Rangahau Māori (Māori Research): An Indigenous Perspective
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Introduction
The National Science Challenges are funded by the Ministry of Business, Innovation and Enterprise, and are a departure from the usual research funding regime in New Zealand. There are eleven challenges, which will receive multimillion dollars over ten years, that are "designed to take a more strategic approach to the government's science investment by targeting a series of goals, which, if achieved, would have major and enduring benefits for New Zealand. The National Science Challenges are cross-disciplinary, mission-led programmes designed to tackle New Zealand's biggest science-based challenges. They require collaboration between researchers from universities and other academic institutions, Crown Research Institutes, businesses and non-government organisations to achieve their objectives" (MBIE). One of the prominent features of each Challenge is a requirement to address Vision Mātauranga, a policy for 'unlocking the innovation potential of Maori knowledge (Mātauranga Māori), resources and people'. This is a key policy platform for research funded by government.

This paper explores the strategies being developed and pioneered by the Challenge that focuses on building, entitled 'Building better homes, towns and cities', whose vision is to build environments that build communities, through a mission involving co-created, innovative research that helps transform dwellings into homes and communities that are hospitable, productive and protective. This Challenge is also taking an innovative approach to Māori research and development, operating across academic, cultural and social sectors. There is a large group of Māori, at governance and senior management levels, and researchers from around the country, proportionally higher than many other Science Challenges, who bring a wealth of expertise, and who are committed to developing research and projects that deliver meaningful outcomes for Māori. Furthermore, this paper will present a model for conducting research with and for Māori, that is empowering and mutually beneficial to all parties involved in the research.

Vision Mātauranga

Government has been the major investor in research in New Zealand. How and why research has been funded has changed, often under different political regimes, and political strategies. The Building Challenge evolved over two years of informal discussions between interested researchers around the country, before a formal proposal was compiled and submitted to MBIE in 2015. The initiating party was BRANZ (Building Research Association of New Zealand). In the 1950s the Building Research Bureau was formed as an industry-owned information service. By 1969, Government favoured the creation of research associations which could work as industry partners, and the Building Research Levy Act was passed into law, to collect a levy from the industry, which would fund the development of knowledge for, and dissemination of knowledge to, the sector (BRANZ). This funding regime, complemented by direct government contributions, continued into the late 1980s, during which time New Zealand underwent an economic transition, referred to as 'Rogernomics' (Boston, 1987). For Vowles, "New Zealand's fourth Labour government, elected to power in 1984, has become known most generally for two of its policies: a refusal to accept nuclear warships in New Zealand waters, and the vigour and consistency with which it has pursued market orientated economic policies" (1990, 81). During that period BRANZ was split into two companies, prior to many of the government reforms. They were not privatised, there was a company "BTL" which was separate from BRANZ. BTL was the business arm, whilst BRANZ received and distributed levy funding. A major change was that specific, central Government funding ceased in the 1980s, with the entities having to be reliant on their levy funding from industry and having to expand their income options through consulting, thus the push for a 'corporate' arm (Shearer, 2017). The overarching point is thet government has been the key driver of research in New Zealand, and has set the agenda for research foci, regardless of political affiliation. This has had a direct impact on how, when and by whom research has been conducted on, and by, Māori.

As initial discussions, it became apparent that the group of Māori researchers involved from the outset wanted to ensure there was a strong Māori presence across all the research areas, and that the Vision Mātauranga component of the proposal received due attention. Vision Mātauranga, is a policy created by the Ministry of Research, Science and Technology "to provide strategic direction for research of relevance to Māori" (MRST, 2007,2). However, the impetus for a Māori-centric research policy had been a part of the discourse amongst Māori scholars for decades, particular in the emerging Kaupapa Māori field. Writing in the 1980s, Graham Smith coined the term Kaupapa Māori, to describe critical theory for and by Māori (Smith, 1987). For Nepe (1991), Kaupapa Māori is derived from distinctive cultural, epistemological ad metaphysical foundations, 'a conceptualisation of Māori knowledge' (Smith, 1996). This Māori knowledge was marginalised, as Eurocentric knowledge and knowledge systems were integrated into New Zealand as part of the colonial experience, beginning with the signing of the Treaty of Waitangi between Māori chiefs and the British Crown on February 6th 1840.

