

Revitalising Te Taiao

How to co-design a place-based approach to support purposeful change and resilience

A Report for Toitū te Whenua, Toiora te Wai (Our Land and Water National Science Challenge) produced by Simon Stokes Consulting Ltd, Pahemata Ltd and the Place-based Pilots Working, Pilot and Next Generation Groups

Pahemata Ltd

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Executive Summary

The Our Land and Water National Science Challenge (OLW) has a vision in which all Aotearoa-New Zealanders can be proud of the health of our land and water and share the economic, environmental, social, and cultural value from Te Taiao.

The focus of this Working Group Report is to provide evidenced insights from a review of place-based initiatives to inform the co-design of two programmes. The programmes are centred on the concept of place-based pilots, to fast-track and extend uptake of land uses, management and practices and value chains to improve the vitality of Te Taiao. These two programmes must provide scaling opportunities and combine mātauranga Māori, experiential knowledge and science underpinned by acknowledging the principles of Te Tiriti o Waitangi.

This report is a compilation of a multiplicity of inputs, perspectives, experience, and skills of the Working Group (along with the Pilot and Next Generation groups). Through both our group processes and practices (tikanga) and our collective research, analysis and writing we have attempted to weave a coherent narrative within this report while ensuring the viewpoints of each group member was given opportunity for expression.

Aotearoa-New Zealand and international examples were reviewed by the project team with a range of criteria detailed to allow for an analysis of what were the key insights and enablers of successful place-based pilots in terms of:

“projects that support land use and land management changes, value chain and in-market initiatives that enhance the resilience, health and prosperity of our whenua, Te Taiao and tangata”.

What the project team learnt from hui and kōrero, and the examples of successful place-based pilots were key insights that will make success possible and achievable in the two programmes. Each key insight is described in this report and referenced by two examples that support its relevance to the design of the OLW place-based programmes:

1. A Treaty of Waitangi lens is foundational to project design
2. Te Taiao as a basis for change
3. Respecting all knowledges
4. Tikanga/values
5. People and community-led change
6. People and Place - sense of place, belonging and wellbeing
7. Collaboration and participation (kotahitanga), including highlighting power imbalance and protecting interests
8. Leadership and management (mana rangatira/mana whakahaere)
9. Changing economic models
10. Interconnected Solutions
11. Inputs - resources including funding and information e.g., spatial data

While an individual pilot can be incredibly successful in a particular context, location, space, and time, this does not mean it will necessarily be successful at a broader scale or over the long term. Both scaling up and out are needed to achieve widespread and significant systems change and to extend the success of pilots to other locations.

Key insights for supporting this scaling are ensuring the OLW programmes:

1. Explicitly fund scaling activities
2. Support and understand people and place
3. Support changes in capacity, regulatory and financial frameworks, markets, infrastructure, and mindsets
4. Support action from farm, orchard, or business-level to country-level
5. Bring people on the journey - scaling involves facilitation of learning, navigation, decision-making, collective action, and negotiation

As well as identifying insights for successful pilots and their scaling, this report begins to recommend the selection criteria and an evaluation process for identifying place-based pilots for the two programmes. The criteria and evaluation processes were designed to specifically give effect to Te Taiao, te Ao Māori and Mātauranga Māori to identify projects that:

1. Contribute directly to the vitality of Te Taiao through products sourced in ways beneficial to Te Taiao, offer high-value opportunities, improve value-chains, create new Te Taiao business approaches, or highlight transitions to new Te Taiao options within the food and fibre sectors.
2. Derived from a mātauranga Māori or kōrero tuku iho knowledge base and a foundational base, and support different knowledge bases - mātauranga, science, and local experiential knowledge and practice.
3. Demonstrate a range of success factors including scalability, transferability, common or universal drivers or motivations, and wide collective support.

Overall, the report provides a pathway of understanding to a range of insights and perspectives that relate to land use and management change and scaling, including non-Māori and specific mātauranga examples. The selection criteria, group processes and tikanga (although not fully 'stress' tested), and hui all provide a good foundation for the two programmes to be designed for research. They also offer a new model of approach for other OLW programmes and projects.

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1. Project Background

The Our Land and Water National Science Challenge (OLW) anticipates a future in which all Aotearoa-New Zealanders can be proud of the state of our land and water, and share the economic, environmental, social, and cultural values from Te Taiao.

Te Taiao is the environment that contains and surrounds us. It has four major components:

- Whenua (soil and land)
- Wai (all freshwater bodies and their connections)
- Āhuarangi (climate across time)
- Koiora (all living communities: human, plant, animal)

Thinking about the environment in this way encourages us to aspire to a future where we all act as land stewards, and where humanity and the natural world sustain each other in an interconnected relationship of respect. Our Land and Water is working to demonstrate and influence how key stakeholders can act as land stewards in a way that is more connected with Te Taiao.

An OLW “mental model” (Figure 1) gives effect to te Ao Māori principles, using a holistic approach to influence and align the way we live and work in ways that are more connected with Te Taiao. Most OLW research has the potential to be informed by a te Ao Māori lens. The inclusion of mātauranga Māori (Māori knowledge) can deepen collective understanding of connections, interdependencies, and intergenerational perspectives.

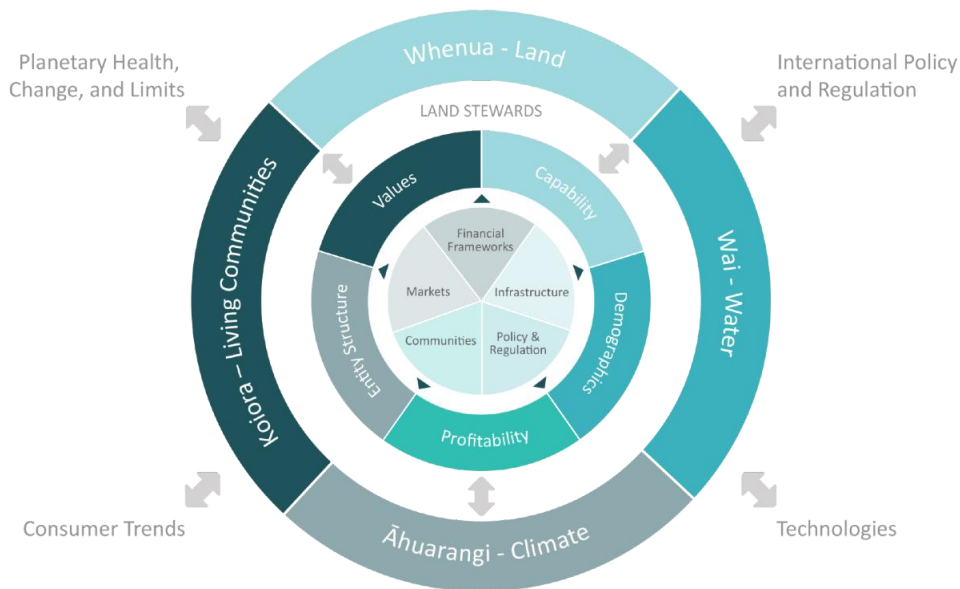


Figure 1: Our Land and Water “mental model”.

Combining mātauranga Māori, Pākehā knowledge, and science will result in a new wave of applied science that is distinctly designed for Aotearoa-New Zealand. This combination is underpinned by acknowledging the principles of Te Tiriti o Waitangi and the partnership approach between mātauranga Māori and science. The philosophy of kaitiakitanga (guardianship of the land) is highly relevant and central to our research.

In concert with this new mental model, [Taiao Ora Tangata Ora](#) is prompting interest in developing, learning from, and scaling enterprises that are moving from Te Taiao in their thinking to Te Taiao in action.

From Thinking to Action - *About the Place-Based Pilots Programme*

The focus of this Working Group is to co-design programmes centred on place-based pilot case studies, that will fast-track and extend uptake of land uses, management and practices and value chains to improve the vitality of Te Taiao.

The [OLW Research Workplan Update 2020](#) aims to move beyond research advice to putting research into action. The Working Group reviewed previous and existing examples of land use and management change, and examples of scaling these ventures up and out to other locations. The review provides recommendations for case study pilots within Aotearoa-New Zealand that will benefit from further research. Composition of the Working Group ensured Māori agribusiness and land management case studies were a priority. The Working Group understands that the outcome-focused research must be te Ao Māori-centric and be cognisant of partnerships under the principles of Te Tiriti o Waitangi. The types of programmes to be co-designed are:

- 1. Use place-based examples of land use/management change** to identify and facilitate (at enterprise and rohe scales) holistic pathways to sustainable land- and freshwater-use options that enhance the vitality of te Taiao. The programme will work with land stewards and organisations in the agri-food and fibre sectors to assess and progress the design, development, implementation, and entry to market of options that support healthy land, water, and people.
- 2. Evidence, communicate and scale up** the pathway and progress of case studies to enhance the vitality of te Taiao. This programme will identify the best mechanisms to share knowledge, experience, and evidence to make land use and land management change in the existing and into new rohe.

2. Introduction

This report is a compilation of a multiplicity of inputs, perspectives, and skills. The Working Group (along with the Pilot and Next Generation Groups) comprises a broad range of skills, sectors, disciplines, ages and working experiences. It is a big team. The challenge, in a brief period of time, was to weave a coherent narrative within this final report while at the same time ensuring the skills and viewpoints of each group member was given opportunity for expression.

Thus, the writing has been a busy internal process of writing, cross-checking, peer interviewing, intra-group review, information sharing, collaboration, and comparison. There has not been one single lead writer but a series or number of writers seeking to converge in their writing style, assessment and analysis in a way that represents a singularity of purpose.

Why develop this reporting approach?

The OLW “mental model” (Fig. 1) invites us to think about a future through interconnected relationships. The inclusion of mātauranga Māori (Māori knowledge) as well as many other forms and disciplines of knowledge and perspectives, is an opportunity to deepen collective understandings of connection and interdependency across an intergenerational horizon. This Working Group sought to take that approach as our own opportunity to build collective action, interconnection, and inclusive outcomes.

Through our group processes, practices (tikanga), collective research, analysis, and writing, we have endeavoured to be true to the Challenge’s “mental model.” Afterall, if we want others to embody this approach, we ought to learn to do it ourselves in the first instance. The size and multiplexity of the group is by design. The group processes, too, have been arranged with a similar intent.

This approach required a combination of structured and unstructured processes, with a preference from the outset to avoid any prescriptive or descriptive approach by the project leadership. Rather, the hope and expectation were that the group itself would start to establish its own collective approach, direction, and work objectives (within the existing deliverable and task framework). The short programme time frames did curtail some of this natural group process – in the interests of time, directions did have to be given to the group at certain junctures. The ‘storming’ aspect of group formation was never fully realized, with group members opting for a collective ‘conform and perform’ approach in the interest of time and focused delivery. The “mental model” is still to be explored further within the group.

The report represents a collective effort and should be read with such in mind. If more time were available, more colourful content with diverse and rich narratives would have resulted. Again, short programme time frames did curtail further detailed investigation and analysis.

Nevertheless, the report is valuable. It provides a wide range of insights and understandings that relate to land use change and scaling across a broad range of nearly 60 international and national examples. Non-Māori and specific mātauranga examples are included. The selection criteria, group processes and tikanga (although not fully ‘stress’ tested) and the engagement processes all provide a good foundation for the next steps of the programme, as well as offer a new model for other OLW programmes and project approaches.

Finally, and most importantly, the report identifies 59 key pilot projects. Given the breadth and depth of the inquiry and the skills of the Working Group, these project recommendations provide options ‘that tick all the boxes.’

This report illustrates the context and background work of the Working Group. The collective insights and the selection criteria identified because of Tasks 1-5 in Table 1 (below) are clearly described, leading, ultimately, to the final recommended case studies and engagement plan (Tasks 6 and 7).

The main body of the report covers the first three deliverables of the OLW Place-Based Pilots Working Group. Each section of the report concerns itself with one of the deliverables and within each section the relevant tasks are detailed and discussed (described in Table 1). Prefacing this illustrative content is a brief outline of the Working Group’s methodology.

The final appendices to the report detail the makeup of the Working Group and their tikanga (code of practice).

Table 1: Deliverables and Tasks

Deliverable/ output	Task
A report to OLW, providing a review of place-based examples of land use or land management change.	1. Review of NZ and overseas examples of place-based pilots of land use change and initiatives, including value chains and in market, and their success (at any scale) or otherwise.
	2. Stock-take of NZ initiatives to design, implement and progress land and water-use change and value chains to improve Te Taiao.
A report to OLW, providing a review of scaling.	3. Review of NZ and overseas examples of experience scaling land use change and value chain initiatives.
	4. Specific attention paid to those examples occurring within Māori-led and Māori participation land use/management and value chain scenarios.

A report to OLW on case studies for anticipated research programmes.	5. Criteria for the selection of case studies (place based or product based) for the anticipated research programmes.
	6. Recommendations for NZ case studies, including Māori-led examples and those with a high degree of Māori participation.
	7. Engagement with case studies to lay the foundation for the following research programme.

The report is structured to present the method and key definitions that are applicable to all tasks. The report then presents three sections, one for each of the deliverables, with sub-sections which cover each of the key tasks.

3. Methodology

A Grounded Theory approach (Glaser and Strauss, 1967) supported the methods used during this review. Grounded Theory is a systematic strategy for developing fresh ideas to simultaneously collect, analyse and create meaning from data. In other words, this approach enabled a flexible yet systematic way to explore, analyse and imagine what future Place-based Pilots could be. The key Grounded Theory strategies used in this review included:

1. Starting with a general idea of where we would begin (Tasks 1-7 in Table 1 (above));
2. Identifying and using social processes, e.g., hui, one-on-one discussions.
3. Concepts (insights) were developed to explain what the data is saying.
4. Grounding concepts in the data, i.e., spreadsheet examples, qualitative interviews, facilitated sense-making hui; and
5. Comparison of the data enabled interconnected relationships among insights to emerge.

Of relevance to this review, a Grounded Theory approach enabled the weaving of a coherent narrative through:

1. Collaboration and participation through structured and unstructured processes among the Working, Pilot and Next Generation Groups.
2. Imaginative future thinking about what could be: a focus on what is emerging but not fully known, a future through interconnected relationships.
3. A respect for, and weaving of, different oratory and written languages (e.g., mātauranga Māori and science);

- Embracing diversity: every individual, whānau, group and iwi has a different ancestral, cultural, spiritual, and emotional connection with their place and their community.

As described earlier:

‘The OLW “mental model” invites us to think about a future through interconnected relationships. The inclusion of mātauranga Māori (Māori knowledge) as well as many other forms and disciplines of knowledge and perspective is an opportunity to deepen collective understandings of connection and interdependency across an intergenerational horizon. This Working Group sought to take that approach as our own opportunity to build collective action, interconnection, and inclusive outcomes.’

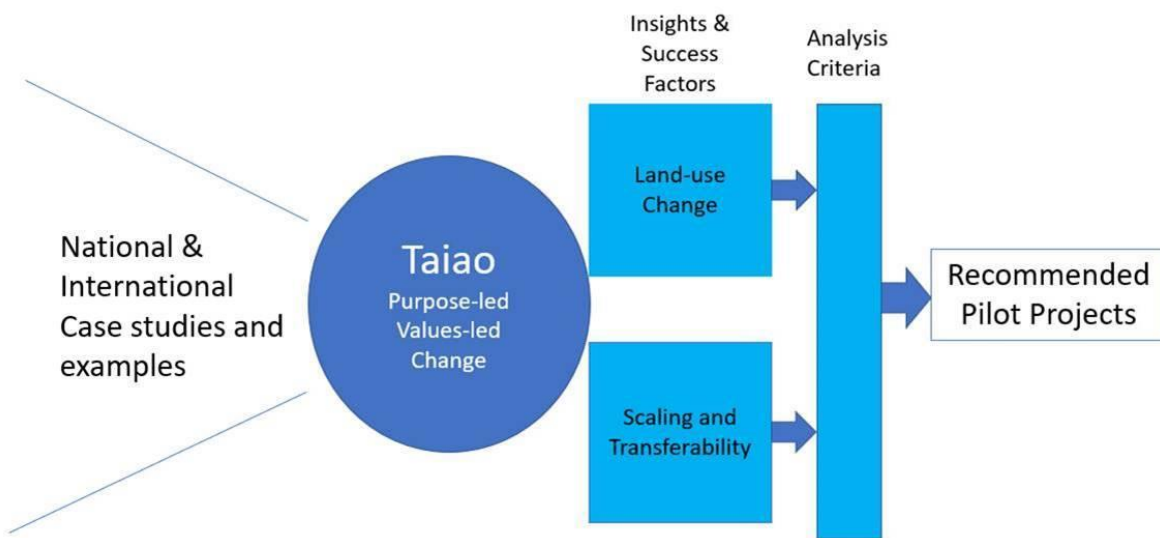


Figure 2: Outline of methodology – a temporal view

Phase One – collaborative design

Two collaborative face-to-face hui, in Whakatāne (April) and Wellington (June), built a cohesive group, and set tikanga around how we work together (Tipu Ake ki te Ora; Appendix). We also developed a work plan to deliver on Tasks 1-7.

Phase Two – data sources and collection

A systematic review of previous and existing place-based examples of land use and management change was carried out. International and national examples were obtained from a range of sources, including scientific papers, media, web research, and group members’ personal connections and knowledge. A spreadsheet was created on 4 June 2021. The spreadsheet contained 39 criteria, designed to draw out rich narratives around the key drivers and values underpinning each place-based example of change. Māori and non-Māori led initiatives that progressed value chains and in-market opportunities to improve Te Taiao were identified. Particular attention was given to examples demonstrating the scaling of land use change and value chain initiatives. The process of developing criteria for selecting place-based pilots is described in Section 7.

Phase Three – sense making

A series of virtual sense-making hui ('zhui') enabled a deeper and richer understanding of the spreadsheet examples. Contributors used narratives to explain why they chose their example(s) and what the example means to them. The ORID method (Objective, Reflective, Interpretive and Decisional) (Spencer, 1989) structured the discussions around what each example demonstrated, the themes (insights), and the content needed in the report to inform the design of the programme proposal. This rich process of sharing and understanding enabled this diverse group to learn from each other's thinking, experiences, and knowledge sets.

Phase Four – concepts and relationships emerge from the data

An inductive thematic analysis strategy (Guest, MacQueen, & Namey, 2012) was used to systematically analyse the place-based project examples. Each example was read in its entirety and notes made until an overall understanding of each example was gained in its context. The themes and sub-themes were identified, and these compared and contrasted across examples. Follow-up hui, interviews and research provided further context for why themes or sub-themes may be similar or different. Ongoing kōrero about the themes enabled the interconnected relationships to emerge. These themes are reported as key insights in this report.

