**Programme title:** Mātauranga for Sustainable Hapū Development  
**Short Title:** Taonga Tuku Iho  
**Programme Leader:** Tui Aroha Warmenhoven  
**Lead Organisation:** He Oranga Mo Nga Uri Tuku Iho Trust (HEORANGA)

"Te manu e kai i te miro, nona te ngahere;  
te manu e kai i te Mātauranga, nona te ao"  
The bird nourished by the miro berry owns the forest;  
*But for the bird that seeks to be nourished by knowledge, theirs is the world.*


**Introduction**  
*Mātauranga for Sustainable Hapū Development* is a new project funded by the Foundation for Science, Research and Technology that began in late 2003. It builds on work from earlier FRST projects 1998–2002 *Māori community goals for enhancing ecosystem health* (TWWX0201 & TWWX0001; Harmsworth et al. 2002: Harmsworth & Warmenhoven, 2002) and *Māori Sustainable Development in Te Puku O Te Ika* (Harmsworth et al. 2002a) and links to new FRST programmes, such as *Building capacity for sustainable development: The enabling research* (Landcare Research 2004). It will initially use three case studies on the Gisborne East Coast of New Zealand to find what sustainable development means to people from different sub-tribal areas in Aotearoa–New Zealand. Once this is established, the role of mātauranga Māori or indigenous knowledge within sustainable development, will be explored. Based on case studies, hui, interviews, wānanga, collaborative learning, and action participatory work programmes, the project will develop generic frameworks and models that can be applied to and used in other parts of the country, expanding the work to other areas in future. It will examine the role and use of Māori knowledge (mātauranga Māori) within these frameworks and models, and develop strategies for the revitalisation and creation of Māori knowledge and its use. This research project will work with typical Māori communities to find out about their lives, their issues, their aspirations, and how they can achieve sustainable development within future global and national scenarios.

**Background context**  
Countries and communities around the world increasingly focus on strategies and actions to achieve sustainable development (United Nations 2004). The term sustainable development was brought to international attention by Agenda 21 and the Rio Earth Summit (United Nations 1992), which identified sustainable development as the most important goal for the 21st century to address a myriad of linked complex issues (e.g. resource depletion, resource conflict, energy demands, environmental degradation, climate change, poverty, human health issues, education) around the world that require balancing economic, environmental, social and cultural goals, responsibilities, and actions (United Nations 2002). An accepted definition of sustainable development is: “development which meets the needs of the present without compromising the ability of future generations to meet their own needs”, but many other definitions have been circulated and documented internationally and locally.
In New Zealand, approaches and research to facilitate sustainable development are being carried out by a number of agencies including central and local government, private sector, and communities.

Key New Zealand Government goals to achieve sustainable development (Department of Prime Minister and Cabinet 2003) are:

- Strengthen national identity and uphold the principles of the Treaty of Waitangi
- Grow an inclusive, innovative economy for the benefit of all
- Maintain trust in government and provide strong social services
- Improve New Zealanders’ skills
- Reduce inequalities in health, education, employment and housing
- Protect and enhance the environment

Māori
To date very few Māori in New Zealand have participated in discussions on sustainable development, and there is virtually no literature available defining what sustainable development means to Māori communities, such as hapū and whānau. In this project it was decided to work at the hapū (sub-tribal) level, as it:

- strongly binds people to each other, and to their natural, spiritual, and ancestral environments through whakapapa (ancestral lineage)
- is whānau inter-connected
- is an important level at which Māori make decisions and is based on strong elements of governance
- tends to be in geographically distinct districts and communities where Māori land blocks can be identified and aggregated
- is a suitable level for identifying and tabulating information on available natural, physical and cultural resources
- is an ideal level at which to realise human and social capacity, endeavour, and enterprise
- can be used to identify and implement the pooling of available resources
- has coherence for articulating a vision, aspirations and goals
- is an effective level for strategic planning, setting objectives, and implementing actions
- links many issues together for Māori such as education, health, housing, land development, employment, and management of the natural environment

Māori are as diverse as non-Māori in New Zealand, and about 80% now live in urban areas. Most Māori are exceptionally proud of who they are, where they came from, their ancestry, and their history, and many have common goals and values, and strive for recognition and participation within a highly assimilated general population. There are, however, significant disparities between Māori and non-Māori in the New Zealand population (Statistics New Zealand 1999, 2000; Te Puni Kokiri, 2000, 2001a, b, 2002), shown by many key statistical indicators, such as life expectancy, health, education status, employment, skills, academic achievement, crime, housing, average and median household income, youth suicide, youth and teenage pregnancy, business, land use, and participation or lack of participation at Government, local Government, and community level. These disparities vary widely from region to region, and from urban to rural (Te Puni Kokiri 2001a). In the last 20–30 years, however, many of these disparities have reduced, others have continued to show signs of divergence, while some new
disparities, often reflecting socio-economic status, social and health issues, and access to and use of technology, have emerged.

