

# Scoping Research, Science and Technology Priorities for Māori in the Fishing, Farming and Forestry Sectors

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# 1. Purpose

This paper scopes research, science and technology priorities for Māori in the fishing, farming, and forestry sectors. It seeks input to help identify what the priority topics are in these sectors for Maori, and what the research questions are that emerge from these priorities.

The priorities identified through this process will inform the Māori specific investment signals in the 2007/08 PGST and NERF investment processes across relevant portfolios and implementation of the Foundation's Maori Research and Innovation Strategy.

Any comment should be provided to [john.kape@frst.govt.nz](mailto:john.kape@frst.govt.nz) by 5pm 21 March 2007. Please contact John Kape by email, or on 04 9177 831 or if you wish to discuss the issues raised in this paper.

This paper starts with introductory background and discussion on general issues that are distinct to the Maori sector, before moving into the specific priorities for Maori in each of the fishing, farming and forestry sectors.

## Disclaimer

This discussion paper does not represent Foundation policy.

# 2. Background

The Foundation's [draft Māori Economic Innovation Strategy](#) includes an overarching target outcome to **double export revenue from Māori owned businesses or resources by 2015**. The target sectors include the 'fishing, farming and forestry' sectors. The table in Appendix 1 includes the Foundation's estimated revenue targets for each sector.

The Foundation with Te Āra Pūtaiao (Māori Managers in Crown Research Institutes) organised a meeting of Māori sector representatives in January 2007 to help scope priorities. This paper lists some of the priorities identified in that meeting.

# 3. General overarching issues

## 3.1 Relevant and distinct issues

The issues identified in this paper fall into two general categories i.e. issues distinct to the Maori sector and issues of wider general relevance with particular importance to the Maori sector.

The distinct issues typically reflect distinct culturally based drivers, for example issues that are focused on species of cultural importance or arise from the distinct nature of the Maori asset

base. For distinct issues the type of research will be different from wider industry or sector good based research.

Relevant issues typically do not reflect cultural drivers for example improved productivity of Greenlip Mussel farming or lifting productivity of New Zealand Dairy Farms. They are however important to achieving growth of the Maori economy for the benefit of New Zealand. One of the opportunities presented by the relevant issues of particular importance to Maori is how to best transfer relevant knowledge and technology to Maori enterprises i.e. the research topics may not be inherently different but the development pathways and the research end user engagement and implementation pathways may be.

Distinct and Relevant issues are discussed in more detail in section 6 of this paper.

### **3.2 Export revenue or profitability**

The participants at the meeting all identified that the Foundation's focus on exports from Maori owned businesses was not the best focus for development of the Maori economy. They each preferred a target outcome focused on R&D that lifted the profitability of Maori enterprises in the forestry, farming and fishing sectors. This was particularly the case given that Maori businesses, except possibly in fishing, do not typically export directly (although much of the production is destined for export).

- There should be a focus on initiatives that lift profitability of Maori enterprises in the forestry, farming and fishing sectors.

The Foundation is seeking **your comment** on this i.e. In your view should the Foundation's overarching Maori economic innovation target outcome be focused on improving profitability of Maori enterprises in the target sectors rather than export revenue.

### **3.3 Scale and who to engage**

The participants at the meeting identified that to maximise potential profit and revenue growth in the Maori economy research providers should engage Māori entities with commercial scale and/or potential reach across the Māori sector. This includes for example in the Seafood Industry Aotearoa Fisheries Ltd, in Agriculture the Federation of Māori Authorities farming based clusters, and for Forestry, the Federation of Māori Authorities Forestry cluster. The engagement should be driven by priorities identified in the R&D strategies of cluster groups or of groups with substantial commercial capability.

## 4. Individual sector issues

This section lists the development priorities identified for each sector.

### 4.1 Māori seafood sector

#### **Sustainability of fish stocks – ‘Protecting the base’**

Sustainable management of fish stocks of commercial importance to Māori owned businesses. This includes species of key commercial importance to Māori fishing businesses such as hoki, orange roughy and squid. A particular and potentially distinct priority is for sustainability of species of cultural and economic importance such as eels, paua, crayfish, moki and kina.

#### **Growing markets**

This includes:

- extracting greatest value from existing fish resources
- improved fish capture, packaging, longevity of shelf life and fresh to market technologies that lift returns and profitability
- improved quality and profitability of existing fish for example. Improved oyster breeding stocks that produce oysters with better flavour and shape was identified as a particular issue.