Phase Five – pulling it together

Sense-making and change pathway processes were used to synthesis the insights from this report with real world examples of what Working Group, Pilot and Next Generation Group members are doing in their businesses and communities. This synthesis was used to inform the programme co-design and was done in a facilitated face-to-face hui in Wellington on 3-4 August 2021. Key recommendations for programme design were distilled from this report using the ORID sense-making method (Spencer, 1989). To describe the programme change pathway to impact, from programme inputs and activities to outcomes and impact (Taylor-Powell & Henert, 2008), the group began with a visioning exercise. This exercise imagined three generations ahead that Te Taiao is thriving; what is seen, what we feel, and what we are doing differently. The change pathway to elements of this vision were then described by the group by exploring the short- to long-term changes for people and communities along the pathway to the vision.

4. Reviewing place-based examples of land use or land management change to identify key insights

A review of successful Aotearoa-New Zealand and overseas place-based initiatives will inform the development of two new place-based pilot programmes. This review explored place-based examples of land use and land management change, including value chains and in-market initiatives. Key insights were drawn from these examples, and these key insights will be used in the programme co-design. Research completed and underway within other OLW programmes was also reviewed, to identify opportunities to integrate this research with the place-based pilot programmes.

‘Success’ was explored by the project team. While a project can be incredibly successful in a particular context, location, space, and time, this does not mean it will be successful at a broader scale or over the long term. As explained earlier, the Grounded Theory approach and the wide range of criteria used to systematically review the examples, resulted in key insights and enablers of change being identified. Furthermore, projects were deemed to be successful in terms of:

“supporting land use and land management changes, value chain and in-market initiatives that enhance the resilience, health and prosperity of our whenua, Te Taiao and tangata.”

These key insights are illustrated in Figure 3 and arranged according to their respective social, political, economic, and environmental relevance using a Te Tiriti-based framework. Each key insight is explored further, and two brief illustrative examples are provided to support the relevance of each insight to the design of an OLW programme.

The eleven key insights are:

1. A Treaty of Waitangi lens is foundational to project design
2. Te Taiao as a basis for change
3. Respecting all knowledges
4. Tikanga/values
5. People and community-led change
6. People and Place - sense of place, belonging and wellbeing
7. Collaboration and participation (kotahitanga), including highlighting power imbalance and protecting interests
8. Leadership and management (mana rangatira/mana whakahaere)
9. Changing economic models
10. Interconnected solutions
11. Inputs - resources including funding and information

These insights were analysed and arranged according to what sits at the heart of enduring success in Aotearoa-New Zealand. This revolved around the relationship and position of Te Tiriti o Waitangi; the inter-relationships and differing (and similar) values, knowledge, and worldviews between tangata whenua and tangata tiriti. Outside the heart, were the ‘wings’ of place-based success. These insights highlighted the relative differences across Māori and non-Māori values, knowledge, and worldviews. While recognising, at the same time, these insights shared a high level of ‘relatedness’ across cultures i.e., they were similar but different.

The grouping and ordering of the key insights is illustrated in Figure 3. The pātiki (diamond) illustrates the heart insights while each of the four niho-taniwha (triangles) in each corner represent the winged insights. Figure 3 intends to show that without heart a project will not fly far and without wings a project will struggle to get off the ground. So, while there is a clear prioritisation of insights with a first focus on the heart, the illustration also strives to point out the importance of the wings to provide balance, support, and forward direction.

The remainder of this section explores each of these insights further and provides brief illustrative examples.

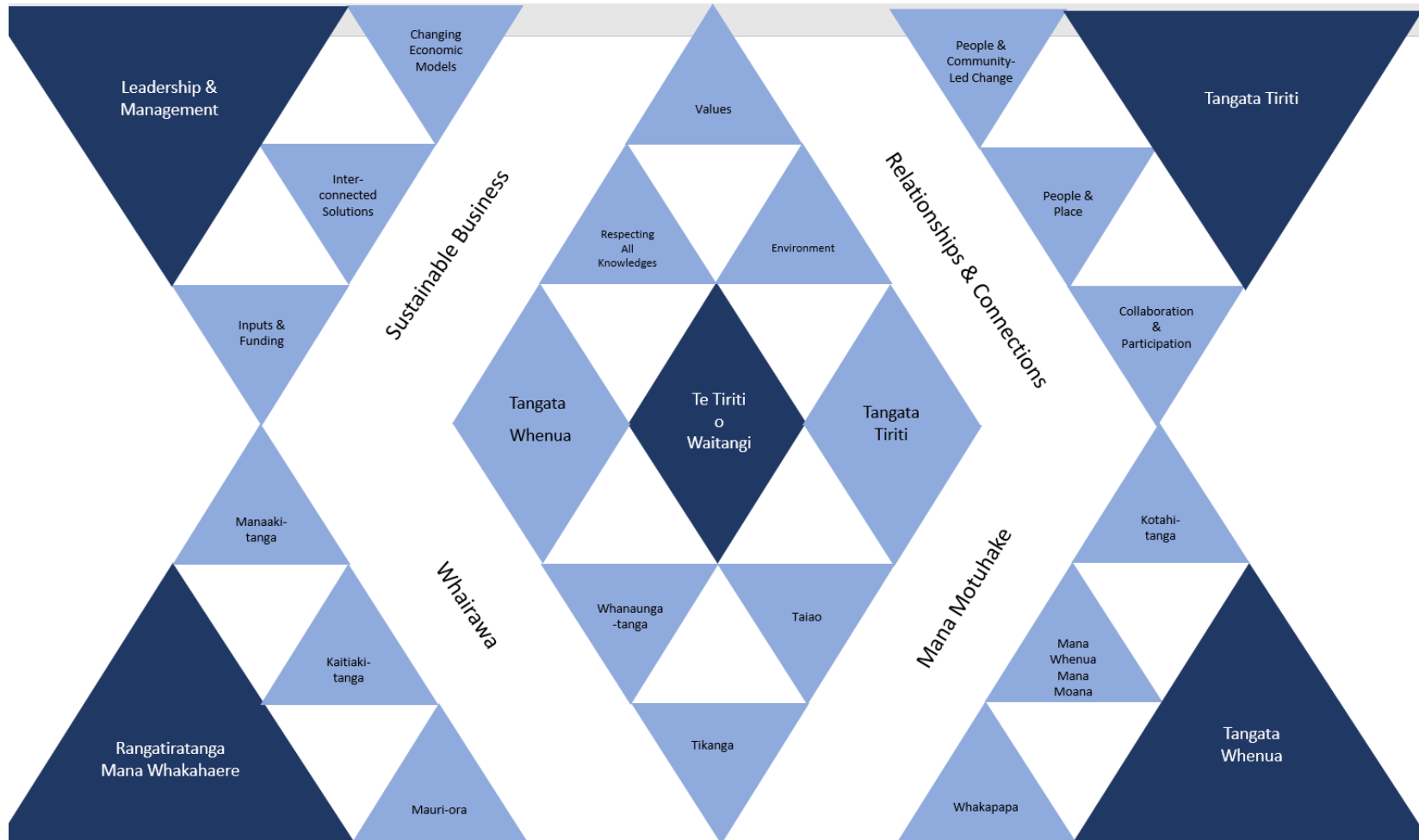


Figure 3. Taiao ora - purpose led change - as an expression of key cultural, social, political, economic, and environmental insights

4.1 Key Insight: A Treaty of Waitangi lens is foundational to project design

Definition and Explanation

The interconnection between tangata whenua and Te Taiao is kaitiakitanga, or an example of what is protected by Te Tiriti o Waitangi.¹ As Aotearoa's founding document, Te Tiriti offers a powerful framework for connecting systems and communities of knowledge in ways that are mutually beneficial and future focused (Te Pūtahitanga, 2021).

The principles of the Treaty continue to evolve from the original Court of Appeal decisions in 1980s² and subsequent Waitangi Tribunal Findings³. The principles can be considered collectively as *"the underlying mutual obligations and responsibilities which the Treaty places on the parties and will continue to evolve over time."*⁴

For the purposes of this research, the following principles have been adapted as part of the place-based pilots programme (Manaaki Whenua, 2014):

- Reciprocity (recognition of the essential bargain).
- Rangatiratanga (authority, self-determination).
- Shared decision-making.
- Partnership.
- Active protection; and
- Ōritetanga (mutual benefit, the right of development and redress).

OLW has embraced the opportunity to embed and extend the Treaty principles within a place-based context. These principles go beyond the relationship between Māori and Pākehā to influence improved land use and management approaches for Te Taiao. The intent of the OLW programme is to give practical effect to the principles by manifesting them through action.

Examples

The enactment of the Te Urewera Act 2014 and Te Awa Tupuna (Whanganui River Claims Settlement) Act 2017 was the result of long negotiations between Māori and the Crown to settle the Treaty of Waitangi Claims. In effect, these two Acts are examples of recognition by the Crown of Māori enacting values such as the kaitiakitanga over tupuna whenua and tupuna awa. Importantly, the Acts recognize the whenua (Te Urewera) and awa (Whanganui) as indivisible whole entities.

These examples of Te Urewera and Whanganui have led to other partnership, participation and protection mechanisms being worked through by both Māori and Pākehā. The Sanctuary Mountain

¹ Kaitiakitanga is an integral part of the customary rights and interests of Māori in relation to the taonga referred to in the Treaty. [170] TRANS-TASMAN RESOURCES LIMITED v TARANAKI-WHANGANUI CONSERVATION BOARD [2020] NZCA 86 [3 April 2020]

² The primary case being *New Zealand Māori Council v A-G* [1987] 1 NZLR 641

³ A leading example is provided within The Waitangi Tribunal Wai 262 Report – Ko Aotearoa Tenei (2011)

⁴ *Carter Holt Harvey Ltd v Te Runanga o Tuwharetoa ki Kawerau* [2003] 2 NZLR 349; (2003) 9 ELRNZ 182 (HC), citing *NZ Māori Council v A-G* [1994] 1 NZLR 513 (PC), 517, per Lord Woolf.

Maungatautari Project is one such example. This project began with a dream to protect plant and animal species, and a drive to inspire both national and worldwide audiences to get involved in environmental and wildlife conservation. This partnership approach has scaled out and up through the efforts of local iwi, landowners, the community, government, and non-government entities.

Summary

The recognition of Te Urewera and Whanganui through the principles of Te Tiriti and the Sanctuary Mountain Maungatautari Project, serve to illustrate mechanisms put in place through partnership and participation between Māori, community, and the Crown. These mechanisms will ensure the protection of the health and wellbeing of place: whenua, flora, fauna and awa.

Although primarily focused on place and people, these examples offer an exciting challenge to align OLW with Te Tiriti principles, and to leverage and transfer these principles into the value chain and in market. The way is then paved for a story to be told about the harmony that exists between land and people, a story that resonates from land to brand.

4.2 Key Insight: Te Taiao as a basis for change

Definition and Explanation

Te Taiao is the interconnection of wai, whenua, āhuarangi and koiroa. From a Māori worldview, Te Taiao manifests itself through whakapapa; be it people, landscape, plants, and animals. All are interconnected and intrinsically linked with biodiversity, whereby there is mauri (life force), mana (authority), tapu (sacred) and wairua (spirit). Te Taiao, by definition, includes the entire natural flowing expanse of our existence; multiple living cycles each interconnected at a universal scale. Te Taiao is often simplified to the biophysical and human spheres, but it is much more. Te Taiao encompasses everything that is 'growing and flowing' in our physical, metaphysical, temporal (a past-present-future continuum), and ethnographical spheres. Te Tai Ao is a universal 'Ao.'

Given this universality, in all place-based examples reviewed, Te Taiao was a consistent primary concern for people, communities, and agencies wanting to make change. The all-embracing, all-encompassing nature of Te Taiao has the unending potential to interweave 'multiple stakeholders, viewpoints, perceptions, practices and interests across programmes, sectors, and national systems' (Vereijssen et al, 2017, p.108). Conversely, a limited or rigid definition of Te Taiao, one unrelated to the Māori cultural context, has an equal ability to narrow viewpoints and foreclose opportunities for wider stakeholder participation and multiple viewpoints.

Unsurprisingly, the concept of Te Taiao underpins all other key insights, including respecting all knowledges; people and place; tikanga and values; collaboration; inter-connected solutions, leadership, and community-led change. Sound understanding of the key factors which influence outcomes for Te Taiao need to be kept front of mind when designing place-based programs.

Examples

Te Aro Turuki i Te Whakatutukitanga at Waitangi seeks to integrate mātauranga Māori solutions for water storage locations, usage, and allocation. The project includes a mātauranga-based monitoring and evaluation system to influence standards, practices and regulations for the use and access to water in the region. The focus is on the development of an indigenous monitoring tool that is mātauranga Māori rich and enables good kaitiakitanga decisions, while at the same time providing innovative economic benefits appropriate to the whenua. Councils, rural farming communities, whānau, kaumatua, hapū, Māori māramataka specialists/scientists have been engaged in a series of wananga to explore better utilisation of land that is consistent with māramataka Māori and is environmentally sustainable. The project is arranged in three phases: i) comparable data analysis correlating mātauranga Māori and science expertise; ii) model design and monitoring alongside existing practice; iii) testing, monitoring, and evaluation (for possible accreditation). The ultimate outcome will see integrated mātauranga Māori practices normalised in regional and national environmental and developmental policy making.

Ngā Tāngata Tiaki o Whanganui (Whanganui River Trust) is identifying the economic potential of the existing flora along the Whanganui awa that are associated with local Māori communities. The first phase of the project was the establishment of a database of relevant taonga species. The next phase will be the establishment of nurseries that underpin economic opportunity for community, hapū and iwi. The project was previously funded through MBIE (VM Fund) and Bioprotection CoRE (Tree health) and enjoys the support of Tahuri Whenua (National Māori vegetable growers collective). The Project creates contemporary opportunities from historical land use activities, including the establishment of nursery facilities, community engagement and employment, and potential brand and value chain development. The approach aligns with hapū and marae values and is driven by whakapapa and local mātauranga. Brand development for the awa for a range of products is the ultimate external aim, driven internally by cultural and identity development. The Project seeks to return value to river communities and to support communities with their whakapapa relationship to their awa - ki uta ki tai.

Summary

Te Taiao as the basis for change is essential to developing place-based programmes. Te Taiao encompasses everything that is 'growing and flowing' in our world and, given this universality, it is a consistent primary concern for people, communities, and agencies wanting to make change. The all-embracing, all-encompassing nature of Te Taiao has the unending potential to interweave multiple stakeholders together under a project umbrella that is broad enough to accommodate all views, perspectives, knowledge, objectives, interests, and values.

4.3 Key Insight: Respecting all knowledges

Definition and Explanation

Weaving different knowledge systems ('ways of knowing') will strengthen future place-based pilots by enabling differences to be respected and valued. Different knowledge systems exist. For example, factual knowledge is created from quantifiable empirical data (e.g., science knowledge), and experiential and traditional knowledge is created from practice, observation, and experience (e.g., mātauranga Māori, intergenerational and practical know-how). Furthermore, differences exist in the philosophy and values

that underpin a particular knowledge system, and the way that ideas are shared, and knowledge is created and imparted.

Knowledge also comes from diverse cultural contexts. While another culture’s knowledge may be different, it is important to not assume that different is wrong. Quite simply, knowledge is assembled through different worldviews, by different methods, and is used to serve different purposes. Knowledge sits within its own world view and cultural context.

Several points around the creation and sharing of knowledge were raised in relation to the design and delivery of future place-based pilots. It is key to ‘allow time’ in the project design and delivery phases for the kōrero, which in turn enables relationships to be built, and for knowledge to be shared, explored, respected, and valued. In Aotearoa-New Zealand concerns remain that science continues to inform and influence policy change, without acknowledging Te Tiriti o Waitangi partnership and the role of mātauranga Māori in informing and influencing that same policy. Historically, there has and continues to be a power and resourcing imbalance in the acknowledgement and development of indigenous knowledge systems internationally. The weaving of different knowledge systems can build and strengthen understanding, cultural diversity and whānau and whenua well-being. The Rauika Māngai Guide to Vision Mātauranga, demonstrated in Figure 4 below, suggests a movement along a continuum from poor to excellent practice in science impact and success (Rauika Māngai 2020).



Figure 4: Shifting research to empower Māori knowledge. Source: Rauika Māngai (2020)

Identifying, valuing, and then using all knowledge is essential for the long-term success of place-based pilots in Aotearoa New Zealand. The starting point is to understand the deeply held values and viewpoints that diverse individuals bring to a group. A group built on a sound foundation of understanding, will be more likely to inquire and listen actively and openly to the knowledge within the group and, in doing so, produce more creative, collaborative, innovative and inclusive ways of progressing.

Examples

The Tuhoe Tuawhenua Trust (Ruatāhuna), and founders of Manawa Honey NZ, developed a deeper understanding of their forests from weaving different knowledge systems. Manaaki Whenua (Landcare Research) worked with the Trust to develop a forest monitoring package based on Te Ao Māori to reflect the interconnectedness of people and land, using both mātauranga Māori and scientific approaches. The

weaving of traditional and scientific knowledge ensured the monitoring system reflected a world view of how tangata whenua understand, interact, and relate to their forests, plus a monitoring system that would capture changes in the forest that matter to the people.

The Burren, located in County Clare, Ireland, is recognized as one of Ireland's heritage landscapes. The Burren is also a farming landscape and boasts a proud heritage of almost 6,000 years of agricultural practice. Traditional local knowledge, or knowledge handed down through generations of Burren farmers, continues to shape the current low intensity grazing practices that are maintaining and enhancing environmental quality in the Burren. These traditional farming practices are being supported and enhanced by research undertaken through the BurrenLife research programme (e.g., alternatives to winter silage). Farmers are also supported to use their own practical skills and experiences. For example, the stone walls and gates are a defining cultural feature in the landscape, but also key to effective stock management. These stone walls and gates are being repaired using traditional designs, methods, and materials.

Summary

Knowledge exists in different forms (e.g., factual, traditional, and experiential). Different worldviews or cultural contexts also shape how knowledge is created and shared (e.g., oratory versus written). Identifying, valuing, respecting, and using all knowledge is essential for the long-term success of place-based pilots in Aotearoa-New Zealand.

In this insight the use of different knowledge systems has been applied in two quite different sets of circumstances. Though different, there is the opportunity for cross-fertilisation of ideas, experience and actions thus enabling the application of different knowledge systems to learn from each other whilst respecting the differences. Two different communities culturally, socially, and economically have banded together to enact change using knowledge factually, experientially, and traditionally.

4.4 Key Insight: Tikanga/values

Definition and Explanation

Values are the principles that help an individual decide what is right or wrong and how to act in various situations. Values are deeply held and slow to shift (Knook & Turner, 2020). Tikanga is the customary system of values and practices that have developed over time and are deeply embedded in the social context (www.Māoridictionary.co.nz).

Values underpin storytelling and brand development and are used in narratives as leverage to build markets and to scale up or out. For example, Te Pae Tawhiti is Wakatū's 500-year intergenerational plan. This plan "establishes the guiding vision for their future. The key principles of Te Pae Tawhiti are embedded in all activities across the Wakatū Group. Their five long term goals to implement Te Pae Tawhiti focus on whānau (our people), pūtea (building value), ngākau hihiko (the ethic of agility and innovation), papa whenua (preserving their whenua and taonga), and taiao (whenua ora and tangata ora). All their cultural and commercial activities align with the five goals."