The Vision Mātauranga policy and goals are closely linked to the notion of partnership between Māori and the Crown (as Māori describe the New Zealand Government, given the Treaty was signed with the British Crown). The fact that this partnership has been ill-founded is well recorded in New Zealand history (Orange, 1986; Kawharu, 1989; Walker, 1990). The Waitangi Tribunal, formed in 1975, has spent forty years adjudicating over Māori grievances about infractions by successive governments, which resulted in the expropriation of tribal lands, inequitable legislation undermining the Māori economy, and the consequential impoverishment of the Māori people (Stokes, 1992; Byrnes, 2004). However, it has been the subtler effects of Eurocentric hegemony, that have underpinned the attenuation of Māori language, culture and knowledge (Henry, 2007).

Many Māori have been highly critical of research and researchers, universities and governments, for the role played in this diminution of Māori language, culture and knowledge, as a consequence of the colonial system (Bishop and Glynn, 1998; Smith, 1999; Cram, 2001: Henry, 2007; Eketone, 2008). For Moewaka-Barnes, "The power to involve or exclude, to marginalise or legitimate, is the critical difference between the dominant culture and indigenous peoples" (2006, p.2). Alongside these, a growing number of non-Māori scholars have contributed to the discourse, among them Seuffert, who coined the term 'epistemic violence' to describe colonial imposition has "claimed universal applicability across disciplines, cultures and historical periods" (1997, p98). Others, like Barnes (2013) advocate that non-Māori embrace kaupapa Māori research, to support the social justice outcomes of Māori research, whilst recognising their own white privilege. Within this discourse is the recognition that Mātauranga Māori is an important aspect of Māori culture and knowledge systems, which has been undermined by colonisation, but which, in recent decades has been revitalised, first by Māori, then by successive governments.

Building better homes, towns and cities
As previously stated, a number of meetings were called over the 2014-2015 period, at which participants, Māori and non-Māori, developed the ontological foundations for the project. It became increasingly important for all participants co-create a framework for working together, and with stakeholder communities. The framework, eventually entitled Tāne Whakapiripiri, is a reference to Tāne, guardian of the forest in ancient cosmology, from which are harvested the trees used to build Whare Hui (meeting houses) that bring communities together. The use of this term acknowledges the importance of both buildings and communities in Kāinga (traditional homeland villages). It was to signal that this research would bring together researchers with a common vision for improving housing and communities. This framework built on the Braided Rivers Model, which advocates for, "inclusive approaches that value and recognise the indigenous "other" and intersect with the everyday culture and lived realities of particular groups and individuals, in a range of authentic ways" (McFarlane, 2012, 205). Further, it takes account of Smith and Hudson's

Negotiated Space Model (Mila-Schaaf and Hudson, 2009), which acknowledges and values the distinctive perspectives of both Western Science and Mātauranga Māori, whilst providing mechanisms and space for the different worldviews. This framework was designed to enhance collaboration and partnership between and amongst Māori and non-Māori researchers, with a distinction between Mana Whenua (Māori) and Manuhiri (non-Māori, those who are in New Zealand as a consequence of the Treaty of Waitangi). Tāne Whakapiripiri recognises the unique status of Tangata Whenua (people of the land), as Whānau (kin-groups), Hapū (sub-tribes), and Iwi (large tribal groupings). The final proposal, submitted in June 2015, noted that, by encapsulating the Challenge in the Tāne Whakapiripiri Framework, the research would, over the course of the project, build a cohort of researchers who have the skills and capabilities to work within both Mātauranga Māori and Western Science paradigms to collaborate more effectively across cultures and disciplines.