Most Māori want to take more control of their daily lives, and the lives of their families and extended families. The term *tino rangatiratanga* is often equated with self-determination but is also used to mean moving away from dependence and being able to determine one’s own future. For many Māori, *tino rangatiratanga or mana motuhake* is about working together, collectively, to assert more control over their lives, and achieve a better future. For many Māori in a highly complex world it is simply about developing self-esteem, identity, confidence and hope. For Māori attached to their culture, and with a strong cultural identity, this future should reflect Māori aspirations based on Māori culture and values, Māori social structure (whānau, hapū, iwi, urban authority), Māori development, and Māori advancement (Durie 1998). Māori realise this development and advancement will take place in a constantly changing and challenging world that involves many global, national, and regional issues.

The major building blocks for Māori in New Zealand society are still the social structure of whānau and hapū, and remaining Māori land (6% of New Zealand land area; Ministry of Māori Development 1988) and other natural resources (taonga) are often controlled and managed at these levels. The hapū and whānau are levels in Māori society where many aspirations begin and are advanced, and where Māori values are most often discussed. These are sensible levels at which to examine sustainable Māori development in New Zealand.

**Project outline**

*Mātauranga for sustainable hapū development* is a collaborative project between Ngati Porou, through the He Oranga Mo Nga Uri Tuku Iho Trust and Manaaki Whenua-Landcare Research New Zealand Ltd, a New Zealand Government-owned Crown Research Institute. It is one of only a few projects in New Zealand involving Māori community researchers working interactively alongside Government scientists. The project evolved from the successful 1998–2002 Waiapu project, *Māori community goals for enhancing ecosystem health*, also funded by FRST, which was an integrated catchment management project focussed on Ngati Porou issues and the Ngati Porou community, in the highly degraded Waiapu catchment, Gisborne-East Cape (Harmsworth et al. 2001, 2002; Harmsworth & Warmenhoven 2002; Warmenhoven 2000 a, b, 2002).

*Mātauranga for sustainable hapū development* will start with three case studies on the East Coast. It will expand this work to other areas in the future, and test and validate frameworks and models with other hapū. It will also network with other hapū throughout New Zealand and share experiences and learning.

It will use whakakotahitanga—participatory processes—from programme concept to completion, as well as inclusive management structures, to ensure effective delivery to hapū whānau, and other end-users.

**Building capacity**

An important component of this project is building human and social capacity (Allen et al. 2001) by increasing skills, learning, and training through education, western science, mātauranga Māori, and research, and then applying this collaborative learning to planning, innovation and enterprise, thereby increasing Māori capacity for sustainable
hapū development. It will contribute to Māori knowledge, development and advancement, and make a contribution to the Government’s goals for sustainable development. The project will also build a Māori research capability.

Building capacity can be within the project itself, by building the research capabilities of the research team, or at the hapū/whanau level by increasing human and social capacity and community interaction. In both cases it will use and grow Māori knowledge to achieve sustainable development. These are seen as key components to Māori development and advancement. Building research capability will be achieved by:

- increasing the capability of Māori to deliver research programmes by Māori for Māori. Evidence of success will be effective research management and indicators for growing and measuring Māori research capability;
- facilitating links between Māori research, development and advancement to programmes in supportive government agencies, including research and policy agencies. Evidence of success will be networking, information exchange, trust, and project collaboration judged to be effective by participating partners and end-users.

Building the capability for sustainable development at hapū and whānau levels will be achieved by:

- providing new capability through the recruitment and training of Māori in the programme. Evidence of success will be the number of people who wish to participate, and the effective dissemination of results to other iwi/hapū and government agencies; and
- providing new capabilities for: understanding, documenting and using mātauranga; leadership and governance; better management of natural resources, based on principles of kaitiakitanga and the development of culturally appropriate land and resource management practices (land, water, marine, air) consistent with tikanga; and identifying and exploring economic opportunities. Evidence of success will be hapū better equipped with the skills and knowledge to plan sustainable hapū development and researchers confident about conducting research in other areas and engaged in science, planning and policy.

Research steps, goals, and objectives
This research will provide a nationally applicable model that links a framework, strategies and processes for sustainable hapū development. The research will:

- define mātauranga and the different forms of knowledge existing within hapū;
- identify systems already in place, or that should be in place, to record, retain and enhance mātauranga;
- identify the specialist skills and forms of knowledge available to hapū, and how these can be used and enhanced to achieve cultural, social, economic and environmental goals;
- define what sustainable development means to hapū, and the future opportunities it could create;
- identify the significance of mātauranga for sustainable hapū development; and
- identify development opportunities for hapū, and the role of mātauranga and the way it could be used in each development opportunity

A large amount of the knowledge captured in this programme will be hapū-specific, requiring the careful consideration of intellectual property rights. The research will
identify suitable intellectual property frameworks and arrangements to protect hapū, whānau, and individual knowledge, and determine processes and systems for its future management and use. This will be particularly relevant if knowledge is used to support commercial endeavours (e.g., knowledge bases, new products, business enterprises, joint ventures, new technology). However, the methods and processes through which knowledge is captured and integrated, and the modelling framework, will be applicable and transferable to hapū in other areas of New Zealand.