Shared values and tikanga, or the *'way we do things here,'* underpin decision making and the code of behaviour of individuals, whānau, groups and communities. While tikanga is always present and understood, it is not always obvious or explicit to individuals from outside an existing group or community. Shared values can help a group work together more effectively and can enable a group to better articulate the outcomes they want.

Before a group can effectively work together and agree on actions, the group needs to discuss and develop their shared code of behaviour (tikanga) and values. Groups are more likely to succeed if they can articulate:

- The values they each bring and those shared with others; and
- How the group should operate, to ensure the behaviour of individuals is in concert with the value set of the collective.

Working collectively also requires individuals to be willing to actively listen and be respectful and inclusive of knowledge, difference, and diversity. As groups and initiatives grow in scale, new members join and can bring the potential for disagreement and value misalignment. For a group to be successful, those involved must acknowledge and respect their different starting points as individuals to build a collective community.

Examples

Waiū Dairy, a dairy processing plant in the Bay of Plenty, demonstrates how a shared set of values shapes their decision-making and business behaviour. Waiū focuses on looking after people, the environment, and customers. Their way of working is underpinned by the strong core values of whānaungatanga (building relationships and coming together), reciprocity between people and the land, and kaitiakitanga (environmental guardianship).

Iwi-owned Whakatāwai Station is an example of how a values-based framework is guiding on-farm decision making. Their framework contains the three core values of kaitiakitanga, manaakitanga and whakatipu rawa. The trustees rank decisions from high-low based on the impact of a particular decision on each of the three core values, using both biophysical and cultural assessment approaches.

Summary

A core set of shared values and tikanga amongst individuals in a group that seeks to initiate change, provides an anchor point for the development and growth of the group. When challenges occur, including new and sometimes conflicting ideas and ways of doing things, shared values and tikanga are important foundations that enable a group to anchor and flourish.

4.5 Key Insight: People, Connection & Community-led change

Definition and Explanation

People and communities leading change will result in the successful implementation and uptake of place-based pilots. It is the practices to land use and management by **people** that we are asking to change.

Change led by people and communities can be described as a 'ground up' approach. "Ground-up' differs from a 'top down' approach, or one that is often administered by regulation, project-based engagement, and policy. People and community led change can ensure the implementation of practice change is appropriate and relevant to the place, the availability of resources and the needs and values of its people.

Communities and people are often consulted as stakeholders in projects that seek to implement practice change. However, this form of engagement is often seen as one-off events such as hui, community meeting or survey, and can fail to connect with Māori, Pasifika, young people, and those from lower socio-economic backgrounds (Simon et al. 2020). As a result, 'people and communities **leading** change' is believed to be more effective than the 'engagement of people and communities for change.'

For the successful implementation of placed based pilots, it is essential to acknowledge the complexity and diversity of people and communities, and their various needs for change. Experience tells us that bringing people together around a shared kaupapa will foster collaboration and will enable people to embrace the challenges and opportunities that change can bring (Turner et al., 2020).

Empowering local leadership is pivotal to ensuring that the drivers of change are relevant to the place and the shared values of the community where the change is required. Many people and communities have different drivers for change. For example, the drivers for change could be a combination of a direct response to a changing local environment plus a values-based decision to reduce the future climate change/environmental impact.

Examples

From the early 1960s in Brazil, the Brazilian Institute for Coffee and the government Organisation of Technical Assistance and Rural Extension Services (EMATER) promoted the 'Green Revolution' with the objective to spur economic growth and modernise agriculture. This initiative led to biodiversity loss, soil erosion, deforestation, pollution and depletion of water sources and indebtedness. A small community of indigenous farmers pooled their resources to buy the land and develop a regenerative agro-ecological mode of agriculture, converting from coffee monocropping to coffee and pasture, and beans, maize, cassava, rice, sugarcane, legumes, fruits, and vegetables (avocados, bananas, prunes, citrus, papaya, and peach). Environmental improvements in soil and water (quality and quantity) are substantial, as are the economic, social and health impacts on this community (van den Berg et al., 2018). This community led change is a long-lasting implementation strategy rather than a short-term project.

In recent times, [Kanapu Hemp Food](#) has started collaborating with land-owners with an aim to achieve a number of outcomes through planting of organic hemp. Firstly, remediating the land to bring back its health, vibrancy, and vitality; secondly connecting the disconnected - many whānau owners leave their ancestral homes and lose connection with their 'place.:' and thirdly, whenua owners get to lead an emerging industry instead of following and thereby missing out on leading change and capturing first-mover advantage. As a result, whenua owners can achieve a greater rate of return from their land than third party leases. Restoration of their tipuna lands helps to return mana, build a sense of connection and place, create employment, and generate a better economic return.

Summary

Change can be driven by many factors, and the influence of these factors can have different bearings based on the makeup of the community. For future research programmes to have long lasting transformative change, people and community and leadership needs to be at its heart. Leadership by the people and communities who are required to change. Success requires engagement from the ground up to uncover the hopes, dreams and needs of our communities to ensure long lasting transformative change.

4.6 Key Insight: People and Place – a sense of place, belonging and wellbeing

Definition and Explanation

‘Sense of place’ describes how places carry personal meaning and significance, and how people develop deep emotional and physical connections to a place (Stedman 2003). A place is where people feel they belong. Individuals with a strong emotional attachment to place are more likely to respect a place, and want to protect, care for, and improve their place (Rudestam 2014). In turn, protecting and caring for a place can further deepen an individual’s emotional attachment, and sense of place.

Māori have longstanding connections and whakapapa back to the land (e.g., forests, wetlands, rivers, oceans, mountains), and these connections are interlinked with Māori identity, health, and wellbeing (Waiti & Awatere 2019). A Māori sense of place not only looks back and includes historical connections, but also forwards to maintaining a connection for generations to come. As a result, ‘environmental and cultural connections to land enable the development of place-specific and culturally driven principles that promote the health and wellbeing of Māori populations’ (Marques et al 2020).

Place-based pilots are place-centred and start with people and place. Place-centred approaches develop a more holistic view of a place, in terms of people and their experiences and relationships. These approaches result in a more inclusive ‘common ground’ or perspective to start from (Turner et al 2020). Place also serves to accommodate the breadth of tangible and intangible perspectives of health and wellbeing across individuals and communities. Place-based pilots enable multiple stakeholders to understand and consider people’s emotional and physical connections with a place, a factor crucial to both restoring Te Taiao and the development of environmental policy.

Examples

Many conversations based around maps (participatory-based mapping) enabled a community to come together to develop an Integrated Catchment Enhancement Plan for [Te Hoiere Pelorus Catchment](#). Conversations in community halls, around kitchen tables, at camping grounds, at cafes, in the bush, beside the river, and with kaumatua and whānau at Te Hora Marae, helped people share their emotional attachment to Te Hoiere. People shared their ancestral connections, what they love about their place, and what they want to protect and enhance. Current interactions and shared memories helped develop a series of interconnected restoration solutions. A mātauranga Māori informed monitoring programme will be developed at key sites in the catchment (e.g., Kahikatea Flat, Totara Flat, and downstream of the Wakamarina River confluence) and will add to and inform the data collected by the Marlborough District Council water quality monitoring programme. The Te Hoiere Catchment Restoration Project is a place-

centred approach that is firmly focused on the value of place to enhance the vitality of the environment and the community.

Wai (Water Action Initiative) Wanaka represents a group of community-based organisations that have come together to create a space to show how land, water, flora, fauna, climate, and humans are interconnected. Community engagement revealed what people valued about their waterways. They wanted their beautiful lakes, rivers, and ecosystems to be healthy, and for water that is drinkable and safe for recreation. It was recognised that water is impacted by pollution, pest species, an increase in human activity, and climate change. A Community Catchment Plan provides a blueprint for the future. It guides individuals, community groups and businesses taking positive work to improve and maintain the long-term health of the wider Upper Clutha's freshwater. This plan identifies environmental risks, gaps in understanding, and the 60 actions needed to mitigate catchment degradation.

Summary

Place-based pilots start with people and place. Place-centred approaches bring people together to kōrero about what is special to them and to develop a deeper shared understanding of the multi-dimensional importance of place.

4.7 Key Insight: Collaboration and participation (kotahitanga), including highlighting power imbalances and protecting interests

Definition and Explanation

Coming together, working together, and participation in direction setting are common strengths of many successful projects. Project growth and development equally requires collaboration (people coming together to design or develop a project) and participation (taking part in the project). Effective collaboration and participation involve people from design to delivery, thereby enabling people to come together to share ideas and create knowledge. Collaborative groups integrate the resources of all parties involved to collectively decide an outcome

For effective change, a group must decide what they are creating together and for what to aim. This can take time. When decisions are not rushed, and the problem or dilemma is defined by local people, there is a better chance of group agreement over problem and solution definition, solutions, and desired outcomes. In addition, any changes in behaviour, connection and contributions are more likely to be sustained if the project has meaning to all directly involved. Furthermore, having all stakeholders and partners around the table is likely to be a strong enabler for success. The key issues that can affect the success of collaborations are: (i) the nature of the problem; (ii) the personal and collective qualities of those involved; (iii) power relationships, and (iv) the collaborative process (Kirk et al 2021).

Through unified collaboration and participation (termed kotahitanga) those taking part:

- Develop a shared understanding of issues.
- Understand the importance of working together to identify and implement solutions.
- Encounter difference and diversity in thought, ideas, and process as an opportunity to learn.

- Are better able to meet their individual needs and of those of the group and community.
- Share ideas and can create knowledge or develop new understandings.
- Can appreciate different knowledge systems (e.g., mātauranga Māori and science) and have opportunities to deepen their own ways of seeing the world.

For Māori, often the process of engagement is different and often revolves around a focus on *kanohi kitea*, *tatai tangata*, and *whakatakoto kaupapa*. There can be a formal process or ritual of engagement or an informal process (or both). The process must take place and is usually dictated by the person or entity that is hosting or receiving new faces or new ideas. This takes time to unfold. The initial engagement often begins with connection (ideally face-to-face) or a desire to gain an understanding of who you are, what you represent and how you present yourself. This journey cannot be rushed. When first meeting, Māori will often want to know *'where are you from'* as opposed to *'what is your name.'* By asking this people can start forming connections through relating to place and to people (both past and present). This is the beginning of the journey. New faces and new ideas will need to undergo a series of 'visits' so that they can be considered and examined physically, virtually, mentally, and spiritually. Over this journey - the so called *'thousand cups of tea'* - people will start to connect, find commonalities, flesh out challenges and opportunities, and hopefully, but not always, reach an end goal.

Examples

[AgriSea](#) invited a range of people to attend an initial hui to discuss the eutrophication issues and health of *Tikapa Moana o Hauraki / Hauraki Gulf*. Through the process of *whānaungatanga* the hui ensured there was time and space to acknowledge the many parties and their experiences in the room. Participants gave in-depth presentations of values, solutions, and innovations which added to the values and vision of the group. The group decided to pursue and develop a project that included a diverse group of people including *Iwi*, *hapū* and *whānau*; Councils; funders; environmentalist groups; farmers; economists; scientists; and industry reps.

[Poutama Trust](#) played an independent 'honest broker' role using the power of *whānaungatanga* (collaboration) to engender confidence and trust among all that became involved in the establishment of *Waiū Dairy*. The Trust focused on bringing Māori, Pākehā and offshore customers together through *'a journey of a thousand cups of tea.'* It moved comfortably between diverse groups as well as across both *Te Ao Māori* and the *Pakeha* worlds and brought to bear a wide and deep set of connections and relationships. The attributes, relationships, networks, and connections that Poutama brought to bear were all clear demonstrations of the roles collaboration and participation play in generating long-term success.

Summary

Collaboration and participation involve rituals of engagement and can take time to evolve. Imbalances will be present and must be weighed up and taken into consideration on how they will play out. Several agendas can also be in play. Imbalances and agendas are challenges to be navigated within the realm of power relationships. It helps if commonalities are identified and used as a base to work from. Often this

is helped by having an intermediary or someone willing to take a leadership role within a group. This requires being objective and impartial as well as being enthused, excited, and committed to the purpose.

Coming together and working together are fundamental to the long-term success of place-based projects. A process of connecting, finding commonalities and developing relationships will result in people sharing ideas, creating knowledge, developing new understandings, and identifying solutions.

4.8 Key Insight: Leadership and management (mana rangatira/mana whakahaere)

Definition and Explanation

Leadership and management are complex and multifarious and often emerge from a specific contextual and cultural 'place' – horses for courses. Our review of place-based land use change initiatives revealed the following key aspects of leadership and management in operation:

- **Crystalise** – the ability to coalesce various concepts and perceptions to build a resonant and unifying super-ordinant vision.
- **Galvanise** – a focus on building of a strong, united committed workforce and support group.
- **Organise** – an inherent understanding of the key steps required for a coherent and effective response to action and the ability to enrol others with requisite skills; and
- **Realise** – willingness to provide the necessary time, energy, resource, passion, and skills (above) to rally and sustain the activities of the group to progress, focus, and complete tasks.

Underpinning these leadership aspects are the collaborative and participatory processes essential to bringing people together and to develop shared understandings. Included in this leadership approach is the need to respect values, and to weave together different knowledge systems.

Contemporary research into Māori leadership tends to identify similar qualities including “humane orientated, self-protected, charismatic/values-based, and team orientated behaviour.” (Pfieffer, 2005). Similar observations are made in respect of Pākehā Aotearoa-New Zealand leadership, although these traits are slightly less prevalent. These identified Māori leadership behaviours can be described as:

- Humane orientation - the ability to encourage and reward individuals for being “fair, altruistic, friendly, generous, caring and kind to others.”
- Self-protection - a willingness to evade, avoid negatives, maintain status and class, be alone and asocial and selfish.
- Charismatic/values based - incorporates the ability to inspire, to motivate, and to expect high performance outcomes from others based on firmly held core values.”
- Team orientation - behaviours such as communicativeness, consultation, team building, informing, co-ordinating, group awareness, collaboration, diplomacy, worldliness, and administrative competence

What are universally common cultural features of outstanding Māori and Pakeha leadership are “participative and autonomous” behaviour. Participative leadership is the use of delegation of

responsibilities and egalitarian practices, while autonomous leadership is reflected by the preponderance of independent, unique, and individualistic approaches (Pfieffer, 2005).

Examples

Pūniu River Care was formed in 2015 by Shannon Te Huia after a stakeholder hui involving around forty key organisations. Those attending began to develop a shared vision for the Pūniu River. The Project currently employs forty-seven people, with each supported by a commitment to empower staff to engage in the tikanga and kawa of each of the marae which connect with Pūniu River. Activities involve riparian planting established at a large scale, through to eco-sourcing seed, growing and preparing seedlings, planting, and maintaining native areas. By using relationships, community engagements, and digital platforms and technology, the Project seeks to: connect people with nature; establish recreation and tourism areas; extend and deepen engagement with marae; deliver justice rehabilitation programmes; engage farm communities; and build public awareness. Values are a key measure of their success and enable them to make the right decisions for the individual and for their teams.

Restoring the mauri (lifeforce) of Lake Waikare has been an on-going 7-year project for the whānau and hapū of Matahuru. Tawera Nikau has used his skills and resources to bring people together and develop shared understandings of the restoration of Te Waiū o Waikare. He has helped to lead and maintain leadership over the project for more than 10 years and has sought partners, help, support, funding, and expertise. As a recognized sports and one time TV personality, he acts as an important public face and ambassador for the project. Tawera has kept alive an intergenerational vision to encourage, motivate, and inspire rangatahi to get involved now as future project leaders - there is clear awareness that it will require generations to restore Lake Waikare. Under his leadership, over 40,000 trees have been planted around the lake with funding opportunities realised through partnerships with district and regional councils, Waikato River Authority, and ESR (Environmental Science Research). As a leader, he commits to walking their talk at a personal level while making the journey inclusive and inviting for others. He is an extremely savvy operator with good PR practices and a strong ethic that supports whanaungatanga, rangatiratanga, and manaakitanga at all levels of the organisation.

Summary

Effective place-based leadership and management requires several foundation qualities including humane orientation, charismatic/values-based behaviours, team orientated practices, participative processes, and autonomous viewpoints and perspectives. In Aotearoa-New Zealand, as leaders and project managers we tend to share the load, get others involved on an equal basis, and develop 'No.8' solutions and responses that fit individual situations. This has direct relevance when seeking to scale-up or transfer existing projects that are operating in their current contexts.

4.9 Key Insight: Changing economic models

Definition and Explanation

Aotearoa-New Zealand's society is structured around commerce. While commercial viability is a crucial element of success, its importance relative to other outcomes is changing. More producers are making business decisions that equally prioritise environmental and social outcomes (Reid et al. 2019). These decisions represent a shift in society, as we understand that we all need to operate within the bounds of environmental, social, and cultural health. As a result we have seen the emergence of '[Doughnut Economics](#)', '[triple bottom line](#)', '[circles of sustainability](#)' and '[environmental social governance](#)'. These emerging models are consistent with the other part of society in Aotearoa-New Zealand, the long-standing Māori economy. Māori commerce is a dynamic, deep-rooted, complex, and ever-evolving space, incorporating inter-generational wealth, maintenance of cultural identity and the well-being of iwi, hapū and whānau (Barr & Reid, 2014; Cram, 2014; Eketone, 2013; Reihana, Sisley, & Modlik 2007). Māori operate in a commercial world often determined by multiple cultural 'bottom lines.' Commerce and culture can intermix whereby it is not the commercialisation of culture but the culturalisation of commerce.

The shift from economic value to social and environmental values is not limited to land use and management change but also relates to in-market and value chain opportunities. New market preferences are emerging. These preferences include direct sales to consumers, the importance of food origin, product attributes, 'health and wellbeing' products (e.g., nutraceuticals) and complementary product/purchaser 'experiences (e.g., virtual, and augmented reality experiences in conjunction with products.)

Successful place-based pilots will consider multiple values and drivers when defining success and will want to deliver multiple-level product value, including environmental, social, cultural, and economic value.

Examples

Miraka Dairy, near Taupo, aims to shift farmers to a values-led approach to farm practice based on kaitiakitanga. Its approach is to build a legacy "100 farms, 100 years" focus within their farmer network. Miraka focuses its energy on sharing stories, knowledge, and experience to create wisdom across its farm supply community. Te Ara Miraka has been operating for the past five seasons and is a core aspect of its values-based business approach. Farmers are independently assessed across several farm standards across five pou – Tangata (people), Kau (animals), Taiao (environment), Taurikura (prosperity), and Miraka (milk quality). Farmers fully meeting the incentivized standards set each year are rewarded with an additional 20c/ kgMS for their production performance. Te Ara Miraka provides a win-win-win opportunity by generating on-farm performance for suppliers, premium product with outstanding environmental attributes for the processor, and product purchasing options that meet the needs of the customer.