Tāne Whakapiripiri Framework incorporates Manaaki Tangata (caring for the people), which forms the ridgepole of the meeting house, protecting and nurturing those within. Mana Whenua and Manuhiri form the floor, or foundation. The Whare itself is a clear example of the way in which the ancient Tohunga (ritual experts) would locate and place the house to face the rising sun, usually in an elevated site, and to protect the house from prevailing winds. This approach to Manaaki Tangata is even more relevant, if we are to consider the obligation to future-proofing houses, towns and cities against climate change and extreme weather pattern shifts across the globe, which is clearly affecting many communities in New Zealand and across the Pacific.
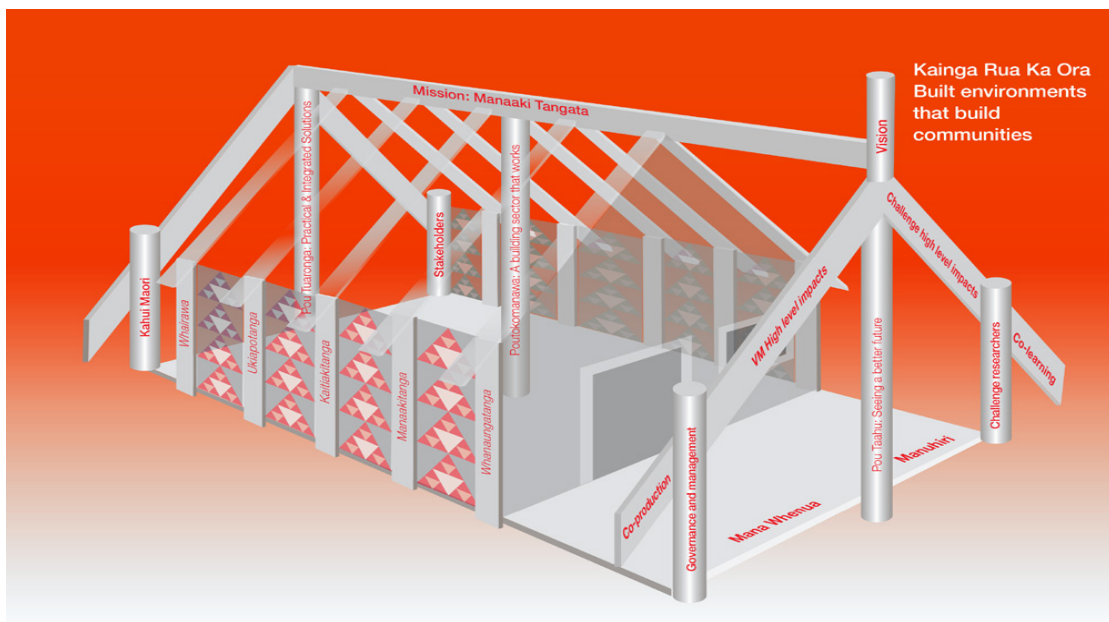
Figure 1: Tāne Whakapiripiri Framework incorporating Challenge Vision, Mission, Objectives, Outcomes, Pathways and People (BBHTC Proposal, 2015, p. 9-11)

Over and above this foundational framework, the proposal also articulated the specific components of the Vision Mātauranga strategy that would inform the research. This section of the proposal affirmed that Māori scholars attest to the demonstrable "power of the indigenous world view, when bridged to Western science, to create innovative technologies, shape future science directions, and thus promote the recognition, vitalisation and continued evolution of Mātauranga Māori." (University of Waikato, 2011), a knowledge system predicated on inter-generational and collective wisdom

Following this were a range of traditional Māori practices, Tikanga Māori, that would underpin all aspects of the project. For example, Karakia (ritual invocations, often glossed as prayer) would precede Challenge activities. Recognition of Kaitiakitanga (stewardship), and the role Māori assume as guardians of the physical and spiritual environment, would be incorporated. Over and above these Tikanga Māori, was a description of the ways this research would meet the specific Vision Mātauranga objectives outlined by the Ministry of Business, Innovation and employment, these being: Indigenous Innovation; Taiao (environmental sustainability; and Hauora/Oranga (health and social wellbeing), outlined in the following passages of the proposal:

- Indigenous Innovation: New Zealand needs its businesses and for-profit enterprises to perform at an optimum level and contribute to economic growth. Māori are actively engaged in a variety of urban and regional regeneration projects that relate to Indigenous innovation (e.g. Smith, Tinirau, Gillies and Warriner, 2015). This has been reinforced in the stakeholder consultations undertaken by the Māori Science Teams prior to preparation of the final proposal. Several Māori innovations have been identified, including locally sourced and uniquely combined building materials expressed via Māori-centric design principles (Kawiti, 2015; Morgan, 2005a, 2005b).
- Taiao: In this regard, the emphasis is on enhancing environmental sustainability through Iwi and Hapū relationships with land and sea. Like all communities, Māori aspire to live in sustainable communities, dwelling in healthy environments.
- Hauora/Oranga: Improving Health and Social Wellbeing is a priority for the Challenge, particularly where Māori health and social wellbeing continue to be a problem within Māori communities.

Taken together, the above factors inform and shape the ontology, epistemology and axiology of the Challenge. The following section drills down to the strategic research areas and consequent methodology.

Strategic Research Areas

By the time of submission of the final proposal, initially five strategic research areas were identified, and later a six was added. Each of the Strategic Work Areas, focus on a distinct aspect of New Zealand building and housing (BBHTC), as outlined below.

1. **Kāinga Tahi, Kāinga Rua** recognises the dual and complex nature of Maori identities and the many communities in which Māori live. This research acknowledges that Maori identify, through whakapapa (genealogy) to particular place, rohe (tribal homelands), marae (community centres), and kāinga (villages), but are more likely to live now in Kāinga Rua (secondary homelands) in urban centres. Many Maori may consider their Kāinga Tahi to be the city now, and their Kāinga Rua to be their traditional Marae. This research area will explore how Māori may collaboratively finance, design and build developments, to overcome discriminatory policy and legislative barriers, as a means of actively supporting Māori aspirations for affordable and healthy housing.