The focus of the research is the provision of pathways for decision-making for sustainable hapū development that will result in building the human and social capacity of hapū, their ability both to use natural resources sustainably, and ultimately, to become self-empowered and economically independent. Eight key components of the project contribute to Māori knowledge and development objectives:

- A focus on recording, retaining, and using mātauranga Māori in a context of sustainable hapū and whānau development.
- A focus on building capacity through training, participatory research, new skills, and networking.
- The development of Māori research methodologies for and by Māori.
- Sustainable use of natural resources through the principles of kaitiakitanga.
- Improved Māori land utilisation through the use and integration of Māori, non-Māori, and science knowledge.
- The identification of the key components of Māori governance and leadership.
- Māori economic development, and the development of skills and opportunities at the hapū level to develop businesses, market and export opportunities such as indigenous branding, and culturally based products and services.
- The development of indicators or a framework that enables a local community to evaluate the role of their hapū in their day-to-day living, and strategically engages stakeholders at various levels to progress a range of community concerns, issues, and aspirations.

Outputs and applications

Outputs from the research will include the following:

- A definition of what mātauranga Māori and sustainable development means for hapū
- A conceptual basis and definition for the role of mātauranga Māori in contemporary sustainable development that can be applied generically
- A generic framework and model (from case studies) for sustainable hapū development, within a context of national and international frameworks, models, and scenarios for sustainable development
- Appropriate systems and processes for recording and using intellectual knowledge property
- Strategies and methods for planning sustainable hapū development and examples of development and advancement at the local community level
- Māori input into future scenarios planning and practical results that contribute to Government sustainable development goals

At completion of this research project it is hoped that participating hapū and whānau members will be better able to:

- determine hapū aspirations and goals collectively
understand the meaning of sustainable hapū development in the context of cultural, social, economic and environmental goals
record, understand, retain, create, and use mātauranga Māori and traditional and new technology for use in sustainable hapū development
record, understand, retain, create, and utilise western knowledge, science and new forms of technology for use in sustainable hapū development
form partnerships and networks to achieve goals
develop Māori methodologies for research
understand kaitiakitanga principles and implement hapū environmental and development plans
better understand responsibilities for the management of natural resources and taonga to achieve sustainable hapū development
identify constraints and barriers to sustainable development, and use appropriate local solutions to overcome some of these
identify and act on economic opportunities—explore new economic areas, innovative ideas, that fit definitions of sustainable hapū development
build human and social capacity for hapū in accordance with a vision and definition of goals, including enrichment and sustaining well-being of hapū
carry out and manage research, and facilitate informed discussion and debate on relevant issues
inform, understand, interpret and advocate for the effects of policy, markets and other external influences, on a hapū community
Develop hapū development and advancement scenarios for the future

In years 3, 4, and 5 we will test and evaluate frameworks and models outside the Gisborne East Coast region with other hapū and groups (including non-Māori) engaged in collective and holistic forms of development. The research will help position hapū and whānau to identify and explore new opportunities. It will deliver innovation through new approaches for retaining and creating Māori knowledge, uptake and use of western knowledge, and identify the role and significance of mātauranga Māori (e.g. traditional Māori knowledge) in contemporary sustainable development.

He Oranga mo nga Uri Tuku Iho
Through an independent research group ‘He Oranga mo nga Uri Tuku Iho’ (Figure 1), this project has an innovative style of programme management to address the sustainable development issues for a number of Gisborne-East Cape groups. He Oranga mo nga Uri Tuku Iho is a charitable trust established to a) promote and encourage the better education of rangatahi, (b) promote and enhance the revitalisation, education and effective use of tikanga me reo o nga tipuna for rangatahi and the well-being of future generations; (c) undertake and or fund research or courses of study and to develop such policies as will enable social status of rangatahi to be improved; and (d) ensure the advancement of economic security and financial independence of rangatahi.
He Oranga mo nga Uri Tuku Iho comprises representatives from hapū, whānau, and marae, and is a collective of nga hapū o Ngāti Porou members with an interest in the environment and in Māori knowledge through wananga. It has key relationships with Ngāti Porou marae, Manaaki Whenua (Landcare Research), Te Punī Kōkiri, and links to Te Whare Wananga O Ngāti Porou, Te Runanga O Ngāti Porou, and Ngāti Porou Hauora. The Trust was initially set up to coordinate and administer projects in the Ruatōrea area, but encompasses the wider Gisborne-East Coast region. The Trust will build and enhance links between iwi, hapū, whānau, marae, Māori/iwi and hapū researchers New Zealand wide, and researchers in CRIs and universities. It will provide mutually productive interactions with regional and local governments and central government agencies such as Te Punī Kōkiri and Ministry for the Environment.