[Leaft Foods](#) is a company based in Aotearoa-New Zealand which has the aim of producing the highest quality, sustainable plant protein concentrate made from leafy crops grown by farmers in Canterbury. They believe this will help to address environmental challenges associated with food production and

consumption. This company is hoping to capitalise on social preferences to create a business model that addresses environmental challenges while generating an economic return. While this project is still in its infancy (the company was incorporated in 2019), it is already attracting significant public interest and support for the technology development.

Summary

These examples show there are new commercial enterprises that are rethinking the way they build businesses. These examples are seeking to capitalise on new products, societal preferences, new technology and new markets to generate economic, environmental, social, and cultural benefits. Efforts are now underway to intermix benefits rather than keep them separate and distinct.

4.10 Key Insight: Interconnected solutions

Definition and Explanation

In the context of this review, Te Taiao highlights the complexity of interweaving by describing how the health and wellbeing of the natural world and our people are inextricably interconnected with the long-term viability of our businesses and our standing in the marketplace. No single solution or 'technical fix' in isolation will enhance Te Taiao, instead we will need to come together and to identify, co-design and implement interconnected solutions.

Interconnected solutions are solutions that are connected, mutually joined, or integrated (Old English Dictionary, 2010). Interconnected solutions are more likely to be successful in addressing complex challenges, compared with a single solution designed in isolation of others. For example, solutions that encourage a land use change to enhance the environment, that also capture additional financial returns, can in turn support further investment to increase the capability and capacity of the people on the land. Increasing the capacity and capability of individuals and their families, enables flow on socio-economic, cultural, and environmental benefits to local communities, regions and to Aotearoa New Zealand (Reid et al., 2019).

To enhance the vitality of Te Taiao, place-based pilots will need to:

1. Start with a holistic view of how people connect with their place.
2. Focus on identifying, co-designing, and implementing interconnected social, market, policy, and infrastructure solutions rather than single technological fixes; and
3. Demonstrate how simultaneous ecological, economic, social, and institutional changes can occur.

Collaborative and participatory processes that respect all knowledge and viewpoints are essential to enable people to come together and to develop a shared understanding of Te Taiao in place, to respect values, and to weave together different knowledge systems.

Examples

The Hart family have transitioned [Mangarara \(The Family Farm\)](#) in Hawkes Bay from a 'traditional sheep station (running approximately 3000 ewes) to a diverse and integrated farm that seeks to balance ecosystem restoration and the production of healthy, nutritious food' (Mangarara, 2021). This transition involved a change in land use (in part) including changes in stock types and grazing as well as planting and retirement initiatives. It also included the development of an eco-lodge that provides accommodation, education and sharing farm resources in a 'community model'. The Harts sell their regenerative Mangarara beef directly to the Clive Butchery (Hawkes Bay) and three Auckland butchers to 'connect people back to healthy food and farming, while providing a stable financial platform to enable continued ecosystem restoration and innovation of our regenerative farming practices' (Mangarara, 2021). Each of these interconnected solutions helps reinforce the others: additional financial return from beef supports environmental improvements on farm, which then provide marketing collateral for the beef. These interconnected solutions have enabled the success of The Family Farm.

Declining soil health is of increasing concern to New Zealand's winegrowing industry. The proposed SHOVEL Project demonstrates how diverse knowledge and experience can come together and help Marlborough wine growers improve vineyard soil health and biodiversity. This Project will weave together mātauranga Māori, grower know-how and winemaking science to help develop a shared understanding along the value chain of the management practices that can improve soil health. Improved soil health and biodiversity will increase soil organic matter, thereby potentially reducing water use, irrigation costs and synthetic inputs. Any cost reductions will contribute to increased vineyard economic viability, ensuring local jobs can be retained and, thereby, providing a positive flow-on effect to businesses that support Marlborough's wine industry. The interconnections will accelerate the pace and uptake of innovative soil management practices and contribute to long-term environmental, economic, and social benefits along the value chain.

Summary

Interconnected solutions, rather than a single 'technical fix,' are needed to enhance the vitality of Te Taiao. To achieve this, place-based pilots need to be values based, led by communities and people, and start with a holistic view of how people connect with their place. Collaboration and participation are essential to enable people to come together, respect different perspectives and interweave knowledge systems (for example, mātauranga Māori and science). Interconnected solutions are more likely to support long-term, holistic change.

4.11 Inputs: Resources including funding and information

Definition and Explanation

Successful programmes benefit from a range of inputs like resources and information. Resources, like funding, are particularly critical to carry out a research project or to allow risk-taking in land-use or management changes. Resources can also include skills and access to technology. Information, like data,

tools, models, or information derived from technology is critical to provide new understanding and new knowledge.

Typically, in the science world, funding is provided based on a project proposal which provides funding certainty and ensures resources are best utilised and lead to desired outputs and outcomes. However, co-innovation projects do not have predetermined outputs and outcomes as they are co-designed through the project in response to partner needs. Thus, a funded outputs and outcomes approach, particularly in complex interconnected systems, can be particularly stifling and can result in unsuccessful initiatives. This is especially true for projects where co-innovation practices are the enabler for success – especially for those involving mātauranga Māori. Getting the ‘right’ balance between accountability and flexibility in funding can be the difference between a project or initiative responding to relevant community needs or not.

Another fundamental input in projects is information resources like data, tools and the requested skills associated. Quantification, mapping and modelling of the land use, practices, environment, and ecosystems requires a large amount of data (observations, statistical, geospatial, etc.) to feed models which can range from simple to complex. The use of these data is unavoidable to build integrated models that can facilitate the development of new incentives or be used to understand global changes and disruptions. Data and skills needed to run existing socio-ecological models depend on the modelling approach and the related complexity (Vannier et al., in prep).

To enhance the vitality of Te Taiao, place-based pilots will need to:

- Ensure funding allows an innovation perspective, with some flexibility around predetermined outputs and outcomes.
- Have access to a wide range of technology including various geospatial data, models and provide sufficient skills to quantify te Taiao enhancement; and
- Develop integrated solutions by coupling methods to ensure mātauranga Māori and science align and innovate to ensure the sharing of knowledge is completed.

Examples

Funding in the NIWA [Irrigation Insight Project](#) has allowed co-innovation and flexibility to flourish. The project is a five-year cross industry project that aims to examine on working farms, the use of improved weather forecasting and drainage estimations for on-farm water management. The government and industry-funded project uses a collaborative and co-innovation approach to co-develop knowledge, share learnings and co-design solutions, which will accelerate the pace and uptake of innovation. The funding proposal outputs were flexible enough to enable the solutions to be co-designed leading to improved outcomes.

In the French Alps, landscape transformation occurred from rapid urbanisation and agricultural intensification around cities, to abandonment and depopulation in higher and more remote districts.⁵ Researchers engaged with stakeholders in an interactive participatory scenario planning for co-creating

⁵ EU FP7 project OPERAs FP7-ENV-2012-two-stage-308393

relevant, credible, and legitimate scenarios. Stakeholders helped researchers adapt, downscale and spatialise normative visions from the regional government, co-producing storylines of trend versus break-away futures. The method used was a combination of planning documents, stakeholder local knowledge, researcher local knowledge, maps, remote sensing data, modelling (for land use change and ecosystem services). The project was measured by a combination of 12 Ecosystem Services in three different landscape contexts (Lasseur et al., 2018; Lavorel et al., 2017; Vaissière et al., 2021; Vannier et al., 2019a, 2019b).

Summary

The availability of and flexibility in funding enables co-design and co-innovation to occur in projects involving diverse perspectives, communities, and values. Te Taiao requires a research approach that involves and accommodates the interconnection of environmental, economic, and sociological measures. Availability of spatial information, technical data and model expertise will be important to enhance place-based outcomes and to build flexible, creative, and integrated solutions that support alignment of mātauranga Māori, science, experiential knowledge and diverse community views and perspectives.

5. Stock take of Aotearoa-New Zealand initiatives to design, implement and progress land- and water-use change and value chains to improve Te Taiao

The spreadsheet created by the working group, pilot group and next-generation group provides a stock take of national and international, indigenous, and non-indigenous examples of land use change and value chain and market initiatives focusing on food and fibre production to improve Te Taiao. The focus of the examples includes land use initiatives, land management practices, catchment groups, Māori agribusiness development, community groups, product development, pilot projects, Māori land development, value chain examples, and community, iwi or hapū development.

Fifty-nine examples have been reviewed in the spreadsheet: eighteen international and forty-one national examples (including nine with an international component).

Examples are organised in a map implemented on the user-friendly Google map platform and can be consulted using the following weblink: [Place-based pilots](#). The map displays international and national examples and highlights the Aotearoa-New Zealand examples that address Te Taiao (n=27) around whenua (soil and land), wai (all freshwater bodies and their connections), āhuarangi (climate across time), and koiora (all living communities: human, plant, animal). The map also highlights where an example is Māori-led or from a Māori initiative (n=17).

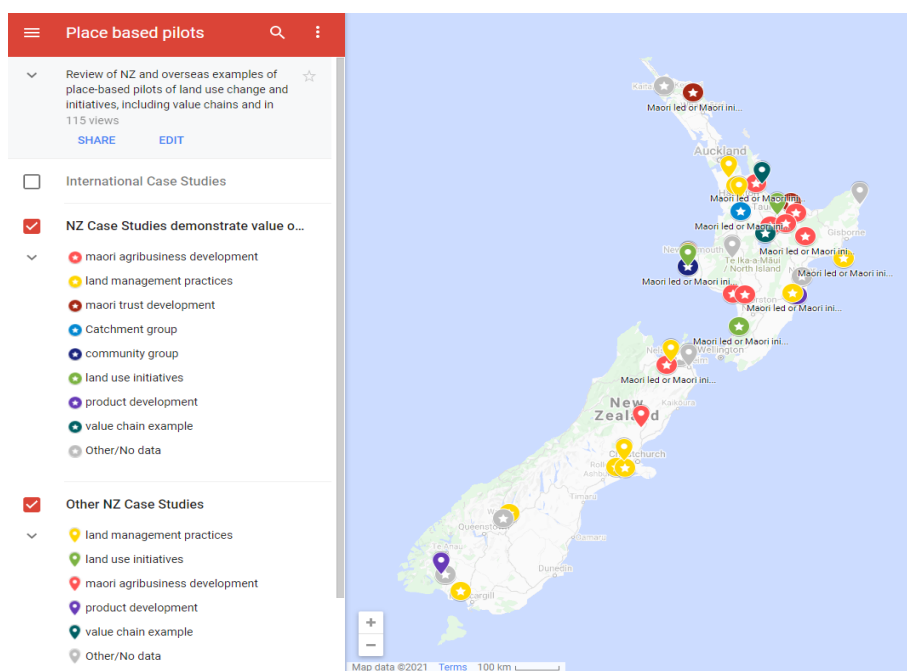


Figure 5: Place based pilots review map, focus on Aotearoa-New Zealand extent.

A review of the national examples that demonstrate enhancing the vitality of Te Taiao, and are Māori-led, are mainly located in the North Island (Waikato n=4, Bay of Plenty n=4, Wanganui n=3, Hawkes Bay n=2, Northland n=2, Taranaki n=1). Only one example was in the South Island (Marlborough n=1). Many these projects have measured environmental impacts using mātauranga Māori knowledge.

The aims of the projects covered various outcomes including re-planting, riparian restoration, lake and wetland landscape restoration, farm practice change (systems or product diversity, business/economic development, value chain creation, monitoring, and evaluation of systems, mātauranga Māori research, building farm economic resilience. The incentives for change are diverse and include:

- Employment to environmental co-benefits.
- Improvement of water quality.
- Economic/market opportunity.
- Niche product development with strong environmental attributes.
- High value product development.
- Lower farm inputs such as fertilisers.
- Integration of mātauranga Māori.
- Regenerative agriculture.

Non-Māori Aotearoa-New Zealand examples that demonstrate the enhancement of Te Taiao are mainly located in the South Island (Canterbury n=2, Southland n=2, Otago n=2, Marlborough n=1), and three are in the North Island (Hawkes Bay n=2, Waikato n=1). The incentives for change also include catchment ecosystem restoration, community environmental concerns, better economic performances, regulation compliance, or enhancing iconic landscape. The aim of those projects also included planting native vegetation, developing regenerative agriculture practices, diversifying farm production, reducing nutrient inputs, but also improving irrigation management, developing agro-ecological models, using modern technology/precision agriculture.

Some Aotearoa-New Zealand listed examples have not (yet) progressed significantly. These examples are displayed on the map as Other Aotearoa-New Zealand case studies.

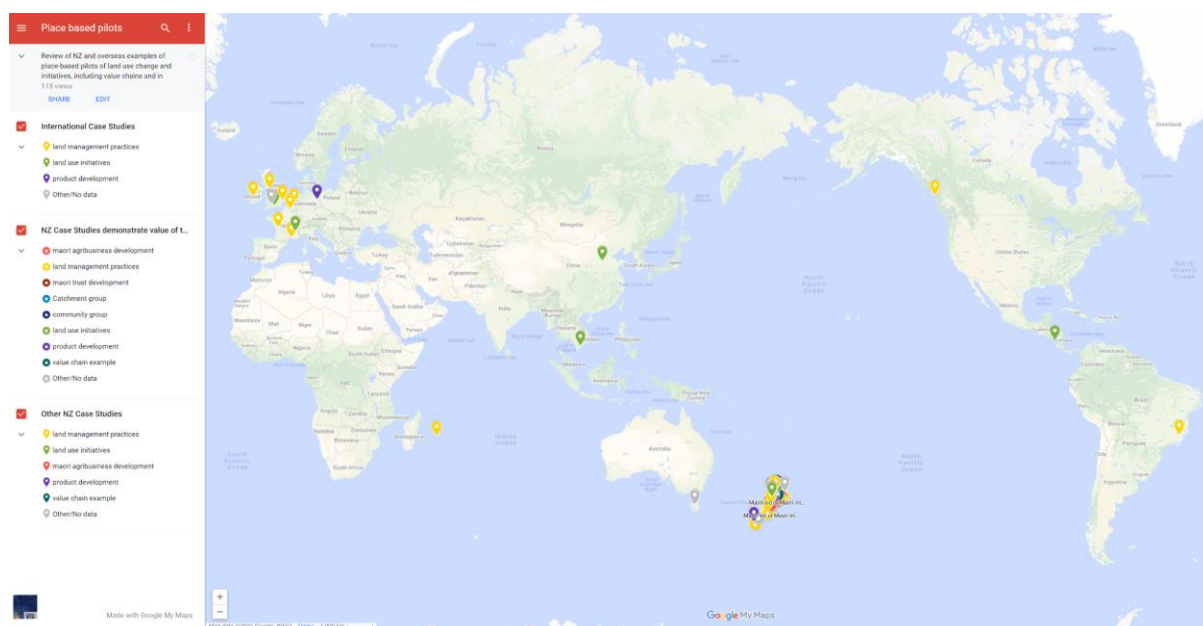


Figure 6: Place based pilots review map – extent worldwide

Review of international examples has revealed critical factors that led to a need for change, particularly due to climate change linked with food security. These included a succession of severe droughts, and climate change factors mixed with external triggering elements (pest invasion, disease, cyclone, etc.) (Nguyen Thanh et al., 2021; Bacon et al., 2017; Castro, 2016; Lei et al., 2014; van den Berg et al., 2018).

Amongst the seventeen international examples reviewed, the majority led to a change of:

- Land management practices (n=10),
- New land use initiatives (n=5),
- Product development (n=1).

The impacts of farming practices on global changes like climate change, water and soil quality, biodiversity loss, or a need for more renewable energy, are some key factors that have driven the change from conventional agricultural production to a regenerative agricultural mode (Grelet et al., 2021). In all the 17 examples reviewed, a switch to a regenerative agriculture initiative (n=13) showed improvement to Te Taiao by the:

- Increases in biodiversity and biodiversity conservation.
- Reductions in pest control.
- Development of climate adaptation strategy.
- Restoration of degraded lands.
- Improvement of water quality.
- Improved flood defence.
- Reduced nutrient loss.
- Restoration of soil.
- Cultural re-appreciation of farmers' resources, health, and family connections.

While there is a good geographical spread of Aotearoa-New Zealand examples, we acknowledge this is a snapshot of the initiatives and projects currently, and historically, underway. However, given the diversity in the Working Group it does represent a good cross section of examples.

6. A Review of Scaling

The mechanisms of successful project scaling are the focus of this section. The key insights from reviewing Aotearoa-New Zealand and overseas examples of scaling land use change and value chain initiatives contribute to the second deliverable for the Working Group (Tasks 3 and 4). In addition, specific attention is paid to Māori-led and Māori participation in land use, management, value chain and market development (Task 4).

Realising benefits beyond a single project involves simultaneous scaling up and scaling out (Wigboldus et al., 2016). *Scaling out* refers to the spreading of something within the same sphere, whereas *scaling up* refers to the creation of conducive conditions and policies for changes to operate at higher levels (Hermans et al., 2013).

Both scaling up and out are needed to achieve widespread and significant systems change and to extend the success of initiatives to other locations. While projects can be successful without explicitly considering or addressing scaling, projects that are aware of these factors and opportunities are more likely to overcome barriers to further growth and extension (Schut et al. 2020; Wigboldus et al. 2016).

In Aotearoa-New Zealand scaling activities by science institutions and agencies with or informed by Māori organisations and communities has been poor. This is reflective of wider systemic issues within Aotearoa-New Zealand's science sector⁶. Correspondingly, Māori, it seems, are more likely to scale for their own unique reasons and through their own approaches. Section 6.2 provides an indicative assessment of factors that influence successful scaling. It does, however, clearly highlight several consistent themes or insights that drive the scaling of Māori enterprise. It is not that those same drivers were not present in non-Māori initiatives – just not in all instances. This was a distinguishing feature of Māori enterprise which, at this indicative stage, warrants considerable research.

There is scope for much more research on Māori scaling activities within the food and fibre sector for three primary reasons: (1) there is little evidence of understanding, responsiveness or success by industry institutions or agencies in engaging with Māori in scaling or extension initiatives; (2) there is little current or relevant research on the drivers for successful Māori scaling or extension activities within the sector; (3) the insights gleaned from this report would indicate Māori scaling and extension activities are almost wholly aligned with the government's Taiao Ora Tangata Ora primary sector policy framework. There is much to be gained by investing further research and development into Māori scaling activities.

6.1 Key Insights for Scaling

6.1.1 Funding

Funding can be a strong enabler of successful scaling, and in particular, the speed and reach of scaling out. Many projects start with group members utilising their own resources (e.g., time and/or money),

⁶ Overseer whole-model review Assessment of the model approach, MPI Technical Paper no: 2021/12, Science Advisory Panel, Ministry for Primary Industries and the Ministry for the Environment, July 2021, p.93 at <https://www.mpi.govt.nz/dmsdocument/46360-Overseer-whole-model-review-Assessment-of-the-model-approach> (downloaded 23 Aug 2021)

and then seeking external funding and/or contributions from members to continue to grow their project. Few projects are externally funded from the outset.