2. **Shaping Places: Future neighbourhoods** focuses on larger cities, home to around half of all New Zealanders. It is proposed this research will lead to a better understanding of the principles and processes that create more successful neighbourhoods. One way it will do this is by investigating the complex factors involved in urban design, especially in relation to New Zealand cities. In collaboration with stakeholders, the research will also evaluate real neighbourhoods, including ones with a high proportion of Māori residents, to discover how successful they are and why, or if not, why not.

3. **Supporting success in regional settlements** will explore and develop a model of the system of regional settlements and their linkages to cities and rural activities. It is assumed that, such a model will identify connections to improve these environments. This project will also develop a knowledge platform based on regeneration in practice, to support Māori activities in regional settlements. Another feature will be an inventory of regeneration approaches, including assessment methodologies. It will also develop a community of practice involving researchers, key stakeholders and users, sharing information about how to create prosperous, liveable, healthy and sustainable regional settlements.

4. **Next-generation information for better outcomes** will focus on digital information, particularly geospatial data, which could be better used to inform the development of better homes, towns and cities. This is particularly relevant to urban planning. Much of this data is underutilised or not being translated into 'good' information, and very little data is easily scaled from local to regional and national levels, or vice versa. Modern technology offers opportunities to use a wider range of data. For example, crowd-sourced data can help shape and improve the function and flow of communities.

5. **Transforming the building industry** aims to transform the current conservative,

constrained and fragmented building industry into a more productive, innovative sector. Under the overarching theme of innovation, the research will focus on three areas: new technologies, appropriate upskilling of labour, and improving processes with a focus on whole-of-building, whole-of-life performance.

6. **Understanding and retooling the architecture and logistics of decision-**making will explore the built environment, and the interactions between three key groups:
   - Resource holders (physical and financial)
   - Critical actors in supply and demand (developers, builders, consumers, financiers, investors)
   - Regulating agencies.

These groups and individuals are all influenced by economic, financial and cultural imperatives. Together, these 'actors' and their logics comprise 'the architecture of decision-making'. The architecture complexity obscures – even to the actors – many of the effects of decisions. This programme will contribute to improved decision-making about controls on, incentives for, and costs of, new buildings through a more systemic approach.

This program of research would be undertaken, and where relevant for Māori researchers and researched, drawing on a Kaupapa Māori methodology.

Research Methodology

The overarching principles, and practice of Kaupapa Māori Research have been evolving since the 1980s. However, the development of a specific methodology remains a work in progress. For Cooper, "The position of Kaupapa Maori is paradoxical. It must stand aloof from the concerns of science and centre Maori epistemologies as a starting point for research. At the same time, it must critically engage Western knowledge and production practices as part of its decolonizing and transformational strategy" (2012, 64). Given that, Māori researchers, and those who support Mātauranga Māori, continue to generate research programmes that adhere to a set of principles, which address the aspirations of Māori people, and revitalise Māori knowledge and culture. In this project, the principles that were developed are:

- Research that is for with and by Māori: The Māori Science Team have consulted with their own communities (whānau, hapū and iwi), as well as with other Māori stakeholders throughout the development of the research proposals, and ensured that there is a place for Māori community researchers and postgraduate students in the implementation of the research projects;
- Research that validates te reo me ngā tikanga Māori: Each project will identify Māori knowledge that is relevant to that location and community, as well as working with Māori stakeholders, in a manner that is respectful of tikanga Māori. Further, Māori language, identity and knowledge will be incorporated into models and tools that emerge from each project;
- Research that empowers and results in positive outcomes for Māori: Te Aranga

Principles[1] will be applied to the research in an on-going manner, to ensure the proposed projects are delivering positive outcomes and outputs for and with Māori and their communities, particularly those that are involved in the research; there is rich understanding and knowledge that comes from working in mutually beneficial relationships between the researcher and the researched (whakawhānaungatanga);

- Research that has widely understood and accepted outputs and outcomes, for the benefit of researchers and end users (ensuring Manaakitanga Tangata).

It was considered important that Kaupapa Māori Research be carried out by Māori researchers within and across each project. A number of projects would also utilise an 'Enquiry-by-design' methodology, which brings stakeholders together to discuss and develop urban design and planning solutions in a participatory and empowering manner, comparable with participatory action research. Further the projects planned to utilise research methods grounded in Māori concepts such as huihuinga (collaborative meetings), hīkoikoi (walking alongside stakeholder groups and communities), and wānanga (intensive co-creation gatherings), and whakawhānaungatanga (in this context, unity of purpose, and mutually beneficial outcomes).