Iwi authorities and sustainable development
Like many other iwi authorities in New Zealand, Te Runanga O Ngāti Porou, the iwi authority of Ngāti Porou (Te Runanga O Raukawa Inc. 1990; White, P. 2000; Harmsworth et al. 2002a), has identified key goals and guiding principles in a number of strategic planning documents (Te Runanga O Ngāti Porou 1998 a,b). These goals, which also appear in planning documents of many other iwi and hapū, include the needs to: attain a quality of life that ensures the total well-being of people, whānau and hapū; provide opportunities for whanau and hapū to develop their skills, knowledge and expertise and to participate actively in the development of his/her own whānau and/or hapū; draw on collective strength while celebrating a unique hapū identity; contribute to enhancement of and strengthening of whānau and hapū links; achieve hapū independence while recognising the value of interdependence as an iwi; recognise that people are their greatest asset and maximise the transferable knowledge and skills possessed.

Issues
The research will start in the Gisborne-East Cape region. The region was selected based on a number of factors: an iwi and hapū research capability existed (Harmsworth 2001); the region offers significant opportunities for environmental, economic, social, and cultural development for Māori, retaining a strong cultural presence and identity; there is
wide interest in land development, business enterprise, and education; and a large number of complex issues (e.g., socio-economic, political, governance) exist. The region is large—the Tairawhiti District (which includes Gisborne-East Cape) comprises approx. 1.1 million hectares. About 28%, or 310 631 ha, of the district's land is Māori-owned (Durie 1998). The region has been identified as disadvantaged (Statistics NZ 1999, 2000; Te Puni Kōkiri 2001a,b) because of a large number of socio-economic issues (e.g., health, housing, education, high unemployment, low household incomes), and shows many indicator disparities compared with the general New Zealand population.

Māori comprise 46% of the Gisborne-East Coast region's population. Approximately 84% have some affiliation to Ngāti Porou (Statistics New Zealand 2002), representing 20% of the Ngāti Porou population. The Māori population of the region is young (the region has the highest proportion of Māori children (27%) in the country), and half the Māori population is under 24.3 years of age. A high proportion of Māori know their iwi affiliations (91.5%) and more people (34.5%) speak te reo Māori with greater fluency than in other parts of the country. Census analysis (Te Puni Kōkiri 2001) shows:

- The region’s average unemployment rate is 10.4%—18.1% for Māori. This is much higher in localised rural areas such as Tokomaru, Ruatorea and Te Araroa.
- The median income of Māori people in the Gisborne District is $12,800. Personal income in the region is very low, with 71.1% of Māori people aged 15 years and over having an annual income of $20,000 or less. Only 2.8% of Māori (aged 15 years and over) in the region earned more than $50,000 per annum in 2001.
- Around 45.9% of Māori aged 15 years and over in the region leave school with no qualifications; the highest rate in New Zealand.
- Less than half of Māori in the Gisborne region own their homes.

**Sustainable development**

Projects that promote sustainable development for Māori at hapū and whānau levels need to be seen in the context of a large variety of sustainable development projects presently being carried out in New Zealand, all contributing in some way to the Government's goals for achieving sustainable development. Most projects do not have a Māori focus or content. Some projects are starting to include a Māori perspective (Frame pers comm. FRST Objective Scenarios of Urban Sustainability).

Very few Māori projects are being carried out in the ‘sustainability’ area but they are vital for contributing to community, regional, and national goals and making a change. They are also pivotal to the wellbeing, identity and advancement of New Zealand. The generic model and framework from this project will identify a pathway on how Māori communities might achieve economic opportunity and social wellbeing at the local and community levels. It will focus on the use of local resources to achieve growth, innovation, and enterprise in an internationally recognised sustainable development framework that provides challenges of: sustaining resource use, protecting and responsibly managing the environment, becoming self-sufficient in energy, achieving equity or equal citizenship in society, building human and social capacity, promoting cultural development and advancement, enhancing social and individual wellbeing, and promoting self-empowerment. This work aligns with many other programmes, many of which work with other types of community and business. To help Māori empower themselves, address an array of social and economic issues and disparities, and plan for the future, a holistic sustainable development approach is necessary. Projects such as this are also incubators for Māori knowledge creation and use, improve inclusivity of
Māori in New Zealand society, progress Māori towards equal citizenship, and allow Māori to participate fully in generating future scenarios to achieve sustainable development. If Māori are to be successful in sustainable development they need to understand and own the concept.

Much of the cultural, social, economic, and environmental advancement in Māori society takes place effectively at the hapū and whānau levels. For Māori, previous studies (Harmsworth et al. 2002) have shown sustainable development is often used synonymously with expressions and concepts such as: progress, advancement, increasing people’s capacity and capabilities, self-empowerment, Māori well-being, looking after and sustaining the natural environment, cultural enrichment, social justice, economic development, being able to plan for one’s own future, and, for many, ultimately achieving tino rangatiratanga (a move away from dependency). A large number of factors are important to the enrichment and empowerment of hapū and whānau, and to the well being of individuals in those communities.