#### **Aquaculture and new fishery development**

Increase in harvest volumes and quality including:

- enhancing the efficiency, growth, profitability and quality of existing commercial important aquaculture species such as mussels and oysters
- growth in new profitable aquaculture species and those of cultural and economic importance. Eels were identified as a particular distinct priority
- development of new fisheries, for example scallops, surf clams and deep water crabs
- grow existing fisheries for example reseeding paua beds, a species of cultural and economic importance, i.e. potentially a distinct priority.

#### **Operational efficiency**

Improved operational efficiency such as energy efficiency within Māori owned fish harvesting and processing operations.

## 4.2 Māori Land Development - agriculture and forestry sectors

### Cross sectoral priorities for Māori forestry and farming sectors – *‘the land endures’*

These two sectors share a common and obvious feature, they are both land based. The land resources are typically owned by collective Māori organisations on a long term inalienable basis. Collectively owned land has strong cultural and historical links that bind whanau, hapu and iwi together.

The primary interest of Māori in the land, and the restricted ability to sell, emphasises the importance of optimising the productive potential of the land and ensuring sustainability. This results in the following cross sectoral priorities. Both of these reflect a distinct Maori world view.

- a. Optimising the productive potential of Māori land in particular developing tools that will enable selection of optimal land use. This needs to be approached from a perspective that the distinct economic, social, environmental and cultural values or criteria of whanau, hapu and iwi. It includes the need for biophysical data that feeds useful tools which provide for effective decision making and business management. These types of tools could usefully be extended into a tool that maps the range of productive resources e.g. geothermal resources within the influence of whanau, hapu and/or iwi economic authorities. Māori specific resource potential information at a national scale could contribute to strategic planning for these sectors and potentially inform policy development.
- b. Ensuring the long term sustainable use of Maori collectively owned land. This includes sustainable land use options that consider the distinct biophysical resource base of Maori land and distinct management approaches that reflect a Maori world view.

## 4.3 Māori agriculture sector

This section lists priorities identified by the group for the Maori agricultural sector

### Constraints on freedom to operate and sustainability solutions

It is important to have a good understanding of the distinct Māori land base its challenges and opportunities. Due to the inalienable nature of the Maori land base, i.e. the restricted ability to sell, constraints on ‘freedom to operate’ potentially have a disproportionately large effect on Maori land owners. Examples of the disproportional large impact of constraints on freedom to operate on Maori land include:

- Indigenous forest conservation. The Maori land estate includes a higher proportion of land that is reverting to indigenous plant cover.
- There is also possibly a higher proportion of Māori land that borders water bodies compounding the impact of water conservation policies on the Māori land estate.

- Climate change will also have an impact on the cultural values and the production potential of the inalienable land base

It follows that

- Understanding how farm systems impact on sustainability issues and having solutions to negative impacts is an issue of particular importance to Maori land managers.

The search for solutions needs to address the distinct cultural and economic drivers of the Maori.

- Better information on a national and regional scale of the Māori land base and impacts of policy on this estate is important to inform national and regional policy development and to provide viable sustainable management options that address the distinct attributes of the Māori land estate.

### **Unlocking the potential of small blocks and underutilised land**

The Māori land base estate a large number of smaller blocks with marginal viability as large meat, wool or dairy units. They are typically underutilised.

Discovering ways to unlock the potential of small and under-utilised blocks is particular important to unlocking the potential of Maori land and people. This is an area that is also of potential relevance to unlocking the productive potential of small land management blocks throughout New Zealand.

### **Maximising agricultural productivity of Māori pastoral land**

Lifting the production of existing dairy, beef or sheep properties. This includes:

- clear pathways to transfer new technologies into Māori farming enterprises as early adopters of new technologies
- addressing the distinct production potential issues of Māori farming enterprises.

### **Improving product quality and developing added value products**

- Improve the quality and market value of existing product ranges.
- Develop new opportunities that Māori businesses can establish a niche and grow from.

This includes leveraging the scale and distinct attributes of Māori businesses into new opportunities as a critical pathway to raising the overall profitability of the Māori agricultural sector.

## Water and energy efficiency

Improving water and energy use efficiency that results in increased profitability of Māori owned agricultural enterprises.