For all the Māori researchers[2], it was critical for this research to explore Māori (and by association, Indigenous) knowledge and Māori aspirations, to lift and transform the imagination of Māori, to see themselves beyond substandard, rental housing, distant from their tūrangawaewae (traditional homelands) because there appear to be no viable or healthy housing alternatives. This goal is expressed as tino rangatiratanga, that is, the capacity to have control over the course of things Māori and, in this case, to advocate for and participate in better planning, design, and decision-making, and to create more sustainable housing, communities, and neighbourhoods. It was envisaged this would occur by way of Māori organising and expressing themselves in the destiny they aspire to, as a people, uniquely related to, and identified with Aotearoa New Zealand. As Durie (quoted in Smith 2011) noted, "Fundamentally, tino rangatiratanga is about the realisation of collective Māori aspiration. And despite the many faces of contemporary Māori society and the wide range of views, which exist, there is nonetheless a high level of agreement that the central goal of tino rangatiratanga is for Māori to govern and enjoy their own resources and to participate fully in the life of the country. Māori want to advance, as Māori, and as citizens of the world". Therefore, this Science Challenge would be built on existing initiatives and knowledge, to develop, enhance, and disseminate a range of tools and processes that contribute to better homes, towns and cities for Māori and for the wider community.

Te Aranga Principles

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[1] See below for further discussion about the Te Aranga Principles
[2] The total number of researchers is one hundred, and of this, there are thirty-four Māori, many of whom are sub-contracted for small amounts, rather than being university-based

As previously stated, the Te Aranga Principles were advocated for, and to be incorporated into the methodology, across the research projects. The Te Aranga Principles emerged out of discussions held between Māori design professionals, after the Ministry of the Environment published the New Zealand Urban Design Protocol in 2005 (NZUDP). This group first gathered at the Hui Kaihoahoa at Hoani Waititi Marae (West Auckland) in 2001. Over fifty participants discussed recent developments in Māori architecture, and acknowledged the need for a professional body representing the interests of Māori design. Ngā Aho, the association of Māori design professionals, was formed in 2001 (Ngā Aho). Prominent amongst this group was Māori architect, Rau Hoskins, and Lucy Tukua, a member of Auckland Iwi, Ngāti Paoa, and graduate in Resource Management. Publication of the NZUDP was perceived as a call to action, and members of Ngā Aho took up the challenge to initiate Hui around the country, and became the repository of the knowledge which was transformed into a set of Māori design principles. These were first adopted by Manukau Council, as the home of the largest, concentrated population of Māori, prior to its amalgamation into the Auckland super-city in 2010. After that, the Principles were adopted as part of the Auckland Design Manual (Tukua, 2017). According to the Auckland Design Manual, the protocol was developed because, "It was recognised that a clear Māori voice and meaningful involvement in the creation of the NZUDP had been absent, and that the process undertaken in the development of the protocols did not adequately engage with Māori interests" (Auckland Council, 2012). After a series of consultations across New Zealand, a draft National Māori Cultural Landscape Strategy was formulated. From that, the Te Aranga Māori Cultural Landscape Strategy emerged to represent, "the first concerted and cohesive effort by Māori to articulate Māori interests and design aspirations in the built environment" (Auckland Council, 2012). Seven design principles, now referred to as the Te Aranga Principles, have been published in the Auckland Design Manual, and used as the basis for a number of research and design projects (Kiddle and Menzies, 2017; Paul, 2017).

Within the Challenge, Te Aranga has been drawn upon by a number of researchers, mainly but not exclusively Māori, to inform analysis and practice. This is particularly relevant, to ensure the voice of Mana Whenua (Māori living within their tribal area) are acknowledged, alongside Mata Waka (Māori living outside their tribal area). The Principles have been expressed and defined in the following table:

Principle	Outcomes
Mana	The status of iwi and hapū as Mana Whenua is recognised and respected.
Whakapapa	Māori names are celebrated
Taiao	The natural environment is protected, restored and/or enhanced
Mauri Tū	Environmental health is protected, maintained and/or enhanced

Mahi Toi	Iwi/Hapū narratives are captured and expressed creatively and appropriately
Tohu	Mana Whenua significant sites and cultural landscapes are acknowledged
Ahi Kaa	Iwi/hapū have a living and enduring presence and are secure and valued within their rohe

Table 1: Te Aranga Principles, Auckland Design Manual, 2012

For the creators of these principles, "The development of Te Aranga is seen as a positive affirmation of the standing of Iwi/Hapū, and also as an articulation of Iwi/Hapū aspirations and expectations of other stakeholder groups working within the built environment: (Wihongi, 2008).