On the other hand, many factors act as barriers and constraints to development. Constraints to Māori development identified by Te Puni Kōkiri (2002) include:

- Few highly skilled managers
- Lack of access to (and low familiarity with) science knowledge
- Difficulties with accessing capital
- Low familiarity with relevant information technology
- A lack of skills and a base to support development, growth, innovation and enterprise
- Management issues surrounding multiple ownership of land
- Small and fragmented land holdings

Research on sustainable development for Māori therefore provides an opportunity to explore economic, social and cultural development to sustain and halt degradation of land, water and marine resources, enhance cultural and social enrichment and well-being, and create wealth and innovation, by identifying the key cultural, social and economic elements that provide a strong base for development and advancement in New Zealand society. Within this context, there is a need for hapū and whānau to implement strategies that build human and social capacity, identify and realise opportunities, provide informed and robust decision-making, and determine a pathway to self-empowerment.

Values

Māori, especially hapū and whānau—where much management and decision-making is focussed—have strong aspirations for self-empowerment to achieve tino rangatiratanga and mana motuhake. These aspirations are often based on cultural values such as whakapapa, mana whenua, mana moana, turangawaewae, whakakotahitanga, whakapono, whānaungatanga, manaakitanga, arohatanga, kaitiakitanga, taonga tuku iho, and wairuatanga. Hapū also have great concerns over the retention and use of knowledge, and the intellectual property rights surrounding cultural knowledge. They also have aspirations to retain and control land, and play a more active role in the management and decision-making of natural resources.
Values are becoming a central and significant topic of discussion in New Zealand, in that they are strong determinants of behaviour, and achieving sustainable development requires behaviour to be consistent with the overall concept.


When it developed its work programme, the Board placed particular emphasis on culture, as it believed this to be a vital ingredient for growth and innovation. The GIAB commissioned research (GIAB 2004) that showed New Zealanders rated the following lifestyle and personal factors as most important to them:

- quality of life
- quality of the environment
- quality of education
- quality of health services


The GIAB went onto recommend a values-driven growth economy, based on core values. For sustainable development to work it is important to identify cultural factors important to the wider population, often termed ‘Kiwi values’, and at a lower level to determine values associated with various groups in New Zealand, often on the basis of ethnicity, religion, gender, interest, occupation, and other. Internationally, cultural values will be significant driving forces to achieve sustainable development in the 21st century, as many countries and groups within countries place increasing emphasis on cultural identity and world-view, because aspirations and goals are often attached to these.

Mātauranga Māori
Knowledge in contemporary society is made up of many forms. This research intends to clarify the role and importance of Māori knowledge in contemporary Māori society. Māori knowledge can be ‘pure’ in its own right (e.g., traditional Māori knowledge), or in more contemporary frameworks could be fused with knowledge from other forms including western science, learning and education (e.g., kura, wananga), local knowledge, or historic knowledge. Knowledge is on-going in many forms, and is always being created. Mātauranga Māori is an integral component of sustainable development for Māori.

By basing itself on mātauranga Māori, this project increases the chances of Māori achieving sustainable development by

- providing a robust and sound ‘values’ base and framework that ensures any ongoing development follows a tikanga approach
- advancing culture through understanding and revitalisation of that culture and through new knowledge
- focussing, through key Māori concepts and principles, on sustaining a hapū’s key environmental assets (land, water, and people),
- emphasising concepts and actions that enhance the health and well-being of people
- identifying appropriate processes to improve governance, leadership and management, and
understanding and determining established (historical) alliances and relationships between hapū, whānau and marae to provide a basis for clustering development, facilitating further learning and transferring of skills and information, understanding community and historical land ownership and use, and building relationships between hapū and with external agencies, including local and central government.

Mātauranga Māori can include traditional and new (contemporary) knowledge. Knowledge is always being created and developed within the paradigm of culture and advancement. The use of older or traditional knowledge can be revitalised when used in a modern context, particularly when groups actively participate in creating and using knowledge pertinent to them. This research not only investigates the types of mātauranga available to, and used by each hapū, but also the systems and processes for passing on, storing and using this knowledge.

Mātauranga Māori (Hiroa 1949), from which all Māori values (Marsden 1988) are derived, is significant to all hapū and whānau and is seen as pivotal for planning and guiding any form of development at this level. Mātauranga has been defined as traditional Māori knowledge handed down from ancestors (tupuna, tipuna), kaumātua, tohunga, and others (Durie 1996; Williams 1997; Harmsworth et al. 2002b) and is an integral part of Māori life and tradition. It is often used synonymously with wisdom and can be defined as ‘the knowledge, comprehension, or understanding of everything visible and invisible existing in the universe’ (Williams 1997). It encapsulates a Māori world-view and involves observing, experiencing, studying and understanding the world from an indigenous cultural perspective (Marsden 1988). It includes both knowledge and the systems used to store and apply that knowledge, and to pass it onto others over time. Traditional and contemporary Māori knowledge includes Māori values (tikanga, kawa, tikanga whakaaro), te reo Māori (language), Māori environmental knowledge (kaitiakitanga, mātauranga o te taiao), practices (whakairo, raranga, rongoa), oral traditions including songs, laments, chants, poetry, posture dances (waiata, moteatea, haka), proverbs and narratives (whakatauaki, pepeha), stories and legends (korero tawhito, pakiwaitara) and knowledge of cultural practices (tikanga). It encompasses knowledge about life, the environment, the world, and guiding principles for development.

