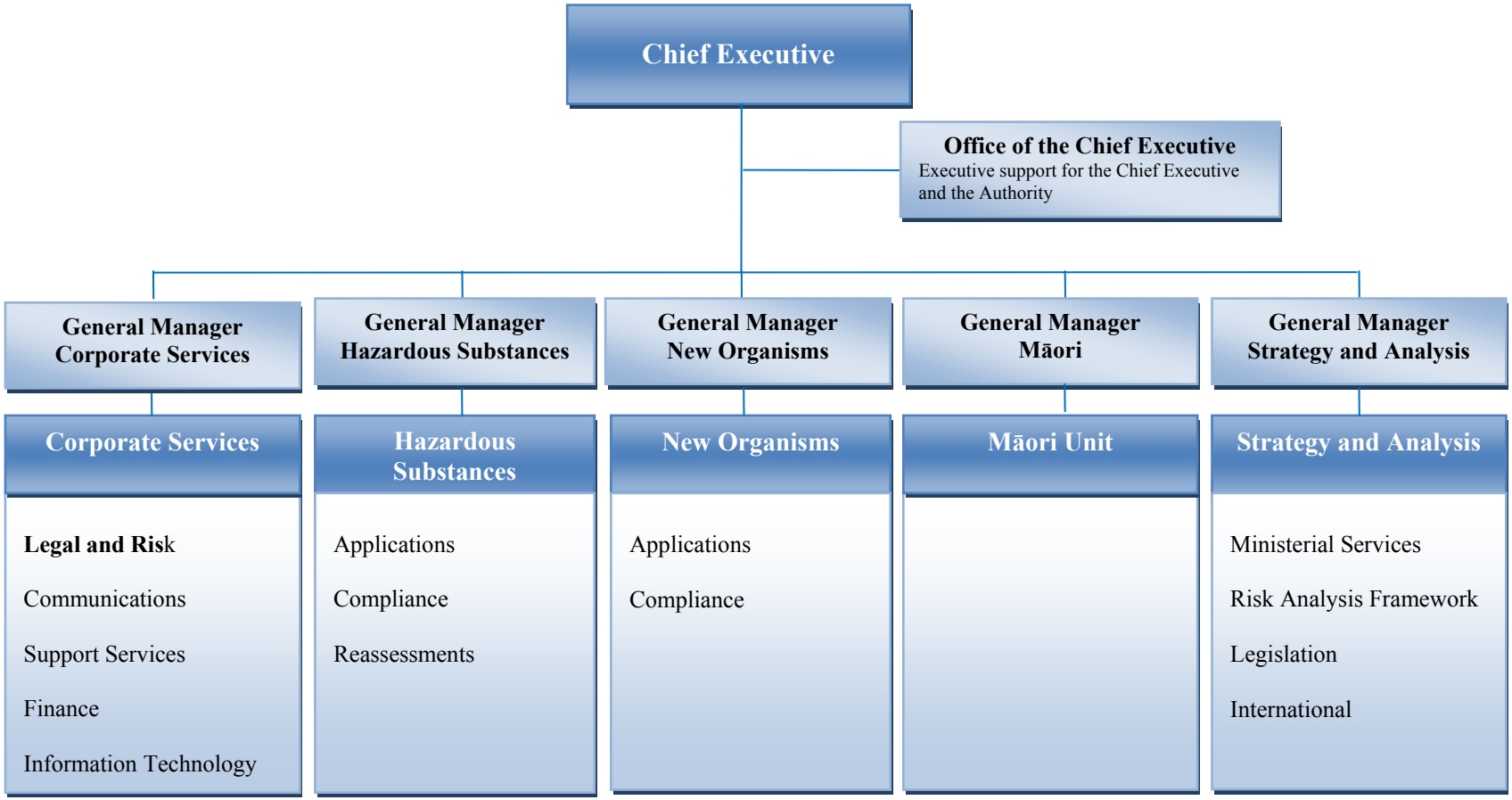
### Professor Sylvia Rumball CNZM

Sylvia Rumball has been a member of the Ethics Advisory Panel since its establishment in April 2004. She has an MSc (First Class Hons) from the University of Canterbury and a PhD in Chemistry from the University of Auckland. Sylvia is the Assistant to the Vice-Chancellor (Research Ethics) at Massey University.
Sylvia is involved with research ethics at the institutional, national and international level. She is currently Chair of the New Zealand Advisory Committee on Assisted Reproductive Technology, Chair of the Massey University Human Ethics Chairs Committee and a member of the ICSU Committee on Freedom and Responsibility in the conduct of Science.
She is a former member of the UNESCO International Bioethics Committee, the Health Research Council Ethics Committee and a former chair of the National Ethics Committee on Assisted Human Reproduction. She has also been an auditor for the New Zealand Universities Academic Audit Unit.
Sylvia was made an Officer of the New Zealand Order of Merit for services to science in 1998 and in 2008 was elevated to Companion.

### Associate Professor Nicholas Agar

Nicholas Agar joined the Ethics Advisory Panel in April 2008. Nicholas has a BA with major in Philosophy from Auckland University, Postgraduate Diploma in Arts in Philosophy from Otago University, MA in Philosophy from Victoria University of Wellington and a PhD in Philosophy from the Research School of Social Sciences, Australian National University, Canberra, Australia.
He has written many publications including Life's Intrinsic Value: Science, Nature and Value, (Columbia University Press, 2001) and Perfect Copy: Unravelling the Cloning Debate, (Cambridge: Icon Books, 2002).

# Appendix 4. ERMA Organisational Chart



# Appendix 5. Chief Executive Initiated Priority Reassessment List

- Pentachlorophenol and its sats;.(**Approval revoked**)
- Endosulfan and its formulations; (**Decision due before the end of 2008**)
- Methyl-parathion and its formulations; (**Decision due before the end of 2008**)
- Azinphos methyl and its formulations (**Reassessment commenced**)
- Dichlorvos and its formulations; (**Reassessment commenced**)
- Methyl bromide; (**Reassessment commenced**)
- Methyl-arsenic acid and its formulations; (**Reassessment commenced**)
- Trichlorfon and its formulations (**Reassessment commenced**)
- Acephate and its formulations;
- Anti-fouling paints;
- Benomyl and carbendazim and their formulations;
- Carbaryl and its formulations;
- Chlorothalonil and its formulations;
- Chlorpyrifos and its formulations;
- Diazinon and its formulations;
- Dimethoate and its formulations;
- Fenitrothion and its formulations;
- Methamidophos (60%) and its formulations;
- Paraquat and its formulations; and
- 2,4-D, its salts and esters and formulations containing these substances.