Discussion

This paper will analyse the ways the Vision Mātauranga component of the research has been developed and implemented. The following discussion is predicated on my experiences as a member of the Building Challenge. My roles encompass being the representative of the Māori Science Team on the Senior Leadership Team, as a researcher within the 'Shaping Places' Strategic Research Area (SRA4), and as the team leader (Principal Investigator is the formal term in New Zealand research) of a Work Programme within SRA4, focussing on Glen Innes, an Auckland suburb, as a proposed example of neighbourhood regeneration. Whilst I acknowledge the anecdotal nature of the discussion, I have attempted to apply a critical lens to my analysis. The discussion is based on my notes, correspondence and minutes, and my personal recollections.

Timeline

In 2014 a number of other Māori researchers were invited to various meetings, to elicit interest in participating in the fledging Building Challenge discussions. Over that time, a group of some twenty Māori researchers, and a smaller group of non-Māori researchers who had been working on Māori housing research and initiatives had formed a cohesive group, with specific areas of research interest. As a group, they became more formally involved in the development of the proposal.

At that time, the proposed challenge was being co-ordinated by an Interim Governance Group, comprising representatives from each of the collaborating parties. These individuals were from each of the eight New Zealand universities, Auckland Council, and a number of related research institutes and industry organisations. From the outset, the group wanted to ensure there was strong Māori representation across the challenge. The fledging Māori science team were also developing the philosophical foundations, which would eventually

result in the Tāne Whakapiripiri Framework. One of the things they wanted to ensure was that there would be adequate representation at the highest levels of governance. In other challenges, this was represented by a Kāhui, a group of eminent Māori who would sit alongside the governance group, and represent Māori interests. The Maori researchers were also available to meet with stakeholders. Two large meetings were held in 2015 in Auckland, which gave the researchers direction and leadership around research interests and methods.

In early June 2015, at a Māori science team meeting, the necessity for the Kāhui to be established was upheld, to provide strategic input, and be responsible for the Vision Mātauranga component of the proposal. Names of well-respected Māori were nominated to sit on such an entity…….

Then, on June 30th 2015, representatives from each Strategic Research Area were to present their proposals to the governance entity, with representatives from BRANZ and MBIE, who would approve each project, and its funding. By then, I had found my primary interest in the Shaping Places (urban neighbourhoods) programme, and been appointed Principal Investigator of a proposed case study on Glen Innes. Of each of the six presentations, four were approved, and another two would require extra development. One of those was the original Māori research team, which by April 2015 was entitled Ka Whanake Ngā Papakainga, Hei Mauri Ora[3]. It is not the intention of this paper to investigate the minutiae of this research team, suffice to say it underwent a number of changes during its gestation, some of which were considered contentious and conflicted by others in the Māori research team. This period was stressful for many in the Māori research tam, and highlighted the need for a Kāhui, or Māori voice at the highest levels of governance and management. However, on a practical level, work progressed on the final proposal, which was submitted in September 2015, and which still contained the original Māori housing project, now entitled Hei Papakāinga Ora. Ultimately, unfortunately, this project did not go ahead[4], and it was some time before a final Māori housing project was developed and approved[5]. By November 2015, the Independent Assessment Panel, comprising three international scholars, gave their approval to the proposal. Of particular interest to the Māori researchers as their assessment of the Māori research component. Their comments are included below:

- The integration of Māori concepts is strong throughout the proposal, from the over-arching intent, through the SRAs and within individual projects. Furthermore, coverage across the SRAs aligns with the 4 Vision Mātauranga themes (economic,

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[3] Papakainga, glossed as 'original home, village, communal Māori land used in this context to mean, 'Papakainga evolving to enhance mauri', which is life force, vital essence (www.maoridictionary.co.nz)

[4] As I was not privvy to the decision-making in this regard, i cannot give any more detail, but it was a stressful time for many in the Māori Science team.

[5] A contestable round for new projects, ow titled Kāinga Tahi, Kāinga Rua, was held in 2017, to invest part of the money allocated to the original Māori housing project.

environmental, social, and innovation).

- The participation of Māori researchers, from the outset, in developing this proposal, is significant. Research methods accordingly appear participatory and collaborative (i.e. committing to Kaupapa Māori research methods where Māori researchers are involved).