Mātauranga is increasingly relevant in contemporary Māori society as Māori plan to balance cultural, social, environmental and economic goals. However, more traditional forms of knowledge are rapidly being lost by successive generations through the lack of policies and adequate systems to record and retain traditional knowledge, and through the passing away of kaumātua and kula, including Māori elders with specialist knowledge such as tohunga. Some young people are currently training and gaining experience to fill this void, but there are very few. To stem this loss we urgently need to determine and promote the value and role of mātauranga Māori in contemporary society, and initiate a societal change in values, attitude and behaviour that encourages interest in and transfer of knowledge between generations. This project will define the role of traditional and contemporary mātauranga in sustainable hapū development, and provide a model that links a framework, strategies and processes for hapū to define, plan and achieve mātauranga-based sustainable development.

Mātauranga can form the basis of a range of opportunities for development of new business ventures, entrepreneurial management, innovation, governance and
leadership, development of knowledge bases, creation of new knowledge, land-use
development and diversification, exploring new industries and markets, economic
development, and building capacity. These opportunities may include:

- Education, learning, wananga
- Arts and crafts production and marketing
- Organising and promoting cultural festivals/events, etc.
- Research and marketing
- Cultural practice, tikanga, retaining and sharing knowledge
- Tourism, eco-tourism, cultural tourism, indigenous tourism, accommodation
- Indigenous branding, culturally-based product and service development
- Fishing
- Aquaculture
- Biodiversity, understanding flora and fauna, taonga
- Environmental management and planning
- Energy production and conservation
- Housing
- Organics, permaculture, agriculture
- Forestry
- Product development, such as manuka honey, plant, animal, and food products
- Medical and health research
- Pharmaceuticals, medicines, health products
- Pastoral farming
- Horticulture
- Information technology, knowledge bases and information systems, new technology
- Communications, telecommunications, internet, world wide web
- Banking, financial services
- Technology, biotechnology
- Joint ventures, new businesses

Within appropriate intellectual property frameworks and agreements, mātauranga can help identify new opportunities, products, services and markets, support entrepreneurial and culturally appropriate activity, stimulate growth and innovation, promote business and sound environmental management. Through integration and holistic approaches it guides various strands towards sustainable development. Mātauranga also provides the basis for kaitiakitanga and environmental and cultural management of taonga across all environmental and cultural domains.

**Intellectual Property Framework**

An intellectual property framework is being developed as part of this research to acknowledge and handle all intellectual property, such as mātauranga Māori (Māori knowledge and more specifically Ngati Porou/hapū knowledge), which will remain with and belong to all the individuals and groups with whom we work. This research will investigate the role of mātauranga in sustainable hapū development and identify with individuals, groups, strategies, processes, and systems that are, or should be, used to maintain tribal, group, and individual knowledge forms, along with methods to revitalise its use and create new knowledge. Within wider society, new forms of knowledge are always being created and are derived from a variety of sources. Many traditional forms of knowledge are increasingly being fused with other forms of local and historic
knowledge, – western science and knowledge, experience, and education. The original sources of these knowledge forms should always be acknowledged. The recording and use of mātauranga Māori is being discussed during all phases of the project, and Māori knowledge derived from outside the research team will not be owned or housed in the Mātauranga for Sustainable Hapū Development project.

Māori economic development

Māori economic development takes place within the New Zealand economy (NZIER 2003; Business and Economic Research Ltd. & FOMA 1997). Any increased opportunities for Māori, and all Māori development and advancement through areas such as knowledge generation and use, education, innovation, and enterprise, make major contributions to the New Zealand economy and to New Zealand society. Te Puni Kokiri, the Ministry of Māori Development, produced a report Māori In the New Zealand Economy, in 2002 (Te Puni Kokiri 2002). The project was undertaken to gauge Māori involvement and contribution in the New Zealand economy, and to provide a snapshot in time and a baseline for future trends. The report highlights successful enterprise and innovation within a cultural context.

It is very difficult to distinguish and quantify the Māori economy as a separate entity from the wider economy as the two are interconnected, with constant flows in both directions (NZIER 2003). Māori are assimilated, along with business, into the general population. These reports identify that Māori economic development and potential have markedly improved since 1992, after a sharp decline in the mid-late 1980’s and 1991, and that this economy is emerging steadily within the wider New Zealand economy.