### 4.4 Māori forestry sector

The Maori forestry sector sits within the distinct context of collective ownership and management described above. Meeting participants identified that current industry research arrangements will not specifically address the particular needs of Maori forestry because:

- the industry is made up of large companies with forest estates of between 100,000 – 200,000 hectares and a second tier of forest owners in the 50,000 -100,000 hectare scale. Then there is proliferation of smaller owners
- many of the large players are vertically integrated up the value chain with interests in wood processing.

The Maori forestry estates are typically smaller, diffuse and not vertically integrated. The Federation of Māori Authorities Forestry Cluster has an R&D strategy. The following are identified as the priority “technical” objectives in the cluster’s strategy.

Programme	Ranking	Objectives
Wood Quality & Differentiation	1	To capitalise on the inherent quality features of wood fibre from both Māori forests and their supply chain.
Energy supply and use	2	To ensure security of supply and cost of energy.
Alternative species	3	Maintain and enhance values of indigenous forests.
Industry Development	4	To develop Māori science capability <sup>1</sup> to meet the future requirements of the Māori forestry.
Environmental & Social Sustainability	5	To have technically and commercially robust systems for the management of carbon issues and opportunities for Māori forestry.
Industry Development	6	To facilitate the adoption of appropriate information technology to optimise business operation for Māori forestry.

The strategy also outlines a range of governance and market intelligence objectives that guide the detail of these technical objectives for example ensuring that research and development is based on robust information on market trends.

The meeting also discussed Māori Forestry Information Planning Tools including:

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<sup>1</sup> Develop Maori science capability in this context is primarily development of the ability of Maori forestry enterprises to identify their science needs and uptake relevant science results and outcomes. It may also include development of Maori forestry scientists and forestry science focused on Maori forestry issues.

- a database of the national Māori productive forest estate including species, age and wood use properties
- integrating this information with market information on what species and properties are best matched to different market opportunities including 'carbon farming'.

The cluster identified it is interested in investing R&D to support their growth of their businesses and the identification of new opportunities based on their forestry and land resource. The cluster's strategy identifies specific priority projects aligned to its technical objectives.

## 5. Enhancing uptake

This section lists a few issues relevant to enabling Māori business to innovate through R&D.

- Engage key influencers.
- Support entrepreneurs i.e. those with the ability to take an idea to market.
- Establish a Māori business incubator.

## 6. Addressing issues distinct to the Māori sector

The Ministry of Research Science and Technology's *Vision Mātauranga* policy framework encourages research that contributes to unlocking the innovation potential of Māori knowledge (including cultural values), people and resources. It particularly encourages research that *contributes to economic growth through distinctive R&D*. This is focused on research that is distinctive by either the nature of the topic or how it is undertaken. The sections above scopes issues that are potentially distinct research as well issues that of particular importance to Maori economic development. **The Foundation seeks further input on what distinct issues may be and how these may be best progressed.** The section below summarises issues that may be distinct for the Maori farming, forestry and fishing sectors.

### 6.1 Distinct issues for the Māori seafood, farming and forestry sectors

#### Setting the context

There is a cultural imperative for Māori to collectively own and manage land and marine resources for the long term benefit of the people. The land is typically inalienable. This limits both the ability to sell and raise finance on these assets. The primary interest of Māori in the land and marine resources, and the restricted ability to trade, emphasises the importance of maximising the productive potential of these assets.

## **Distinct legislative or policy requirements**

There are a number of distinct legislative or policy requirements that potentially influence R&D priorities for Maori.

In the fisheries sector the Maori Fisheries Settlement Act enables the transfer of fisheries assets to collective tribal management authorities. The settlement itself includes 20 per cent of the quota of all new species bought into the Quota Management system. Similarly the Maori Aquaculture Claims Settlement Act commits the Government to providing 20 per cent of all new aquaculture space to Maori. These provisions are more in the nature of enabling Maori participation in the industry i.e. they emphasise the importance of Maori being engaged in industry good research and governance provisions. The legislative and policy provisions that do potentially encourage distinct fisheries research are those related to providing for customary fisheries management mechanisms. The requirement to transfer fisheries assets into the hands of collective Maori organisations may also influence the type of research.

In the Maori land management Te Ture Whenua Maori Act (Maori Land Act) legislates an emphasis of Maori land being retained in Maori ownership and enables a range of distinct Governance options to manage this inalienable asset. This context influences the type of development important to Maori and the distinct issues identified in this paper.