The Ministry approved the proposal a month later, with two recommendations relating to Māori science:

- Continue to implement Vision Mātauranga and ensure effective engagement with the Kāhui.
- Continue to refine the Challenge's approach to Vision Mātauranga including providing clarity on whether projects that address specific Māori issues in the first instance have wider benefit to the New Zealand population.

Thus, from that point, the research could begin, though it would many months before contracting was finally complete. This would appear to be an unfortunate consequence of inter-institutional contracting procedures, particularly between universities, where research officers, rather than researchers, negotiate the finer points of contractual obligation and funding. This did not stop the research from going ahead, and researchers becoming actively involved in their projects. However, a disadvantage for researchers, particularly Māori ones, who are often in junior roles, is that, without contractual buy-outs, some were engaged in research without being freed from other teaching duties, thereby adding pressure to their workloads. In 2016, the majority of research for the Māori science team involved:

- Forming teams in each SRA
- Fine-tuning work programs
- Appointing community, and sub-contracted (not necessarily university-based) researchers
- Meeting with stakeholders (in March and August)
- Attending the Challenge Launch at Orākei Marae (May 5th)
- Disseminating information about the Challenge, and seeking feedback from potential stakeholder communities and organisation at various Hui and Conferences around the country (February, Auckland Housing Research Conference; September, National Māori Housing Conference, Tauranga; October, Māori Research Symposium, Whangarei; November, Ngā Pae o Te Māramatanga Māori Research Centre International Conference, Auckland)
- Developing infrastructure, budget systems
- Planning for Hui and meetings over the duration of the project

In my case, a contract was not finalised until October 2016, and my team, working on the Glen Innes case study were not contracted until December 2016, despite the fact that we had been engaged throughout most of the year.

Alongside the set-up phase, the governance group was formally constituted in May, 2016, its membership comprising:

- Chair: Emeritus Professor Richard Bedford QSO (Queen Service Order), FRSNZ (Fellow of the Royal Society of New Zealand);
- Ngarimu Blair, Ngāti Whātua, background in heritage and resource management and Iwi development;
- Gena Moses-Te Kani, technical lead for the Iwi Leaders Group for Housing, on the National Iwi Chairs Forum (an independent collective of tribal leaders, people who have been appointed by their tribespeople to represent their interests, formed in 2005);
- Bruce Clarkson, Waikato University Deputy Vice-Chancellor Research, and head of the Environmental Research Institute;
- Graham Narkies, co-founder of BoardWorks International, public sector advisor, and CEO in housing, local government and health sector organisations;
- Andrew Redding, extensive experience in executive management and governance in the building industry in Europe, the UK and New Zealand.

By June 2016, Ruth Berry, previously the Interim Director, was appointed as Director of the Challenge. Whilst the original impetus from the Māori research team, and feedback from the Independent Assessment group had called for the creation of a separate Kāhui, the concerns of the Māori research team were ameliorated, because two of the six members of the Governance Group are senior Māori, highly regarded, and well-known for their advocacy of Vision Mātauranga principles and practices. We still retained some concerns that the strong Māori representation at the highest levels, would be reflected right across the Challenge. In the coming months, again these issues were addressed through the setting up of the Māori Science Leadership Team, comprising Principle Investigators from each Strategic Research Area. This group would meet three times a year to represent Māori issues and concerns to the Senior Leadership team. Furthermore, a member of the Māori Science Leadership Team would sit on the senior Leadership Team (in 2017, that is myself, and my alternate, Professor Angus McFarlane). Then, in August 2017, the Director Māori role was established, and Dr Jessica Hutchings assumed that role, giving bi-cultural leadership at that level of the Challenge. To date, this Challenge is the only one of eleven to have done this. Thus, Māori science and researchers are present at every level of governance and management across the entire Challenge. This level of representation is monitored and ensured, through reporting at every level of the project, and through feedback from stakeholders, gleaned in independent research conducted by MBIE.

Two new projects were added to the Challenge in late 2017, to replace the original Papakāinga research. One of these is a study of Te Puea Marae in Auckland, which opened its doors to the homeless during the bitter winter of 2016. That team, based out of Unitec Polytechnic in Auckland, will explore the genesis of the Te Puea programme, and its applicability for other, urban Marae. Also launched in November 2017, is a project based in an isolated rural area in the central North Island. This project is coordinated by Toi Ohomai

Institute of Technology, which promoted the research on their website, stating, "The research project, *Toitū te Kāinga, Toitū te Ora, Toitū te Tangata* (Sustainable Homes, Healthy People), was launched at Murumurunga Marae, Te Whaiti in the Eastern Bay of Plenty, where Te Matekuare Whānau Trust landowners are in the process of developing a papakāinga, or housing settlement… The research will investigate optimal designs and the most effective materials with which to build sustainable, affordable housing for the papakāinga, as well as examine the health benefits resulting from families living in healthier homes" (TOIT, nd). Like the te Puea research, this project involves working closely with, and for, Māori communities, as key stakeholders in the research.