The Māori economy is defined as assets owned and income earned by Māori—including collectively owned trusts and incorporations, Māori owned businesses, and service providers. The Māori commercial asset base, reported to be worth $5.2 billion in 2000 (Te Puni Kokiri 2002), was concentrated in farming, forestry, fisheries, and agriculture and as at 2002, Māori organisations controlled 10% of New Zealand’s forestry holdings. Estimated value of Maori exports was $650 million from statistical data in 2000 (NZIER 2003) and the Māori economy contributed around $700 million or 7.4% of New Zealand’s total annual agricultural outputs. In 2001 the total annual tax contribution from the Māori economy was $2.4 billion (NZIER 2003) and Māori were lenders to the New Zealand economy. For some Māori businesses and enterprises this commercial asset base is rapidly growing and becoming a major part of local and regional economies. The number of Māori businesses, such as tourism, food and beverage, and fisheries, has increased sharply in the last 10 years. However Māori continue to be greatly under-represented in most knowledge based industries (NZIER 2003).

Within the Māori economy Māori can express their collective interests and aspirations. It is the space where cultural and economic aspirations combine. It is important to increase Māori participation rates in the New Zealand economy across a range of sectors through initiatives that include partnerships and joint ventures. Areas with an enormous potential for future growth include converting assets and intellectual knowledge capital into innovative, enterprising, and commercial activities within a robust cultural or tikanga framework. It is commonly believed greater economic development within the Māori collective will also strengthen cultural identity, wellbeing, and tino rangatiratanga. Many international examples also show that economic success and wellbeing allow cultural groups to reinforce strong environmental and cultural values and standards in practice.
Projects such as mātauranga for sustainable hapū development provide guidance for developing physical, cultural and intellectual assets and identify opportunities for these to be converted into growth initiatives for Māori and the New Zealand economy as a whole, by:

- enabling an analysis of mātauranga Māori, including traditional hapū and whānau Māori knowledge, to be appropriately (i.e. within a tikanga framework) applied to opportunities, education, enterprise, products and services
- an analysis of mātauranga Māori to be appropriately used in education and wānanga, and for appropriate systems and processes to be developed for the creation, revitalisation, and continuing use of this knowledge, particularly uptake and use by rangatahi
- using mātauranga Māori to identify and build on historical and new trading relationships to cluster, develop, and integrate economies of scale
- using mātauranga (traditional and contemporary knowledge) to understand the effects of market and government policy influences on resource use and community wellbeing
- enabling hapū and whānau to plan for and participate in different economies (local, regional, national).

Future scenarios

Internationally, a large number of research projects now focus on planning for the future (Department of Trade & Industry, United Kingdom 2003; Berkhout, F & Hertin J. 2002): http://www.foresight.gov.uk/

Scenario planning is essential to develop future Government and private sector strategies. This planning is carried out within a framework of uncertainty, where planning and decision-making is controlled to some degree, but is also dynamic and responsive to new situations and external changes and pressures. Scenarios are often presented to show general trends and what might happen if a certain pathway is followed. They are often used to provide more detail in the following areas:

- economic and sectoral trends
- employment and social trends
- regional development
- health, welfare, education
- the environment.

It is important also to think about different and often contrasting scenarios that reflect the aspirations of different groups, and being strongly focused on aspirations and what the future could look like to contributors and participants, they tend to strongly reflect the values, ideologies and knowledge of participating groups and agencies. In terms of just, fair and equitable societies, both sustainable development and scenario planning should involve all parts of society, not just the general population, and should include minority cultures or under-represented groups such as indigenous, ethnic, religious, gender, and age groups.

Two common and contrasting future world scenarios are often discussed. Both take place in a world that is becoming increasingly international and global:

- Cultures, ethnic groups and religions merge and are increasingly assimilated, and the boundaries between countries and cultures become less distinct. Countries/nations move towards dominant international cultural and societal
values, secular, ethnic, or religious values often dominate, and international social, environmental, and economic standards become increasingly important. Cultural and religious diversity can still flourish in this scenario if it is recognised and treasured.

- Populations and groups retain and strengthen their cultural or religious identity and affinity as a basis for national or group identity, either as a form of pride, distinctiveness, separatism, rights, or to support nation building and enterprise, where cultural, ethnic, and religious diversity is recognised and respected in sub-groups of main populations, and the cultural identity and sovereignty of an independent nation, within nations, is considered important.

Whatever scenario(s) becomes reality, human beings will continue to form groups based on characteristics such as political ideologies, common sets of beliefs and values, ethnic background, religion, territory, cultural identity, and common interest. In a world with increasing potential for conflict and tension, based on factors such as poverty, social and economic disparity, racial disharmony, population increase and pressure, cultural rights, dictatorship, power over minority groups, religious fundamentalism, depleting resources, resource management, and natural resource conflict, it is essential to acknowledge and respect cultural differences and different worldviews. Rather than seeing everyone as the same, we need to design ways to live and work together that taps into the creative potential of people and can facilitate changes in human behaviour. To do this we need to find solutions to a complex myriad of issues and problems by drawing on knowledge and learning from all cultures. Underpinning the solutions to many of these complex issues will be respect for, and use of, a range of knowledge forms (e.g., Western science, religious, local farmer, historic, indigenous knowledge, traditional ecological knowledge), and the integration of knowledge to help achieve sustainable development and ultimately human survival. Numerous knowledge forms exist and are relevant and helpful to contemporary society. Forms such as indigenous knowledge (Indigenous knowledge worldwide 2004), link global and indigenous knowledge for the betterment of mankind according to a report by Nuffic.