Funding can influence the success of scaling through:

1. Providing recompense for those giving time and/or money to test an idea or work on a project, to enable them to continue or expand the project.
2. Demonstrating ideas or sharing knowledge.
3. Enabling a project to be expanded or replicated across more/other areas.
4. Supporting the project to access additional knowledge, skills, or infrastructure.
5. Enabling collaboration with key stakeholders and partners at institutional levels.

To enable successful scaling, funding should provide a balance between flexibility and accountability, ensuring outcomes and return on investment whilst allowing projects to adapt to changing contexts as they scale up and out (Vereijssen et al. 2017). Funding should facilitate the collaboration and partnership of the necessary skills and experience and provide a pathway to scale up projects where applicable and facilitate connections at various organisational levels.

The way funding is applied or the conditions for funding can have a significant impact on the scaling of a project, for example:

1. Funding for scaling, if integrated into the project from the start, can lead to more successful and impactful scaling as the project progresses.
2. Funding allocated specifically to scaling can ensure the activity has the desired growth impact (monitoring and reporting requirements should not be at a cost or as a trade-off to scaling).
3. Funding transparency can prevent a project being steered in a different direction through 'project-capture.'

Examples

An example where funding has accelerated the pace and magnitude of change is the work undertaken. Stu Muir spearheaded an initiative to restore the whenua and waterways associated with the Mangati Stream on his family's dairy farm in the Waikato. External funding from groups such as the Waikato River Authority and Tainui which meant that (in his words) "something I thought would take my entire lifetime was all of a sudden achievable." (The Man who restored a River, New Zealand Herald 17 January 2021).

The Red Meat Profit Partnership (RMPP) demonstrates how scaling out and up were explicitly funded to *"increase the rate of change to turn more great ideas into action, to improve the [red meat] sectors' productivity and profitability"* (Patchett, Bewsell & Grigg, 2020). The funding, provided in part by the NZ Government's Primary Growth Partnership, focused on enabling change through small group learning. The Action Network component of RMPP involved 17% of sheep and beef farmers in an Action Group. Some Māori farms and trusts were involved in an Action Group, and two Action Groups specifically focused on Māori farms. A fully funded training of rural professionals in small group facilitation methods directly supported the scaling out and up of knowledge creation and practice change.

Summary

It is important that as best as possible to have a solid platform in place before applying for funding and that there is a collective benefit rather than individual benefit i.e. targeted approach as opposed to shotgun approach. This will involve having actual skin in the game. Projects can increase their chances of gaining external funding if they demonstrate that they have kick started the project from their own resources and not been reliant on external funding right from the start. Depending on the nature and extent of the project different streams of funding can be applied in a phased approach. Additionally, a well thought out and planned approach with milestones and outcomes increases the ability to secure funds.

6.1.2 Key Insight: Understand people and place

Successful scaling requires an understanding of how people and place can influence projects. Projects and solutions are framed in a particular context, and successful projects seek to understand and respond to the context they are grounded in.

A scaled project needs to understand the context of the original project to determine how best to adapt to, then operate, at a different scale (Garb and Friedlander, 2014). If the context is not understood, the intended solutions may be unworkable or inappropriate, and the scaling may be unsuccessful. Furthermore, when scaling and moving between contexts, new circumstances will arise (e.g., the addition of new participants with differing motivation, power, knowledge, and expertise) and/or a new set of biophysical characteristics may emerge (Nicholas et al. 2020). It is critical to understand how these new circumstances and characteristics will impact on the operation of the project at a new scale.

When designing place-based pilots it is important therefore to understand the original context of the pilot as well as the similarities and differences of any new context to ensure scaling activities are successful.

Example

The name Poaka translates to “Pig” in the Māori language. The founder of Poaka, Josh Hill, armed with a wealth of research and a can-do attitude returned to his parents' 40 acres of land near Christchurch to start building up a breed of pig known as Tamworth and renowned for producing great tasting pork. Josh understood that the key to producing premium pork processed as salami, bacon, sausages, and specialised meat cuts was what you fed the animals. They feed their pigs a diet of Acorns, Sweet chestnuts, grass, barley, and peas and turn the pork into a range of tasty products. Poaka is a true “Paddock to Plate” producer. The business has leveraged off place through previously non-profitable tree crops by understanding how a high value product can be produced. They have scaled up their business through producing specialist pork products that are in demand. The scaling up has seen a base established at the local farmers market which helps as a gateway to online sales and a move into an upmarket grocery chain. As the demand for their products grows, they then intend to scale out by bringing on board more people to farm Tamworth pigs according to their standards and requirements.

Reducing herbicide use in vineyards is a key focus for New Zealand’s winegrowing industry. A recently completed two-year research project, explored the potential benefits of sub-surface irrigation (burying dripline). While reduced water use is a recognized benefit, this research explored whether sub-surface

irrigation would reduce surface weed growth, therefore reducing herbicide application and the need for under-vine cultivation. Although this technology exists, usage in vineyards is low. Some winegrowers are concerned about root intrusion into the dripper lines, burying dripline into existing vineyards and negative impacts on soil and roots, and the long-term environmental impacts of buried plastic pipe. Understanding context is key to project scaling, and to using technology differently to achieve different outcomes.

Summary

Understanding place has long been the underpinning of people and the products they produce. There are examples of this and the protection that affords e.g., Parma Ham has Protected Designation of Origin-label, the "PDO", given to regional foods by the European Union to protect them from any usurpation or imitation. Knowledge of People and Place enables a story to be woven that combines the two and will include people's understanding of the land, its soil, its climate, and knowledge that is passed down from generation to generation. The weaving of knowledge of people and place into a story can be used to promote the scaling up and out to grow a project, product, and movement.

6.1.3 Key Insight: Scaling needs changes in capacity, regulatory and financial frameworks, markets, infrastructure, and mindsets

Successful scaling requires an 'enabling context.' This context can include factors such as: regulatory, legislative, and financial frameworks; market structures; infrastructure and mindsets. While there are no single set of factors that enable project scaling, it is important to understand how a project fits within these contextual factors and determine a path to mitigate friction between factors within the project and when scaling. For example, when developing a new food product at scale, consideration should be given to food safety standards as well as logistics, supply chains, marketing, and consumers. These contextual factors are dynamic and may change during the life or scaling of a project (Schut et al. 2020). It is imperative for projects to identify and continually work within an enabling context

The wide range of contextual factors are not mutually exclusive, and the interconnections between can be complex. Contextual factors include:

1. Legislation and regulation can be an enabler and a barrier to successfully scaling initiatives at local to national levels.
2. Publicly funded research can mean there is no restriction or exclusivity available on the intellectual property developed in such projects (Turner et al. 2016).
3. Infrastructure such as a lack of processing capacity, storing, or transport facilities can limit opportunities to change land use or to produce a specific or new product.
4. Commercialising niche products can be both an enabler or barrier to successful scaling, for example, when moving niche products to mainstream or keeping niche status to command a higher price.
5. Supply chain considerations, for example quality assurance (through national and international certification and standards) and the technical ability to provide strong product traceability and evidence of provenance.

6. Mindsets and firmly held beliefs are part of a person's sense of self, or identity (Knook and Turner 2020). Community mindsets can be a major barrier to successful changes in land use and management.
7. The capability and capacity of individuals, project structure and operations. For example, moving from an informal verbal agreement ('everyone knows, we talk to each other about what we do') to formal processes ('everyone needs to train and follow standard operating process'). Individuals with specialist skills may be needed.

Successful scaling requires an 'enabling context,' which looks different for each project. Enabling is about recognising early what context is needed for success and how to achieve scaling.

Examples

[Lewis Road Creamery](#), based in Canterbury New Zealand, is a small niche producer of grass-fed and traditionally churned butter. Their butter has considerable market demand. Commercializing a niche product has enabled scaling, with Lewis Road Creamery butter now featuring in one of the world's largest organic and natural foods supermarket chains, Amazon-owned [Wholefoods](#). The butter sells for US\$6.99 (\$11) for an 8oz (236ml) pack (by weight); the most expensive grass-fed butter the retailer sells.

An example of scaling out without compromising the competitive advantage of the initial niche product is Ashgrove cheese in Tasmania. Ashgrove started back in the days when 'pasture-raised' and 'organic' were just the norm and the products produced were sold into local markets. Family-owned Ashgrove Cheese started in 1993 as a small family operation selling premium quality, traditionally styled cheese from a farm gate cheese shop. Bottling of fresh milk and cream and butter production followed. The business had to change when big players flooded the market with cheap milk and made it tough for local farmers to compete on price. Ashgrove set about gaining independence from low commodity prices by adding extra value to their milk. The business took a leap of faith and became on-farm dairy manufacturers setting up a factory and specialising in premium quality, traditionally styled cheese at the source. Their operation has rapidly scaled out and up to involve six supplier farms, factory expansion and new product lines. Over one hundred Tasmanians are now employed across their farms and factory. Products are sold in major Australian and Southeast Asian supermarkets, and the Ashgrove Dairy Door and visitor centre opened in 2021.

Summary

Scaling can be helped by an ability to look beyond the horizon be it an environmental scan, strategic foresight, or scenario planning. When doing this several factors need to be considered e.g., regulation. It is important to understand and be able to configure the interconnections between these factors such as the interconnection between supply chains and infrastructure. The enabling of scaling needs to consider contextual factors alongside the volatility, uncertainty, complexity, and ambiguity of an ever-changing environment.

6.1.4 Key Insight: Scaling requires action from farm, orchard, or business-level to country-level

Scaling up refers to the creation of conducive conditions and policies for operating at higher levels (Hermans et al., 2013), for example, integrating a newly developed local practice into regional regulations and/or national extension policy.

Scaling up requires action from individuals to communities or from local to regional or national levels. Scaling up requires a consideration of regulatory and legislative factors (for example, how local, regional, and national policies support or are a barrier to successful scaling) and understanding how other stakeholders can act to support or hinder scaling. Scaling up also extends to in-market and value chain considerations for projects to understand how to collaborate with producers, processors, distributors, marketers, and consumers at levels beyond their current individual or local levels.

Examples

The Aparima Community Environment (ACE) in Southland is six Aparima community groups. The ACE Project, supported by Thriving Southland and DairyNZ, is influencing changes in local and regional intensive winter grazing practice. In turn, evidenced changes in practice are demonstrating to the Minister the practice changes required to achieve the Aotearoa-New Zealand wide regulations for intensive winter grazing practice. In a recent move, and in response to the farming sector's commitment to practice change, the Minister has deferred the introduction of intensive winter grazing practice regulations until May 2022. In addition, ACE has direct (member) and indirect links to a Southland Region Forum, advising Environment Southland on implementation of their freshwater regional plan (in development).

Kaitahi is a food business established by Ngā Rauru Kītahi iwi in South Taranaki with initial funding from government sources. Their primary product concept was based on utilising native plant ingredients like kūmara, pūhā and kawakawa as the basis for smoothie 'bullets' or healthy flavouring which were available to consumers across Aotearoa. The business concept arose from the iwi looking for suitable land-use that would also support employment opportunities. They already had a plant nursery so extended that to grow traditional Māori food ingredients and diversify into other business opportunities. They have since won several industry awards for their innovative food products, which represents a good example of scaling up. The expansion of their product to a national market including Countdown supermarkets has presented its own problems, not least the availability of sufficient plant product for the smoothie base. Where they had limited volume of locally sourced ingredients, they have sourced the rest from other local New Zealand businesses. As one of their industry awards they have recently been granted further funding through the High Value Nutrition Science challenge to continue building the research to support product development.

Summary

Scaling up can be a push and pull process depending on the activity. At times push and pull will go hand in hand while at other times one can take precedent over the other. Dealing in a regulatory environment is often time consuming and therefore requires more push than pull. Conversely, creating market awareness of a product is more to do with creating pull than push. Whether it is push or pull or both can be dictated by the conditions and circumstances you are interacting with. Having an awareness of these

conditions and circumstances helps to determine what course of action to take whether they're conducive or not. An ability to adapt and tailor solutions to suit is a necessary skill.

6.1.5 Key Insight: Bring people on the journey - scaling involves facilitation of learning, decision-making, collective action, and negotiation

Bringing people on the journey contributes to successfully scaling projects up and out. Relationships based on respect will enable individuals and groups to meaningfully participate in projects and will also influence how projects will scale (Nicholas et al. 2020). As solutions are designed or implemented at a higher/larger scale, they also need to fit with a wider set of personal needs and contexts (Garb and Friedlander, 2014). Scaling requires respectful negotiation, collaboration, and compromise - where necessary (Beers et al. 2019). Without this, scaling becomes challenging.

Bringing people on the journey involves extension activities that build interest, familiarity, and involvement in the proposed product/project. Strong relationships with key partners at initial stages of development also helps accelerate the process of scaling. In addition, partnership relationships around shared values and conducted through respectful discussion helps facilitate both collective learning and external engagement with a project. When people understand, are engaged, and align with an initiative they are more likely to function as enablers for the project and to also become the project "champions."

Examples

Thriving Southland is a community-led group with a vision to create a prosperous Southland. Thriving understands that strength comes from working together and by involving people in the journey. The Thriving Southland team facilitated many multi-stakeholder meetings, catchment group workshops, on-farm walks, and farm tours. Among topics, they have looked at different wintering systems, discussed 'good' wintering management practices, and explored how to manage any potential environmental and animal welfare risks. The discussions about what is believed to be 'best winter grazing practice' during these events has contributed to a change in farmer thinking and understanding, and this is contributing to a change in winter grazing practice.

Formed in 2017, the Hurunui District Landcare Group (HDLG) is an independent catchment group of approximately 140 dryland sheep and beef farmers in North Canterbury. This farmer-led, farmer-driven initiative takes a collaborative approach to promoting on-farm good practice. HDLG works closely with a wide range of stakeholders to support farmers, for example, employing three on-farm advisors for one-on-one discussions, farm environment planning workshops (in conjunction with Beef + Lamb), on-farm biodiversity field days, farm forestry field days, workshops to develop winter grazing plans, seminars to manage stress and adversity and 'drought shout' community events. Along the way, the regular newsletter, Facebook posts and community events (e.g. planting days) keep the community connected, build interest and involvement and create momentum for change.

Summary

Bringing people on the journey is a challenging aspect of scaling as there will be pros and cons for doing so. Now more than ever people's awareness of the parlous state and pressure on Te Taiao is gaining momentum. Therefore, navigating the tensions around this can be a delicate process. It is important to create alignment as early as bearing in mind personal needs and contexts. This can be through painting

a big picture of how things could look in the future. The idea is to create urgency, excitement and enthusiasm around a bolder future state moving beyond the status quo while mindful of the interplay of motivations, mindsets, and agendas. Whatever path is chosen, the process will take time and wax and wane during the process of respectful negotiation, collaboration, and compromise.

6.2 Examples of Scaling in Māori land use and value chains

Throughout the review and case studies specific attention was assigned to Māori-led and Māori participation in land use, management, value chain and market development. The following four Māori-led and Māori participation case studies provide a base demonstration of both scaling up and out. The examples serve to highlight key insights for successful scaling of Māori-led initiatives. Section 6.3 then provides an analysis of these examples and draws out insights relevant to Māori-led scaling activities.

6.2.1 Ngāti Kuia Trust - kanuka processing, products & people development

Ngāti Kuia Trust's kanuka processing facility is an example of an iwi-led and iwi-run business on whenua Māori. They are dedicated to working with whānau, communities and groups alike to support their natural resources. The project revisited what was previously seen as unproductive, remote Māori land to create several new cottage industries producing high value finished kanuka products, tea, fragrant oils, and honey. While current production allows the products to be sold domestically, in scaling out several products, including kanuka tea, Ngāti Kuia has secured its first international sales with a growing overseas demand including orders from Asia. Their new facility at Titiraukawa, Pelorus Bridge, will support whānau whenua-level participation in this cottage industry. The new industry is expected to create jobs, support whānau businesses and be environmentally friendly with a zero-waste focus.⁷ The project will enable Ngāti Kuia to have greater control over their supply chain, to grow their income stream, and to channel these benefits back to iwi including the creation of jobs. Key project drivers include increasing opportunities for whānau (economically, culturally, and socially), involving and benefiting the wider community and restoring Te Taiao. Opportunities for scaling were key considerations during project inception and delivery, to scale products out to new markets and how to scale up the project by expanding along the value chain. The project itself runs off the back of a bee husbandry course started in 2017 which enabled whānau to build skills and capacity for business creation on their own land. In 2018 they won the award for Nelson's best rural honey and made their first commercial sale of honey for export in 2019.⁸

This year Ngāti Kuia signed a partnership with Marlborough Institute of Technology and a full-time Level 3 horticulture course runs locally at Titiraukawa for local whānau. The practical onsite component of the course includes planting 50,000+ trees at Titiraukawa. An automated native tree nursery will also give students an opportunity to work and develop further skills and experience. The nursery will, in turn, provide local access to native trees that are eco-sourced and propagated at Titiraukawa. The nursery will also provide kanuka plants that will support the new kanuka processing facility.

⁷ Regional Economic Development and Investment Unit, News, "Move Over Manuka" at <https://www.growregions.govt.nz/media-centre/news/move-over-manuka-kanuka-honey-funding-boost/> (downloaded 18 Aug 2021)

⁸ Ngāti Kuia: building whānau skills at <https://www.aceaotearoa.org.nz/news-and-resources/news/ng%C4%81ti-kuia-building-wh%C4%81nau-skills> (downloaded 18 Aug 2021)

This case-study demonstrates scaling up through working with local education providers, local and central government as well as moving along the value chain to include processing and marketing. Scaling out is evidenced through developing a niche product, expanding production and processing to national and international markets, increasing capability and capacity of whānau, and working with the wider community to restore the whenua and awa. This case study also demonstrates value add, with honey, oils, and tea produced from kanuka and whenua which was previously considered unproductive.

Building capacity and capability through the education, training, and employment of Ngāti Kuia whānau will continue to support the scaling out and up of this venture.

6.2.2 Tahuri Whenua

Tahuri Whenua, the national Māori vegetable growers' collective, represents Māori interests in the horticultural sector. Tahuri Whenua provides advice and information for growers (e.g., hui, wananga, production of written resources) and through ongoing research. It functions to build the capacity and capability of Māori growers to ensure their ongoing growth and development in horticulture.

Operating as an incorporated society and a charitable trust, Tahuri Whenua has a focus on developing resources to support landowner choices, especially around plant and food systems. Mātauranga Māori and tikanga are developed and aligned for each crop and its production system. Tahuri Whenua also supports whānau into market opportunities, ensuring they can earn income and pay rates on land. The collective is supported by a kaumatua rūpū with oversight to all their activities.