The Resource Management Act encourages kaitiakitanga (sustainable management of natural resources of cultural importance to Maori). Kaitiakitanga is a distinct management approach that reflects the distinct cultural priorities of Maori.

## **Distinct and relevant research**

As stated above the primary interest of Māori in the land and marine resources, and the restricted ability to sell, emphasises the importance of maximising the productive potential of these assets.

This issue both sets the context for the importance of research that has the potential to lift the productivity of Māori land and marine resources and influences the type of research to be undertaken.

Relevant research can be split into two categories. The first is general research and new technology that has the potential to lift the profitability of Maori owned land, agricultural and fish resources (relevant commercial research). The second is research that is shaped by culturally driven values (distinct research). Both of these are important.

## **Distinct research**

There are distinct culturally driven values that shape individual research topics. For example, research:

- into species of cultural and economic importance such as eels
- that considers development opportunities from distinct economic, social, environmental and cultural values or criteria
- that contributes to collective management objectives and improved commercial collective management models
- that contributes to kaitiakitanga (sustainable management of resources of cultural importance by Māori)
- that improves understanding of the distinct Māori resource base, tools and best practices to unlock its potential
- that arises from Māori knowledge, people and resources.

Research may also be distinct by the way it is undertaken. For example, research that is:

- embedded with Māori communities
- that utilises culturally specific analytical frameworks or engagement practices.

Maori also have some distinct ways of undertaking business that may shape research behaviours. For example:

- a distinct set of Maori farming, forest and fishing business networks with an interest in sharing information and cooperative development opportunities with other Maori collectives.

## **Relevant commercial research**

This includes all research that potentially lifts the productive potential of Maori land, agricultural, forest or seafood resources. It includes both:

- industry good research that develops new tools that can lift the profitability of Maori farming, forest and fish business or helps establish them in new niches
- commercial research that is tailored to the specific needs of Maori farming, forest and fishing business.

Given the distinct context of inalienable land and culturally important resources it is important that commercially relevant research has clear pathways for uptake to enable Maori as early adopters of innovation.

## A. Appendix 1 – FRST Draft Maori Economic Innovation Export Revenue Targets

Table 1: Estimates of revenue (2004) earned by Māori owned companies from products destined for export

FRST Target Māori Economic Innovation Sector	Māori Owned Company Revenue from Products Destined for Export 2004 \$m pa (est.)	FRST Target Revenue from Products Destined for Export 2015 \$m pa (in 2004 \$ terms)	FRST Research Involving Māori as at June 2005 <sup>2</sup> \$m pa
Seafood	600	1 200	6.0
Agribusiness	560	1 120	1.5 <sup>3</sup>
Forestry/Wood Fibre	35	200	0.2
Mineral Wealth /Energy <sup>4</sup>	25	150	0.8
Tourism	65	300	0.7
Indigenous flora and fauna	1	20	1.0
Total	1291	2 940	10.2

### Context

The Māori owned asset base has an estimated worth of \$9b<sup>5</sup> this produced approximately \$1.3b in exports for New Zealand in 2004. Within this Māori own approximately 40 per cent of the New Zealand Seafood Industry, 10 per cent of the plantation forest estate and produce 7.5 per cent of the agricultural production value added. This is underpinned by a substantive land base.

<sup>2</sup> These estimates include TechNZ grants to Maori owned companies 2002-2005

<sup>3</sup> This estimate includes a relevant and identifiable NSOF contract

<sup>4</sup> The Mineral Wealth/ Energy and Tourism estimates are for total revenue not export revenue

<sup>5</sup> Hui Taumata Secretariat *Maori Economic Development 1984 -2021* (2004)

## B. Comment sheet

Thank you for providing comment on the following questions. You can answer one or all questions. Comment should be provided to [john.kape@frst.govt.nz](mailto:john.kape@frst.govt.nz) by 5 pm 21 March 2007. Any comment on key research topics or questions is welcome.

1. How do you think research can best contribute to lifting the revenue and profitability of Maori owned forestry, farming and forestry businesses? Please identify the research topics and/or questions that you think can contribute the most
2. What are the priority research topics that are distinct to Māori economic or Maori land development?
3. Do you think that the Foundation's Maori economic innovation target should be focused on lifting profitability of Maori owned businesses?
4. What are the priority research topics important to lifting revenue and profitability of Māori owned seafood sector by 2015?