Taken together, these events and activities can be seen as the genesis of a model for working with Māori in the development and implementation of a large, national research project. Māori are present at every level of the research, from governance to stakeholders. The protection of, and support for, Māori is ensured through the range of mechanisms that have been created as a part of the collaboration articulated in the Tāne Whakapiripiri model, between Mana Whenua and Manuhiri. Thus, Tāne Whakapiripiri resonates across the Challenge, and that is the situation at the close of 2017. The first half of the first stage of the Challenge, from June 2016 to June 2019, has seen the creation of a high level of mutually beneficial, collaborative relationships and structures. This paper is testimony to that relationship, and all parties are committed to ensuring that is how the Challenge progresses.

Conclusion

The Building Challenge, from the perspective of Māori researchers, and the development of Mātauranga Māori (Māori Knowledge), remains a 'work in progress'. At a variety of gatherings since its launch in May 2016, the Challenge has provided opportunities for Māori researchers and stakeholder communities to present their views, and sometimes challenges, in an open and culturally safe way. This, combined with the representation of Māori at all levels of the governance and management of the Challenge, has been very purposeful, and is a manifestation of the personal and professional commitment of the Board Chair (Professor Bedford), and National Director (Ruth Berry), who have frequently made mention of their commitment to a meaningful and empowering partnerships with Māori. That commitment is personified in the structures they have helped to create, and the processes they have supported, which were enacted by the Māori Science Team. This level of commitment has created an environment in which Māori researchers and stakeholders are encouraged to believe that we are valued, and our interests and aspirations are reflected.

The theoretical framework for the Tāne Whakapiripiri Model has been outlined above, as being founded on ancient philosophical views translated into a contemporary context. The

practicalities of the model can be seen in its organisational form, see Figure 2: Operationalising Tāne Whakapiripiri below.
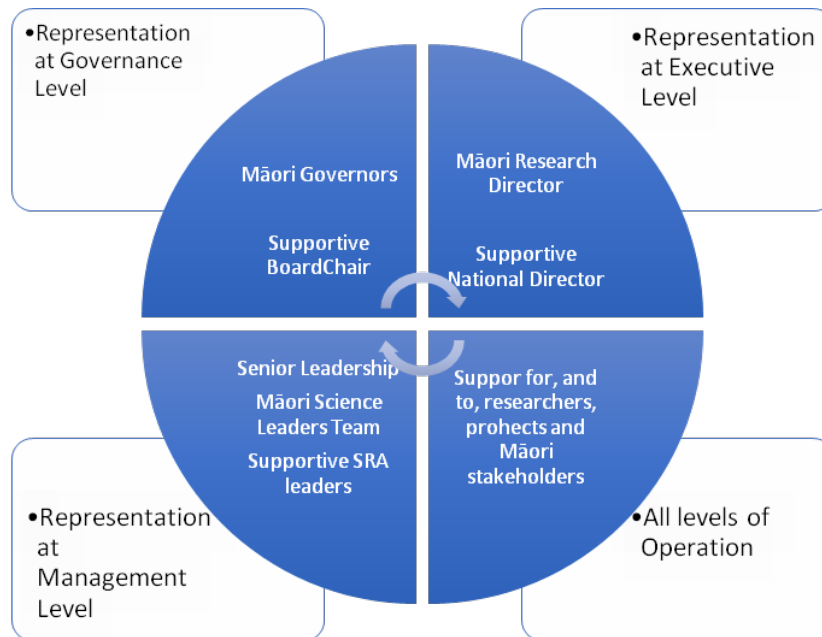
This model remains to be tested, over time, but early indicators are that it is working for the Māori researchers and stakeholders, who remain optimistic that it is a rigorous and relevant framework, that delivers to Māori, personally, professionally and culturally. This will be reviewed regularly by the Māori Science Team, and also across all the operational areas of the project. The next stage, for Tāne Whakapiripiri, and the new Mātauranga Māori generated as part of the Building Challenge, is to disseminate not only the research findings, but also the model. This Challenge has the potential to provide other major, government funded research projects with a framework for working collaboratively and meaningfully with Māori, and the Māori researchers involved with his project are all committed to ensuring this relationship is enduring, and that other research projects develop this, or similar processes. We all believe that when research delivers positive outcomes for Māori, those outcomes are equally important and positive for New Zealand.

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