In recent years, the resurgence of traditional kai and activities (e.g., celebration of Matariki) is a driver for a growth in horticultural development as well as an increasing demand for local traditional kai. The introduction of horticulture to the Ahuwhenua Trophy (highlighting Māori contribution in the primary sector) will encourage further growth and attention to Māori horticulture.

Tahuri whenua are involved in a broad number of ongoing horticultural research projects involving collaborations with Māori, New Zealand and international researchers and students who have contributed to the maintenance of traditional plants and seed. The resulting workshops and hui have built the capacity and capability of local growers. Regular presentations at local, regional, national, and international level contribute to the sharing of knowledge and building of understanding about Māori horticulture. Examples include regional teacher symposiums; school visits; discussions with international visitors; and national and international conference presentations.

Scaling up is evident through developing a value chain for Māori food production; members adding input to central Government policy; and knowledge sharing at local, regional, national and international scale. Scaling out is evident from: an expanding number of growers and geographic spread across New Zealand; an increasing range of product grown; an expansion from individual small-holder systems to cooperative approaches; and supporting whānau into market opportunities. The wide range of ongoing horticultural research projects involving Māori horticulture and related to a range of crops and topics, also demonstrate scaling up and out.

Scaling however is frustrated by a reliance on seeking funding support for projects, for short term periods. As a result, the administration operates on a voluntary basis which is a significant limiting factor on the opportunities for growth and scaling.

6.2.3 MiHI

[MiHI \(Movers in Hemp Innovation\)](#) is an informal collective of Māori and some non-Māori entities that is seeking to position itself as a vertically integrated business producing hemp food, medicinal cannabis, and hemp fibre. MiHI provides a platform to support Māori to lead, create and deliver high-value hemp-derived products that incorporate Māori values (whānaungatanga, tino rangatiratanga) and culture. The collective is focused on the creation of new hemp food products unique to New Zealand with an emphasis on the plant derived health benefits.

The MiHI collective has expanded to include groups of Canadian First Nations. While the purpose of the connection with First Nations was manifold, it included two practical objectives: (1) securing a year-round supply of hemp through counter-seasonality; and (2) the ability to gain access to the North American market. Conversely, First Nations also gain counter seasonality and access to Asian markets. This collaboration also provides an opportunity to learn from each other. This learning was particularly relevant for MiHI because First Nations are well advanced in growing, processing, marketing, and sales of hemp (value chain and market).

MiHI is now looking to invest into Kanapu Hemp Food Ltd. This move will give them a short-cut ability to accelerate land use change, and to realise value chain and market opportunities as part of its collective evolution.

MiHI started scaling out by encompassing a diverse group of Māori and non-Māori businesses that included landowners, farmers, food innovators and investors across Te Ika a Maui (North Island). In addition to scaling out, MiHI has scaled up by seeking assistance from research and economic development organisations; one CRI is now a financial member. Government organisations such as TPK and NZTE are also connected into the group enabling MiHI to leverage and supplement its membership with Government support. Further scaling out has occurred because of the expansion of membership including First Nations of Canada.

6.2.4 Kanapu Hemp Food Ltd

Kanapu is a member of MiHI, one of New Zealand's largest hemp collectives. It aims to develop nutritionally beneficial hemp products while providing added value to whānau and whenua.

Kanapu have been trialing organically grown hemp seed on whānau land at Waimārama (Hawkes Bay). Hemp was originally planted as a 3 ha trial block on a mixed arable, lamb and beef finishing farm in Otane, Hawkes Bay. The 3ha increased to 10ha which saw the successful launch of KANAPU® Hemp Seed Oil. To meet increasing market demand for hemp products, hemp seed production has expanded from the original farm and scaled out to include contract growers in Hawkes Bay, from Wairoa to Dannevirke, with potential in other regions. There are now plans to extend organic hemp growing out to blocks of whenua Māori that are currently leased out with little owner involvement. These lands have been under consecutive lease for up to 30 years, for maize production, and are subject to regular chemical fertilisers and pesticides. It is expected that hemp seed production will provide increased returns for whānau, better outcomes for the land and employment for whānau. Kanapu have their own whānau employment programme with the possibility of employment and work experience exchanges with Canadian First Nations during their hemp harvesting season.

Kanapu is now a vertically integrated hemp food business, looking to produce high value nutritional hemp food products. All activities are underpinned by research and development to inform new product development. Kanapu's current products include Hemp Seed Oil and Hemp Seed Flakes, and they are about to launch a Hemp Seed Milk onto the New Zealand market and into Melbourne, Victoria. These high-value hemp-derived products will not only increase the growth of the hemp industry in New Zealand but also the value of New Zealand as a food exporter.

There have been combinations of scaling out and up mechanisms that have contributed to the growth of Kanapu. Scaling out is evident from the expanding area and number of hemp seed growers, and the sharing of knowledge around hemp production; underpinned by increasing benefits and opportunities for whānau and whenua. Scaling out through their First Nations Canada relationships has led to potential supply and market opportunities that may lead to further business growth and scaling up. Scaling by creating a value chain for hemp products has driven further scaling out opportunities including access into a wider collective of hemp growers through MiHI's networks and investment into the business.

6.3 A Review of Scaling – Māori land use and value chains

From all the projects introduced herein, we can identify consistent themes or insights that drive the scaling of Māori enterprise. The motivation for the scaling or extension of projects for Māori is significantly different from non-Māori. Of all the projects reviewed, we were able to identify consistent themes or insights that drive the scaling of Māori enterprise. Successful scaling, in a Māori context, seems to involve or require each of these insights to be present (or have the potential to be realised). They are co-requisites for both motivation and success with Māori enterprises.

6.3.1 Key Insight: financial success as a means not an end

In all cases reviewed, Māori place-based initiatives were always looking to achieve a series of enduring outcomes. These outcomes were invariably related to whānau, whānau land, local community, local resources, and positive environmental change. Employment, skills development, and educational success were often additional intentional outcomes. These objectives were more central than financial success, although financial performance was well recognised as a fundamental enabler.

6.3.2 Key Insight: developing and processing natural resources through natural production

Most projects and ideas were centred on the natural development or restoration of a natural resource. The initial stocktake of projects did not identify any Māori projects looking to introduce artificial or synthetic materials into their production or processing. Most projects are dedicated to reducing artificial inputs where relevant (as distinct from the primary product e.g., hemp or cattle) and growing product in as natural an environment as possible (e.g. GE-free, using natural/organic fertiliser).

6.3.3 Key Insight: Work with what is already there

All the Māori projects started with a resource that was already in place. Most commonly this focused on two primary resources seen as under-utilised - local land and local people. In all other cases, the primary resource was a natural resource – a lake, land, waterway, or location – that had suffered degradation and

required focused local collective support to revitalise it. In some cases, the initial motivation project then cascaded into additional collateral opportunities in training, education, tourism, or business growth which supported further scaling up and scaling out. In all cases the project started with a focus on an untapped or significant resource already resident in the locality.

6.3.4 Key Insight: Tino rangatiratanga

Control over the project was a fundamental element in all the Māori projects reviewed. Tino rangatiratanga is a primary tenet of any Māori-driven activity. It is not something that helps/hinders; it is something that drives outcomes. In some cases, this was over an area of cultural importance; the desire for control and protection by the kaitiaki and mana whenua is self-explanatory. In other cases, however, the desire for control and protection over a project revolved around either a need to:

- (a) remain true to the kaupapa (vision and underpinning philosophy) of the project.
- (b) ensure benefits were retained or recycled back to the communities most directly involved or affected.
- (c) maintain their own kaitiaki principles and taiao prerogatives.
- (d) revitalise, protect, develop, and control the use of their own local mātauranga.
- (e) revitalise, protect, develop, and control the use of their own tāonga species.
- (f) build autonomy, self-assertion, and collective identity.
- (g) respond to past negative economic, cultural, and social experiences visited upon Māori communities such as colonisation, assimilation, and marginalisation.
- (h) meet their own immediate needs first as a priority for the community.
- (i) maintain a focus on the past, present and future needs of the community (including the environment).
- (j) maintain the integrity of the values chain in producing and providing their product.
- (k) protect and preserve the nature and character of the community in its widest inter-connected sense.
- (l) all or a combination of the above.

Tino rangatiratanga has been referred to as one of the foundations of the te Ao Mārama - Māori worldview.⁹ Today, in te Ao Hurihuri, for all the reasons stated above, Māori holding tino rangatiratanga over locally based initiatives remains a foundational element.

⁹ Pers Comm – Rev Māori Marsden to Te Ahukaramu Charles Royal, cited in M Hemi, Tino Rangatiratanga: Assessing the Resource Management Act, M App Sci Thesis, Lincoln University, 1995, p.3

6.3.5 Key Insight: Māori build values chains

For any scaling achievement of Māori initiatives, a common feature is the use of a kaupapa-based approach. Kaupapa (or vision and underpinning philosophy) acts as a catalyst that weaves the important dimensions of the project together as a whole, from inception to extension. Māori initiatives operate by a set of values that sets them apart from others' approaches. The Māori initiatives reviewed each included aspects of a tikanga that considered socially orientated goals, and included values such as unity (kotahitanga), kinship (whanaungatanga), care and giving (manaakitanga), and guardianship (kaitiakitanga).¹⁰ As such the values which underpin an initiative are positioned at least as centrally as the value of the initiative or product itself. Key project drivers include increasing opportunities for whānau (economically, culturally, and socially), involving and benefiting the wider community and restoring Te Taiao.

Māori provide their own unique selling proposition through products with a sound cultural values-base. Values-based product attributes are an emerging marketplace opportunity.¹¹

6.3.6 Key Insight: Education and Employment

A consistent driver behind Māori enterprise is the desire to build whānau skills and capacity at a local level and potentially national levels through scaling out. This may include formal training and qualifications or the acquisition of work-related skills and experiences (including overseas placements and connections). Building a local skill-base is linked directly to building local employment either by employing skilled/trained people within the project itself or as an opportunity for external employment for whānau members. Building an educated, trained, and experienced skill-base amongst whānau also enables the scaling out of local ventures without the need to import skills from 'outside.'

6.3.7 Key Insight: Mātauranga

Mātauranga informs Māori enterprise. With the resurgence of Māori culture and connection, particularly around kai and kainga, there is a corresponding growth in understanding, researching, developing, and re-developing local tikanga and mātauranga. Whether it be the preservation of traditional fish stocks, plants or seeds, knowledge of certain kai, or knowledge and protection of a certain place, local mātauranga sits at the heart of these activities. In some instances, modern technology and science has been used to support an initiative. But in all instances, that knowledge (be it traditional or contemporary) has been fashioned by local Māori to reflect and suit local Māori values, priorities, and viewpoints. Local mātauranga is key to adapting and developing traditional or contemporary knowledge within a local context. This needs to be understood- for scaling up or out to be achieved in a Māori context.

¹⁰ Māori Culture and Values in Business, Social Sciences - Business Studies - Māori Business, Te Kete Ipurangi, Ministry of Education at <https://seniorsecondary.tki.org.nz/Social-sciences/Business-studies/Maori-business/Culture-and-values> (downloaded 19 Aug 20210)

¹¹ Pers Comm – to M Hemi from Hamish Gow, Professorial Chair in Global Value Chains and Trade, Lincoln University, 23 April 2021, for examples think [TOMS Shoes](#), [Whole Foods Market](#), [Kashi](#), [Patagonia](#),

6.3.8 Key Insight: Whenua

The suitable use of Māori land is another core theme behind Māori initiatives and is often the impetus for change. In the projects reviewed, land utilisation and development enable people and community development through employment, education, economic growth, and social interaction. Scaling that does not serve the interests of the local land (in terms of utility and sustainability) will always lack a certain relevance or resonance for Māori landowners. Environmental sustainability or preservation in the absence of employment, education, economic, and social development is not an approach identified in the review of the Māori-driven projects.

6.3.9 Key Insight: Funding & Resources

Most of the projects, if not all, began on a voluntary basis and operated as such for several years before attracting any outside support or investment. Some projects are self-funded while others continue to rely heavily on voluntary workers and support. Short-term and one-off funding responses to long-term projects result in a constant search for funding, constant project uncertainties, and a poor use of people resources. This is a significant limiting factor on the opportunities for growth and scaling of Māori-driven projects.

Research into the relative success and eligibility of Māori-driven projects to attract effective and relevant funding and resources could provide further detail and an important historical/social context to this insight.

6.3.10 Summary

The examples and insights given in the above sections show that a large base of information accompanied by action-oriented activities is accumulating. These activities are happening just by doing and applying inherent and intrinsic knowledge. They are grounded in a kaupapa Māori way of doing and supported through application and revival of tradition within a contemporary context (blending of Mātauranga Māori and Te Ao Māori). The environment within which this occurs is based on whakapapa and whenua links whereby time is spent building relationships rather than transactions. The outlook is on benefit for the whole be it whānau, hapū and iwi rather than the individual. All of this is done with an eye on future generations therefore it is not time bound. What the nine insights provide from this section is the ability to build upon a kaupapa Māori way of land use into new and unique value chain and market approaches that are centred around Te Taiao-tangata and whenua. The insights also raise ideas for deeper research on Mātauranga Māori centred Taiao-Tangata-Whenua business models i.e., a Māori approach to a way of doing.

7. Evaluation Process and Criteria for Selection of Place-based Pilots for the anticipated research programmes

This section focuses on the development of the selection criteria and outlines the evaluation process used to filter and identify the potential pilot programs.

The selection criteria and evaluation process are designed to specifically give effect to Te Taiao, Te Ao Māori, and Mātauranga Māori. The weighting and evaluation filters were arranged in an order that reflects the relative importance and relatedness of the insights identified in Section 4 and illustrated previously by Figure 3.

We placed Te Tiriti o Waitangi at the heart of our assessment process which enabled us to purposely consider the relationship and inter-relationships of values, knowledge, and worldviews between tangata whenua and tangata tiriti.

The inclusion of Māori agribusiness and land management case studies was identified as a key priority for the Group.

During discussions on the selection criteria, the potential for a multi-layered approach to the pilots was identified. Potential pilots could sit in one of three categories:

1. **Conceptual:** technically feasible, with high potential for positive impact on the environment requiring moderate levels of support and/or funding to explore the concept further e.g. Ngāti Makino's Waitahanui project.
2. **Emerging:** Start up groups/companies which have secured buy-in from local market/industry requiring medium levels of support and/or funding to test and build exposure to national market opportunities e.g. [Poaka heritage bred pork](#).
3. **Established:** Companies/groups have mature projects and have identified or commenced the scaling process that require significant levels of support and/or funding to break into national and international product opportunities, leadership, or influencer situations e.g. Miraka.

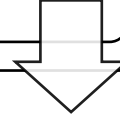
The use of these three categories enables the programme to support a broader and more diverse range of pilots (i.e. fund a number of small-to-medium sized projects) whilst retaining the capacity to focus significant attention, support and resource to a more limited number of pilots(1 or 2) that are the key 'show-cases' for demonstrating the value and success of the programme.

7.1 Evaluation Process

To define and determine the pilots and locations, we adopted a three-stage MCA (multi-criteria analysis) assessment of projects that are potential pilots.

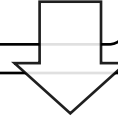
1. Assess Long 1. List

Assessment Group agrees Long List of potential pilots and confirms MCA Design with wider Working Group



2. Confirm Short List

*Assessment Group assessment against MCA
Working Group feedback on recommendations to Programme Co-leaders*



3. Confirm Proposed Pilot Programmes

Short list assessed and pilots confirmed by Programme Co-leaders.

7.2 Heart criteria

As discussed previously, the heart enables us to purposely consider the relationship and inter-relationships of values, knowledge, and worldviews between tangata whenua and tangata tiriti established by Te Tiriti o Waitangi. Section 4.1 talks about the importance of this element in more detail.

Te Tiriti is the meeting point between tangata whenua and tangata tiriti. That meeting point brings with it similar but different views and perspectives on values/tikanga, taiao/environment, whanaungatanga and respecting all knowledges.

The MCA assessment criteria are focused on identifying a clear and specific recognition of these values, knowledge, and worldviews.

Objective: that projects demonstrate Te Taiao as the foundation for values-based decision-making and projects equally reflect tangata whenua and tangata tiriti views and perspectives.

MCA Assessment – heart criteria. The project can demonstrate:

1. Benefits to Te Taiao are based on sound principles and are consistent with the programme brief i.e. (the creation of high-value/high-values products, the use of healthy raw ingredients grown in ways that enhance Te Taiao, alignment with market opportunities for high-value/high-values products; integrated research to support the transition to new options across the food and fibre sector; and the creation of benefits across value chains);
2. Consistency with the programme's Tiriti principles including partnership, reciprocity, rangatiratanga, shared decision-making, active protection and ōritetanga.
3. A balanced use of mātauranga Māori, science, and local practitioner experiential knowledge.
4. Clearly articulated values and tikanga as foundations to operations.
5. A direct positive contribution to the biophysical environment (including people).
6. Direct positive contributions to Te Taiao.
7. An interwoven approach to multiple stakeholders, viewpoints, perceptions, practices and interests.
8. Community-based problem solving and the building of collective responses and solutions (common goals and collective wisdom).

7.3 Mana Motuhake criteria

Tangata whenua are one half of the Treaty relationship. Their place and relationship to this land is described by whakapapa. Their authority and status in relation to natural resources is prescribed by mana whenua and mana moana. Their successful relationships and connections are defined by kotahitanga.

Mana motuhake refers to the ability to remain part of a wider interdependent relationship while maintaining a clear and distinct identity, independence, authority, and autonomy.

Objective: that projects demonstrate mana motuhake and tangata whenua exercise clear and distinct identity and independence within the project. That tangata whenua are afforded the concomitant resources and positions to act with their own authority and autonomy within the project.

MCA Assessment – mana motuhake criteria. The project can demonstrate:

1. Participation of tangata whenua.
2. Leadership, influence, and decision-making within the operations arises from a core Māori-based position or structure.
3. Recognition and resourcing of tangata whenua.
4. The mana whenua and mana moana of tangata whenua.
5. Māori world views, values, and perspectives (inter alia) within the project.
6. A growing unity of purpose, understanding, complementarity and self-affirmation within and across Māori and non-Māori participants (or the potential for this).

7.4 Relationships and Connections criteria

Tangata tiriti are the other half of the Treaty relationship. Their connection to people, place and community is one way to describe the nature of their relationship with Te Taiao. Aotearoa-New Zealand's colonial history has meant that Tangata Tiriti have developed a sense of place and a relationship with the land. Colonial enterprise required people to create homes through individual leadership and to build settlements and industry through community leadership. Aotearoa-New Zealand's food and fibre industry was built on the pioneering endeavour of people and communities working and collaborating to create their homes, their sense of place and their future opportunities.

Objective: that projects demonstrate a collaborative community spirit, values local knowledge and contribution, and pursues change(s) that meets the needs equally of people and place.