http://www.nuffic.nl/ik-pages/ikww/index.html

Accordingly, in the international business environment there is increasing focus on ethics and values in business and enterprise, and performance-based reporting to constituencies on environmental, social, economic and cultural responsibility and accounting. We are moving into a world that will increasingly focus on understanding culture and knowledge, developing and implementing principles and standards, and reporting our actions to the wider community. To be successful and function in this world we will increasingly need some degree of cultural and social intelligence and respect.

Conclusions
As one small research programme trying to make a difference, Mātauranga for sustainable hapū development will identify priorities and opportunities for Māori to achieve sustainable development consistent with the Government's approach, and provide knowledge and ideas to other research projects both nationally and internationally. Taking a balanced cultural and integrated approach to sustainable development, this research considers the needs (now and in the long-term) of both people and the environment. A focus will be on how to realise and build Māori capacity to initiate hapū-based initiatives that contribute to self-empowerment and less dependency. Māori values (especially tino rangatiratanga, mana motuhake, whakapapa, mana whenua, whanaungatanga, kaitiekitanga, manaakitanga, awhinatanga,
kotahitanga, taonga tuku iho) are concerned with the welfare of people, society and the environment, and with the protection of treasures and knowledge for future generations (Harmsworth et al. 2002). A hapū model for sustainable development will be based firmly on Māori knowledge, values and principles, and will thus link all dimensions of sustainable development.

Outcome
This project will identify the contemporary role and use of mātauranga (traditional and contemporary Māori knowledge) in sustainable hapū development, and provide a model based on a framework, strategies and processes for hapū to define, plan and achieve mātauranga-based sustainable development.

An equitable New Zealand society where Māori participate at all levels in planning and policy, where disparities between ethnic groups are eliminated, Māori aspirations are taken into account in all future scenarios, the role of mātauranga Māori (Māori knowledge) is recognised and treasured by all, and Māori development and advancement are recognised as key elements for New Zealand to progress and prosper to achieve both sustainable development and a vibrant economy.

Project links
This project builds on two earlier FRST-funded research programmes, Māori sustainable development in Te Puku o Te Ika (1998–2002, UOW0005), and the ‘1998–2003 Waiapu project’ Māori community goals for enhancing ecosystem health, led by Ngati Porou, through Te Whare Wānanga O Ngati Porou. This new project links closely to the FRST programme, Building capacity for sustainable development: The enabling research (Landcare Research 2004). Building capacity for sustainable development has 4 objectives:

- Objective 1: Scenarios of urban sustainability
- Objective 2: Sustainability assessment – integrating the sustainable development dimensions
- Objective 3: Social marketing – engaging leaders, consumers, and the next generation
- Objective 4: Improving partnerships – developing influence and win-wins

These research projects are contributing knowledge and ideas to a large number of Government, local government and private sector projects below:

Government
- Achieving and implementing sustainable development
  *The Government’s Approach to Sustainable Development (2002)*
  [www.beehive.govt.nz](http://www.beehive.govt.nz)
  [www.msd.govt.nz](http://www.msd.govt.nz)


Ministry for the Environment
• Building capacity for communities to take up environmentally sound patterns of behaviour in using and protecting natural resources
• Māori to exercise kaitiakitanga in developing resources sustainably
• Environmentally responsible land and water management

Local Government
• Achieving and implementing sustainable development
• Local Government Act
• Long-term council community plans (LTCCP’s)

Project Advisory Komiti
Mātauranga for Sustainable Hapū Development is guided by an expert advisory komiti, many living locally and from the region in which the research is being carried out. They guide the research in many areas: cultural, technical, methodological, knowledge, ethical, science, pragmatism, application, and, most importantly, make sure the research follows Māori approaches, is tikanga based, respects Māori values and process, relates to communities, and has links to national research programmes and national sustainability goals. It is important that the results of this research are effectively incorporated into national programmes, and support national goals for New Zealand. The advisory komiti meets four times a year, and as at March 2004 comprised: Caren Wickliffe, Glenis Philip-Barbara, Anaru Kupenga, Amster Reedy, Garth Harmsworth, and Rikirangi Gage.

Research Team
The research team comprises people from a wide range of disciplines and backgrounds, all highly experienced in their respective fields. They have considerable experience working with Māori communities, and have in-depth understanding of community values and issues. Many of the researchers also have good understanding of national and regional issues and how this research will link not only to what communities want to achieve, but also to national outcomes. Some of the researchers are linked to other research projects and have international networks. Other researchers will be seconded onto the team from time to time. Key team members as from 2003/2004 include:

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