MCA Assessment – relationships and connections criteria. The project can demonstrate:

1. Participation by local communities.
2. People and community lead the project - leadership, influence, and decision-making.
3. A collaborative approach to development and cooperation.
4. Support and encouragement for participation in the project's operations.
5. A unity of purpose, understanding, and diversity within and across participants (or the potential for this).
6. Ideology or values drivers that are shared, inclusive or engaging and support turning differing perspectives and experiences into concerted action/responses.

7.5 Rangatiratanga Mana Whakahaere criteria

Whairawa refers to the pursuit of resources, goods, wealth, or bounty. In the context of Te Taiao this requires leadership, organisation, and direction consistent with the concepts of manaakitanga, kaitiakitanga and mauri-ora. Manaakitanga relates to uplifting the status or recognising the inherent dignity of all aspects of Te Taiao. Kaitiakitanga, as previously discussed, is one of the interconnections that exist between tangata whenua and Te Taiao. Kaitiakitanga operates on the basis that nature and human existence are inextricably bound – a healthy vibrant people pre-supposes a healthy and vibrant

taiao. Mauri-ora refers to living vitality; the creative energy that gave birth to the Universe and sustains the 'flowing and growing' cycles of Te Taiao.

MCA Assessment – rangatiratanga mana whakahaere criteria. The project can demonstrate:

1. Leadership and decision-making processes that derive from mātauranga Māori or korero tuku iho knowledge.
2. Support and application of Māori Te Taiao prerogatives and perspectives including manaakitanga, kaitiakitanga, and mauri ora.
3. The achievement of resources, goods, wealth, or bounty that arise as a part of a Te Taiao framework.
4. Structures and processes that support partnership, reciprocity, rangatiratanga, shared decision-making, active protection and ōritetanga.

7.6 Leadership and Management criteria

Sustainable business seeks to prioritise equally commercial, environmental, and social outcomes (Reid et al. 2019). Society is increasingly aware that we all need to operate within the bounds of environmental, social, and cultural health.

Changing economic models such as '[Doughnut Economics](#)', '[triple bottom line](#)', '[circles of sustainability](#)' and '[environmental social governance](#)' have aided in the development of sustainable business practice. To support these new models, projects need funding that allow for innovation and flexibility as well as technology, information and data, and sufficient skills to develop and deliver project outcomes.

Te Taiao highlights the complexity of the health and wellbeing of the natural world.

No single solution or 'technical fix' in isolation will enhance Te Taiao, instead we need to identify, co-design and implement interconnected solutions.

MCA Assessment – leadership and management criteria. The project can demonstrate:

1. A cause beyond just the linear problem + fix = solution equation, to reach into the heart of the matter – people, place, culture & identity.
2. A response to complex issues with diverse and inter-connected strategies.
3. Integrated solutions, by coupling methods, co-creating and co-evolving approaches, and connecting perspectives, knowledge, and expertise.
4. Funding eligibility.
5. A track-record of performance (or a high potential for success/delivery).
6. Skills, experience, and ability (or a high potential for development) to accelerate transition projects and proof of concept opportunities.
7. Core organisational structures and functional relationships.
8. Initiatives are aligned with project objectives, capability, and resource and funding inputs.
9. Change initiatives that are aligned with the land/water resource and its related communities.
10. Collective support, involvement, and implementation (tangata whenua, Government, industry, NGOs, and community)
11. Relevance, applicability, and adaptability to meet Te Taiao and OLW objectives.

Scoring matrix

Rating	Score
Strong Significantly exceeds all the criteria with evidence of potential additional benefits.	90-100
Sound Satisfies criteria and identifies some areas of potential additional benefits.	70-89
Limited Meets criteria but minimal additional benefits.	50-69
Unable to assess Some merit in the pilot but lacks alignment with criteria.	0-49

8. Confirming Proposed Pilots

8.1 Drivers Impacting Place-based Pilot Locations

The incentives/drivers for change highlighted in the examples spreadsheet clearly indicates that the key incentive behind the projects has been the environmental impacts caused by agriculture. The weaving of Te Ao Māori with science and agricultural practices supports the engagement, development, and connection of Iwi with Government agencies responsible for the development of environmental regulatory and policy frameworks. It is reinforced again that these connections must be underpinned by the partnership principles of Te Tiriti o Waitangi otherwise buy-in, collaboration and momentum will be slow.

Tangata whenua have direct responsibilities as kaitiaki and the interpretation of these can vary between rohe with the common thread being the inextricably intertwined connection between whakapapa and the whenua. The key is to combine and integrate the key drivers for change and align these across the board. The agricultural industry has many changes ahead and pilots that are chosen need to meet the restrictions imposed not just from the national government but at regional level too.

The Resource Management Act (RMA) is legislation, administered by Regional Councils, which focuses on the sustainable management of Aotearoa-New Zealand's natural and physical resources and highlights "matters of national importance" though it does not mandate standards thus leaving the interpretation of the RMA to local authority. The introduction of National Environmental policy (NES) and National Policy Statements (NPS) means continuity across the board is becoming more standard though until these are woven into the RMA, limitations on pilots in different areas throughout Aotearoa need to be considered when assessing the "scalability" of a project.

Given that, the Kaupapa of the pilots remains the same, a balance needs to be struck between the economic need to increase on-farm productivity and profitability against the expectations of kaitiakitanga of the system in which we operate. A strong focus on Sustainable Land Management with an inter-generational focus now offers up the opportunity to shift the focus away from the unilateral approach of the agricultural sector of yesteryear, shifting towards a cohesive working relationship that supports Māori owned entities across various rohe to incorporate Mātauranga Māori and Te Ao Māori into agricultural practices with a value added transformation thus adding to the economic success of the industry as a whole but more importantly aids in the ability to meet the needs of the economic success of Iwi, Hapū and whānau. Taiao Ora, Tangata Ora.

Over the last 12 months we have seen the agricultural industry faced with a series of diverse global challenges, from Covid-19 and the uncertainties in international trade brought on by worldwide lockdowns; the impacts of climate change on production and global patterns of food consumption and consumer groups focusing more on environmental impacts.

Regardless of location of the pilots, recognition of the key drivers for change need to continue to be front and centre. The pilots ability to be multifaceted in relation to meeting the environmental, economic and socio-economic success factors with high level of regard given to Māori knowledge of Te Taiao, to ngā tupuna for passing on of their knowledge and to the historical and spiritual connections which link tangata whenua with resources and finally to the current commitments and contributions of kaitiaki.

8.2 Engagement Process with Place-based Pilots

Kanohi ki te kanohi. It is imperative to understand that relationships lay at the heart of all successful engagement processes. The process of engagement is the ability of the working group to share their Kaupapa, give an understanding of what our “goal” and “aspirations” are and how this project can tautoko the shortlisted projects to move their enterprises forward.

Kaupapa in this context means the purpose and proposal intended for the engagement and how as the project develops the Kaupapa could move across sectors - cultural, environmental, social, and economic.

“Introduction” and the importance of this concept is one that is often overlooked, this is not just a Te ao Māori concept, it is one of general relationship building, it is about giving respect and mana to each other and building trust.

Inevitably as the projects will be located at differing locations through Aotearoa, determining the geographical relevance of the projects and how the working groups Kaupapa aligns with the interested parties will enable the building and maintaining of strong relationships.

For Tangata whenua, the process of genuine engagement is crucial and ensures that their engagement is one of valued and genuine nature, thus ensuring that misinterpretation of the engagement process is not viewed as being tokenistic. Acknowledgement should be given to:

- Rangatiratanga and status as Treaty partners
- mātauranga Māori and its key role in solving both policy and practical problems
- the fact that Tangata whenua have the resources and capability to contribute; and
- an acknowledgement that some issues affect Māori disproportionately and are therefore better placed to develop the solutions.

Recognising this, a communication and engagement strategy, Tūhono Mauri Ora, has been prepared by Renee Kahukura Iosefa. Tūhono Mauri Ora *uses the comparison of the ritual of engagement that takes place whenever Māori gather together be it on the marae or at hui through seven pillars of communication and engagement within Te Ao Māori:*

- KARAKIA -Health and Safety - Ensuring a safe environment for the coming together of people for a specific purpose.
- KARANGA – Call to action - Gathering of people with required skills and expertise to identify, research, investigate, analyse, and select case study examples of Mātauranga Māori and Science.
- WHAIKORERO – Connection - Formal discussions, select, validate, review, package, and present findings, reinforce the message.
- WAIATA – Complement - Opportunity to showcase Mātauranga Māori and science inspired case study examples “the drivers for change.” Sharing Māori Agriculture food and fibre stories that educate, motivate, and inspire.
- KOHA – Exchange - The acknowledgement and recognition of the beneficial value of Mātauranga Māori and science. The exchange of knowledge and information that is protected.

- HONGI – Engage - The connection and partnership have been made. The pathway has been laid for further engagements and development to take place.
- KAI – Sustenance - Strengthen relationships, make information accessible and simple to digest. Create opportunities for “the drivers of change” to access the tools and resources available.

9. Synthesis and Next Steps

9.1 Synthesis

When the Working Group gathered in Wellington in August, they drew on the report's insights to synthesise these and discuss a vision for the future. Sense-making and change pathway processes were used to synthesise the insights along with real world examples of businesses and communities that the Working Group, Pilot and Next Generation Group members were aware of. This began to paint a picture of what a future Aotearoa-New Zealand could look and feel like, and what would be done differently in three generations' time if the insights in the report are enacted. This synthesis draws from the notes taken at that hui.

The Working Group identified, reviewed, analysed, and synthesised a rich variety of examples of activities and groups. People, place, and their interrelationship underpinned all examples. This is a recurring theme throughout this document. As a member of the Working Group described it, "We need to improve *how* we work together - the *why* is already there." The insights from the examples provided a rich picture of what it meant for people to come together in place, participate and collaborate to enhance the vitality of Te Taiao.

The relative importance and relatedness of the insights identified in Section 4 are represented visually as Taiao Manawa Ora (Figure 3). The pātiki (diamond) illustrates the heart insights of the report, while the four niho-taniwha (triangles) in each corner represent the winged insights. The structure portrays the importance of the heart of an initiative (without which a project will not get far) as well as the role of the project's wings, (without which the project will struggle to get off the ground). There is a clear prioritisation and focus on the heart insights. This is underpinned by genuine partnership that respects different knowledges and worldviews, to support a shift in values and mindset that recognises Te Taiao as a living entity and prosperity and wellbeing in a wider sense.

The insights in this report illustrate the threads of how we could work together to achieve deep-rooted change to realise this vision for a thriving Te Taiao. It will be in applying these threads that the pilots will provide a living model of genuine partnership in the sector. The foundations of this approach must be in Te Tiriti o Waitangi partnership, tangata whenua and tangata tiriti perspectives, and bringing people together to appreciate the importance of Te Taiao.

The illustration also strives to point out the importance of the wings to provide balance, support, and forward direction.

9.2 Next steps: From insights to programme co-design

The insights in this report highlight that the vitality of Te Taiao is intrinsically linked to people and place. Building a deep relationship first is critical; this is relational not transactional. It involves listening and hearing. Therefore, the success of the pilots and the programme begins with the very first engagement. This is recognised in the programme communication and engagement strategy, Tūhono Mauri Ora. Engagement with potential pilots must be kanohi ki te kanohi. It is imperative to understand that relationships lay at the heart of all successful engagement processes. Recognising this, a communication and engagement strategy, Tūhono Mauri Ora, has been prepared founded in seven pillars of communication and engagement within Te Ao Māori based on the formal processes that take place on the marae.

The selection criteria, and evaluation and engagement processes with the potential pilots are designed to specifically give effect to Te Taiao, Te Ao Māori, and Mātauranga Māori. This begins with Te Tiriti o Waitangi at the heart to purposely consider the inter-relationships of values, knowledge, and worldviews between tangata whenua and tangata tiriti.

Potential pilots could sit in:

1. **Conceptual:** Technically feasible, with high potential for positive impact and requiring moderate levels of support.
2. **Emerging:** Start up groups/companies that have secured buy-in from local market/industry requiring medium levels of support to test and build exposure to national markets.
3. **Established:** Companies/groups have mature projects and have identified or commenced the scaling process that require significant levels of support to break into national and international product opportunities, leadership, or influencer situations.

Selection of a long list of potential pilots should begin with the heart criteria (Figure 3) i.e. pilots that demonstrate Te Taiao as the foundation for values-based decision-making and projects equally reflect tangata whenua and tangata tiriti views and perspectives.

From this long list, pilots should be selected based on demonstrating:

1. Mana Motuhake – tangata whenua exercise clear and distinct identity and independence within the pilot.
2. Relationships and Connections – a collaborative community spirit, values local knowledge and contribution, and pursues change that meets the needs equally of people and place.
3. Rangatiratanga Mana Whakahaere – leadership, organisation, and direction consistent with the concepts of manaakitanga, kaitiakitanga and mauri-ora
4. Leadership and Management criteria – highlights the complexity of the health and wellbeing of the natural world by identifying, resourcing, co-designing, and implementing interconnected solutions.

Regardless of the location of the pilots, recognition of the key drivers for change need to continue to be front and centre. The pilots must therefore be multifaceted in relation to meeting the environmental, economic, and socio-economic success factors. With each of the successful pilots being multifaceted and grounded in collective knowledge of place, our selection process needs to be comfortable with projects where the endpoint is not fully defined and there is some ambiguity in the design.

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Appendices

Working Group Membership

The Working Group membership comprises a mix of Māori and non-Māori business and community members, communicators, rural professionals and researchers, covering a diverse range of skills and experience. There is a map available [here](#) showing where we are from.

Working Group – responsible for the completion of the Place-Based Pilots Programme Key Deliverables.

Renee Kahukura Iosefa	Māori Media & Communication Specialist
<p>Ko Renee Kahukura Iosefa toku ingoa, he uri no Ngati Kahungunu, Rongomaiwahine, Waikato Tainui, Te Atiawa me Ngati Rarua. I have three tamariki, Kahukura, Aulelei and Mirena, I'm married to Walker Iosefa he uri no Hamoa. Our Whānau live in Motueka in Te Waipounamu we recently relocated home after living in Samoa for the past three years where I was the News & Current Affairs Manager for TV1 Samoa Broadcasting Corporation. As a language ambassador for my whānau, hapū and Iwi I dedicated over 10 years to the vision and legacy of Māori Television as a News & Current Affairs journalist. It was there I had the opportunity to master my skills in storytelling. I'm an award-winning Māori journalist, news producer. My work has been recognised here in Aotearoa across the South Pacific and amongst indigenous communities throughout the world. My expertise in media, communications and public relations has opened new pathways to diversify and contribute to development projects that directly benefit whānau, hapū and iwi Māori and Aotearoa as a whole. Whai Oranga Mauri Ora</p>	
Murray Hemi	Miraka
<p>I graduated with an M. App. Sci (Hons) in Natural Resource Management in 1997 and have worked in the Māori environmental sector for most of my career. I spent five years as General Manager of Māori Strategy at GNS Science before moving into research studying the interface and innovative relationships between Western Science and mātauranga Māori through Waikato University. This project enhanced my knowledge the foundations of mātauranga Māori and my experience of the dialogue across cultural paradigms.</p> <p>Until recently I was Kaitiaki o te Ara Miraka (General Manager - Environmental Leadership) for the Miraka dairy company and Principle Advisor in the Whenua Advisory Service team for Te Puni Kokiri (TPK). I have developed a deep philosophical understanding of mātauranga Māori and experience in the relevance and application of mātauranga Māori in contemporary contexts.</p> <p>Culturally, I am committed to the development and extension of mātauranga Māori in contemporary contexts – particularly in the context of social, environmental, and political</p>	

cohesion. This programme gives me an opportunity to meet a range of topic experts to engage and discuss the concept of Taiao Ora Tangata Ora with aligned critical thinkers.

Piripi Perry-Smith

Agri Magic

He mokopuna ahau no Ngāti Kurī, Te Aupōuri, Te Rārawa, Ngāti Kahu me Ngāi Takoto hoki. Ko Māmari te waka, Ko Manukau te marae, Ko Whakamahāratanga te wharenuī.

I have a BSc with a double major in Ecology and Environmental Management & Biotechnology and a Graduate diploma in Animal Science. I currently work as a Farm Environmental consultant in Otautahi, prior to this I worked for Ngai Tahu Farming for 6 years in an operational capacity which presented an opportunity to assist in the develop of a sustainable farming future for an iwi.

The working group provides the opportunity to work with a variety of like-minded professionals to translate 'theory' into 'action' in a way that makes a fundamental contribution to enhancing the vitality of Te Taiao.

One of the biggest gaps in the Ag-sector is the understanding and definition of "cultural success," developing these will allow for changes in mindset and the extension of time frames in production systems allowing for on-the-ground implementation. This will aid in developing a synergy of cultural, environmental, and human outcomes that resonates with the primary sector and society.

Toitu te marae o Tane, toitu te marae o Tangaroa, toitu te iwi.

Dayle Hunia

Kōtuku Systems

I am a certified Environmental Commissioner with a Bachelor's degree in Applied Science, Post Grad diplomas in Business Administration, and Management Studies, and a Master's in Business Administration.

I work as an environment and economic development advisor for iwi and Māori landowners and provide technical advice on national policy issues. I serve on the Board of the Environmental Protection Authority, Environmental Defence Society, and the Bay of Plenty Conservation Board.

I enjoy working with others to design and inform land use alternatives that are more resilient, healthy, and prosperous. I bring a range of perspectives to my work and have a proven track record of implementing positive change across a range of commercial and not-for-profit entities. My approach is underpinned by tikanga Māori and kaupapa Māori approaches.

Heather Collins

Heather Collins Consulting

My passion is to bring individuals and groups together and create space for change. A safe space to: think; understand others' perspectives; talk about future challenges; explore opportunities; and focus on solutions and positive change. Although I wear many hats - community engagement facilitator, rural social scientist, and strategic thinker - my core focus is to engage people in our agri-environmental future.

I bring a love for farming and growing, hands-on practical experience, and a wide-ranging career in the agricultural & horticultural industries; including over 27 years as an independent consultant. I also bring a deep all-round understanding of different perspectives – from rural to urban, farmers & growers to policy makers, scientists to marketers. I hold a PhD in Agriculture and Environment (Massey), a Masters (Hons) and Bachelors degrees in Agricultural Science (Massey) and a Graduate Diploma in Natural Resource Management (Adelaide).

I'm excited about the opportunities that place-based pilots will bring to weave western science and Te Ao Māori. We will develop a richer and deeper understanding of our world and our place in it. Everyone views and experiences the world differently: respecting and embracing understanding others' knowledge and perspectives will be key to our future.

Clare Bradley

AgriSea

From environmental research with Indigenous Amazonian communities to NZ on-farm research I have developed a unique set of skills. I have worked successfully with Universities, CRIs, farmers and private researchers to complete multiple research projects across a variety of deliverables. AgriSea is a Māori family owned business; te Ao Māori is simply in our DNA. We service national and international markets while investing in R&D to ensure a high-value, thriving seaweed sector for Aotearoa.

I understand bridges can be built when you find common values and common goals that bring communities to create impactful change.

My experience tells me that change led by members of the community is the fastest pathway to adopt research findings.

Aotearoa has the opportunity to live up to its international image of being a clean green economy providing quality products while achieving the best living standards in the world. To help farm, grow, and sustain livelihoods in a manner that recognises the connection between the health and prosperity of our land and the well-being of our people, we need to supply our communities with well-researched, meaningful, and effective tools.

Carla Muller

Perrin Ag Consultants

I am a senior consultant at Perrin Ag who specialises in agricultural and environmental economics. I am also the current President of the NZ Institute of Primary Industry Management and a director of Primary ITO. I live on an extensive sheep and beef farm on

the East Coast which my partner manages so I understand the spectrum of food and fibre production both on and off farm. I have experience in dairy, sheep and beef and horticulture work.

I was a participant on the OLW Next Generation Influencers programme where I gained an understanding of the vision and kaupapa of OLW. I believe more needs to be done to turn research into action to achieve that vision, including better connecting farmers and growers into the research world. The work of OLW aligns with my own professional career goals which are to contribute to the economic and environmental prosperity outcome that are desired by our society. To achieve the OLW vision we need a strong connection with end-users, particularly, land managers, owners, kaitiaki and rural professionals.

The vision of OLW is important to me and I am excited to work in a project that is collaborative, outcome-focused and that has te Ao Māori at its core.

Justine Young

DairyNZ

I have used my 27 years' experience in natural resource policy to lead and implement several complex and challenging land and water regional policy under the Resource Management Act. I have a deep and broad knowledge of barriers and enablers for people to make changes in a catchment.

At regional council and now at DairyNZ I have been deeply involved in designing workable primary sector farm plan and catchment plan approaches. I am actively involved in our mixed dairy and drystock farm and bring a practically grounded appreciation to what is needed to make land and water change.

I am excited to contribute to catchment solutions where Māori priorities for the environment will be central.

Through working with Māori landowners/trustees in the Lake Taupo catchment nitrogen cap and trade project I learnt the value of dialogue and listening to understand. I am currently investigating examples of what Te Mana o te Wai could mean to government and farmers at a local level.

Clemence Vannier

Civil and Natural Resources Engineering, College of Engineering, University of Canterbury

I am a geographer who researches socio-ecosystems. That means I am investigating environmental issues related to landscapes and management systems and society's options to protect health and well-being. I hold a PhD in Geography from the University of Rennes (France) and have completed several post-doctoral fellowships in geography, agriculture, engineering, ecology, epidemiology, and health. I have worked on multiple projects including (1) mapping and modelling land use change and ecosystem services; (2) epidemiology, human health and wellbeing through better landscape and ecosystem management; (3) geospatial solutions for the *WellConnectedNZ* project (interactive map showing health, welfare, community, cultural, educational, sport and recreation, and food

and drink outlets); (4) future agriculture showing options, scenarios, pathways and interventions for transforming the agricultural sector over the next 5-30 years. I have always worked in multi-disciplinary teams and projects and I am particularly keen to gain more knowledge and experience of te Ao Māori in relation to agricultural management and sustainability. I look forward to sharing my background and experiences in working with geospatial data for analysis and modelling of socio-ecological systems.

Lucy Burkitt

Massey University

I am a soil scientist and have practical science and research skills in nutrient management and understanding how contaminants are lost from agricultural systems. I have 18 years' experience as a soil scientist and have led projects studying nutrient management under intensive pasture systems at farm and catchment scale, phosphorus uptake and runoff following different fertiliser strategies in pastures, phosphorus risk modelling and strategic nitrogen management in winter pastures. Over the years I have honed my skills and understanding of how land management influences Te Taiao and what we need to do practically, to improve environmental outcomes.

There has been a lot of amazing research on land management which can improve Te Taiao, especially freshwater outcomes within catchments. However, we have struggled to get widespread and sustained adoption. In order to make a real and sustained impact, we need to place research in a wider context which takes in to account the needs and values of people as well as the environment and to think about how this can be achieved at scale.

Nick Roskrige

Ethobotany, Te Atiawa ki Taranaki

I have some 18 years of experience in research and education with a particular specialisation in indigenous relationships and development in education, research, science, and technology. My PhD focused on Māori land development through traditional knowledge and soil and horticultural science. My work has led to sabbatical periods in Peru (International Potato Centre) and Chile (Universidad Austral). I am a regular to international fora including guest lecturing and project input across international collaborations and farmer training activities across the Pacific including Papua New Guinea. I am currently Chairing the Tahuri Whenua (National Māori Horticulture Collective) and the Māori Advisory Board for the RNC National Science Challenge, a member of the Kahui Māori for the Bioprotection Aotearoa CoRE (Lincoln University) and lecturing at Massey University.

I left school at 14 with no qualifications after 2 years at high school and worked for a number of years in a range of jobs in horticulture and agriculture and eventually contracting labour gangs for producers around the North Island. My Diploma in Horticulture at Massey was followed by an honours degree in Horticultural Technology. I was eventually invited back to Massey to undertake a doctorate in soil science which I completed in 2006. In 2013, I was the recipient of a Fulbright Award and spent several months at Cornell University in the Upstate New York followed by a period with the Tri-State potato Programme (Idaho/Oregon/Washington).

Richard Jones

Māori Enterprise

(Iwi Affiliations - Ngati Maniapoto, Rangitāne o Tāmaki-nui-a-Rua, Te Arawa)

I have roamed the past 30 years following my passion of working in the area of Māori economic self-determination. Much of my time has been spent working with Māori enterprises of all shapes and sizes including ruffians and outliers across a diverse range of activities helping them to develop, consolidate and grow.

A strong advocate of international business and because I love the adventure and excitement of wandering, I've been involved in connecting trade between Māori enterprises and businesses in Asia, Europe, and North America, and have had a keen interest in inter-indigenous trade between Māori and First Nations of Canada, Native Americans, and Tangata Whenua of Australia.

As a passionate believer and advocate of 'together we can achieve more' I've initiated and driven a number of collaborative initiatives in the primary sector including; dairy, horticulture, insects and investment. For the past few years, I embarked on the journey of a 'thousand cups of tea' to pull together a collaboration of Māori and Japanese business to establish a geothermal powered dairy processing plant at Kawerau, [Waiū Dairy](#).

More recently I've been working on the formation of a renewable energy business and a vertically integrated hemp collective. I'm continuously involved in bridging the gap of connecting Māori asset holding entities that are generally cash rich, with Māori entrepreneurs that are generally cash poor, but ideas rich. This also involves bringing together Māori and non-Māori from a values-based perspective of 'whānaungatanga' (collaboration).

Simon Stokes

Simon Stokes Consulting Limited - growing farmers, building confidence, supporting communities

I specialise at two levels - one is focusing on strategic environmental thinking and the requirements for operationalising large scale projects and programmes; the second level is on the ground - farm planning, soils, biodiversity projects, catchment scale management and programmes, soil conservation and working with the community and iwi. My key focus is the long-term future of Aotearoa-New Zealand farm/forest businesses, building environmental management capability and capacity in farm planning. I am involved with the Land Use Capability Classification System governance group which oversees the NZLRI/LUC information and use. I have had a 25-year career in resource management in Aotearoa-New Zealand working for Manawatu Wanganui Regional Council, Hawke's Bay Regional Council, and the Bay of Plenty Regional Council and was Eastern Catchments Manager for the Bay of Plenty Regional Council for 11 years. I managed the integrated catchment management programmes for the Bay of Plenty Regional Council and the regionwide biodiversity and riparian management programme. I was President of the Aotearoa-New Zealand Association of Resource Management and was on the executive for 10 years. I chaired and was a panellist of the Sustainable Farming Farm programme at

MAF/MPI for a decade and has worked with ministries and non-Government Agencies, Crown Research Institutes, Iwi and Māori Trusts, and many landowners.

I want to make a valuable contribution to Aotearoa-New Zealand and support the primary sector to invest in the challenges of today to be successful tomorrow. I am passionate about making a valuable contribution to organisations, iwi, and communities and this is reflected in all my actions and behaviours, including becoming proficient in Te Reo, and through the many awards received by the projects I have been involved in.

James Turner

Our Land and Water NSC

I am a senior social scientist at AgResearch and my current research focus is on co-innovation as a process for tackling natural resource dilemmas and on the socio-ethical impacts of digital technologies in the primary sector. I am also a science theme leader for the OLW National Science Challenge. My doctorate was from the University of Wisconsin-Madison majoring in Forestry Economics, and I have a Bachelor of Forest Science 1st Class Honours from the University of Canterbury and Diploma of Development Studies from Massey University

As one of the project leaders for the Place-based Working Group, I am excited by the opportunity to be a part of a passionate and diverse group with amazing experiences improving outcomes for communities, businesses and the environment. My vision for the project is that we will have supported the many innovative farmers, growers, and communities to realise their aspirations of enhancing the vitality of Te Taiao. This is important to me because Aotearoa-Aotearoa-New Zealand is at a pivotal moment where we have an opportunity to improve how we produce and consumer food to ensure vibrant communities and sustainable environments for future generations.

Pilot Group – assembled as sector experts and leaders in place-based change to independently test the programme thinking by drawing on their knowledge of initiatives that are happening across Aotearoa-Aotearoa-New Zealand

Ngarangi Walker	Kapuarangi Associates
Melanie Sweet	Te Ahu Consulting
<p><i>Ko Pouerua te maunga, ko Waitangi me Waiaruhe nga awa, ko Nga Puhi, ko Te Rarawa, ko Te Aupouri nga iwi.</i></p> <p>I come with a diverse set of skills having worked on large construction and engineering projects in Australia. My last role was as a Lead Expeditor for a large copper nickel plant refurbishment in Townsville, managing vendor contracts all across the globe. Alongside</p>	

my many contract and representative roles, I provide professional strategy and facilitation services to hapū, agricultural, government and community enterprises.

In the past eight years I have had the privilege of being involved in building capacity and unlocking the potential of hapū and whānau. I am currently working across a number of hapū groups across Aotearoa developing frameworks underpinned by tikanga and te Ao Māori practices and principles. Building strength and uplifting my people to achieve success in kaitiakitanga, rangatiratanga, and manaakitanga for the whenua is something I am very passionate about. I would like to continue to build capacity and unlock the potential of all Aotearoa-New Zealanders through a te Ao Māori and true tikanga lens.

Amanda Bell	Criffel Station, Wai Wanaka
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My skills and experience are broad and deep in working with industries and communities to deliver a vision into action. I am a successful entrepreneur with a strong veterinary, farming, information systems, and agribusiness background. With 30 years’ experience I am known for increasing farm profitability and sustainability through best practice and innovation. I have a doctoral degree in veterinary science and completed studies at the Melbourne Business School. I am involved in investing in and advising on businesses in the primary sector.

The vision is to deliver enduring sustainable, healthy environments, and, in particular, waterways. I work with NZ communities, catchment farmer groups, and businesses on growing understanding and developing actions on an agreed future. Future thinking involves looking forwards 30 to 50 years, working through shared visions and back casting to today to create a roadmap to deliver on that long-term vision.

I am currently Chair of Wai Wanaka (a trust focused on safeguarding the Upper Clutha lakes and rivers), a trustee of One Aotearoa-New Zealand (a group educating communities on the UN SDGs) and a member of the ministerial Fresh Water Leaders Group for MfE.

Fiona Young	Taranaki Regenerative Agriculture
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Alan McDermott	Agrifood Strategy
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I have more than 20 years’ experience working with and within agribusiness in consulting, advisory, executive and governance roles across NZ, Asia, South America, North America, and Europe. I have Bachelors’ and Master’s degrees in Applied Science (Ag Systems & Management and Farm Management) from Massey University (1996-2001).

I strongly believe in farmer-led initiatives that are connected to catchments and communities, and that are informed by precise knowledge and science. This requires a focus on the land, the water, and the people (rather than clipboards check boxes and compliance tasks).

Through the Red Meat Profit Partnership (six meat processors, B+L NZ, two banks and MPI), I have led the NZFAP Plus farm assurance programme which included a pilot implementation programme involving 33 farms. The project highlighted the importance of farm planning ‘ownership’ by landowners and their families to ensure meaningful buy-in rather than top-down compliance. Plans and projects must provide value to farming families and their natural environments.

Kati Doehring

Cawthron

Over the past 10 years I have been involved in bettering the vitality of Te Taiao, land stewards and organisations at catchment scales. I have been part of the LAWA (Land Air Water Aotearoa) web tool since its inception and am currently the science lead for the OLW National Register of Actions which has te Ao Māori at its heart and registers Māori and non-Māori land use measures that improve water quality. I have learnt to design and implement research that is meaningful to both Māori and Pakeha.

Communicating with landowners to enable sustainable land use is at the heart of my research in science communication.

We can only successfully restore our freshwater ecosystems if we target them at the scale at which we degrade them – catchment level. Collective responsibility is the only way forward and ‘state-of-the-art’ collaboration between iwi, government, industry, NGO’s, and communities excites me. To make change, we need to adjust the way we design and deliver our science and make sure we overcome the gap between the research and the implementation. A strong team of people with a range of skills can make meaningful change.

Julia Talbot-Jones

Victoria University

I am a Lecturer in the School of Government, Te Herenga Waka – Victoria University of Wellington, and lead the freshwater programme at Motu Economic and Public Policy Research. I have an interest in how social arrangements or structures, what economists call institutions, solve environmental and natural resource problems.

My PhD research examined the socio-economic and behavioural implications of granting the Whanganui River legal rights. My current research builds on this theme and aims to provide new insights into cooperative decision-making and the socio-cultural-environmental values of water.

My research interests are motivated by a belief that we need to think differently about how we use and relate to our land and water systems. Our management systems need to (1) take an integrated approach to addressing environmental challenges; and (2) consider the biosphere as a whole, including our relationship with te Taiao. I believe te ao Māori is a starting point for achieving both of these objectives in Aotearoa New Zealand.

Next Generation Group - Emerging sector leaders from industry, policy and research who would participate as observers to the Working Group and as future sector leaders.

Chevon Horsford	LIC, dairy farmer, consultant
Kiriana Keays	Fonterra sustainability advisor
Katrina Macintosh	DairyNZ, Senior Scientist Water Quality
Charlotte Wood	Ministry for the Environment

Tikanga – the way we work - guidelines for healthy/helpful change

(based on the Tipu Ake ki te Ora model - downloaded 24 May 2021 from [Tipu Ake ki te Ora](#))

Let sunshine into our team – connect, use external energy, tap into old wisdom and experience.

Inspiration not perspiration – lets things arrive and arise in their natural time try not to force an agenda, perspective, or work at a task. Trust in the wisdom of the universe, the collective wisdom of the group and your innate knowing.

Put our focus on the outcome – work with a vision that is so powerful and exciting nothing becomes a barrier.

Do things that make the tasks and the people you work with feel fuller and more enriched as part of the outcome. Focus on the things that will have a positive effect on you, on the project, and on our collective future (long—and short-term). Use the well-being of the team, the project, the researchers, the research organisations, and the communities as a measure of success.

Share your and accept other’s knowledge freely – build bridges not barricades, step across boundaries

On-going learning, peer support, information exchange and collective understanding are key group and individual outcomes from this project. Weaving diverse culture, perspectives, values, and knowledges together takes practice and expertise – accept we are all using learner’s hands. Building connections, links, and networks and sharing, support and mutual learning is the basis of our work in this project.

Trust your sense and intuition – keep your ears and your heart open, check in – don’t check out

Assess the probability of a process, project, or discussion in fulfilling its agreed purpose, the desired outcomes. Always seek opportunities to test, confirm or express your sense of progress (or lack of) – take action.

Own your process and keep things simple – manage yourself and your feelings, be direct and honest about your own experience – don't claim it for or blame it on others.

Look for way to continually improve our processes and activities. Don't wait and suffer in silence – speak to your experience and actively help improve and grow the group and its activities and processes. Let's design a system that evolves and moves the support us not the other way around.

Share, credit others, and recognise every contribution – me + you not me vs you

Work from a clear shared vision of what we are all here for and the outcomes we seek. To support the cause, encourage and support each other. Nurture each other's growth (individually and collectively). Weave celebrate, acknowledge and recognise achievement, growth, courage and understanding throughout our process – we don't wait or save it up till the end.

Love undercurrents and surf diversity – find courage to explore, face edges, and grow in new ways

Look outside the box, gather new ideas and question old assumptions. Appreciate diversity as a strength and a doorway into seeing something from a new perspective or with a new understanding. Inform not conform and learn not lecture.

You are the greatest opportunity and obstacle in the group – be open kete not closed baggage, don't let past experience limit your future opportunities.

We see issues as opportunities. By looking inside ourselves and looking beyond what is familiar we challenge self-limitation, status quo and explore new territory. We lean into diversity and channel our diverse skill talents and perspectives to achieve strength, rigour, and durability. Failure is a pre-condition to innovation, understanding and expertise.

Tipu Ake ki te Ora - An Organic Growth View (read from bottom)

Consider growth within the rich interdependent ecosystem of a rainforest



Raā (Sunlight) – external energy that fuels the ecosystem

Manu (Birds) The entrepreneurs who carry the new seeds of opportunity



Tane (tree)



Ngahua (fruits) Wellbeing(Ora)

These are the outcomes: Purified, air, food, shelter, prosperity, shade, moisture, health, higher learning, and long term sustainability of life. All life is said to be a Child of Tane

Puawaitana (Flowers) -Wisdom

These attract the bees and birds to bring in diversity and pollinate the seeds of new life

Pua (branches) - Sensing

They spread out to collect the sunshine, wind and rain to gain sustenance. When a big tree dies it passes on its space to saplings it has nurtured.

Tinana (trunk) - Process

This gives the tree rigidity and the boldness and ability to reach up through the nurturing canopy of competing / supporting trees to see the light of day. There is a rich interconnectedness between all the species of the forest ecosystem

Putake (roots) - Teamwork

The roots take hold of the earth to give the tree its support and nourishment underground before a sapling appears



Ngarara

(The pests that stunt forest growth)
(a) destructors
Storms, fire, sawmillers, diseases, cars, poisons, stoats
(b) recyclers
Worms, Haha, Weta, insects, beaver, microbes

Kakano (seed) - Leadership

The new life cracks open with courage. The hair roots appear to turn it over, give it direction and stabilise it.

Kore (soil) - Undercurrents

Here the fire, acids, water, wind, storms, earthquakes, pests, and termites break down the old growth crack the hard shell of the seeds to make a new life possible. Here also a network of fine root fungi interconnects species as a nutrient sharing pipeline.

The birds transport seeds and their digestion juices crack the hard seed shell to allow it to germinate. This creates a nursery of juvenile plants on the host tree and under its canopy waiting for an opportunity to find sunlight and grow.

Whana
Mycorrhizal fungi network
(shares nutrients between species)



Whiro (the Poisons)

Toxins, acid rain, ozone hole, exploiters, polluters – take living energy out of the ecosystem