

Peer Review Article

Te Ruru:

Co-creating an Indigenous Systems Change Framework

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Abstract

Indigenous cultures have long-held perspectives that emphasise the interdependence of all living things as holistic systems. Our worldview is thus shaped by deeply embedded relationality, which is in constant response to our interconnected experiences and knowledges. Systems thinking is a way of looking at the world that recognises the interconnectedness of both natural and human-made systems. The systems change approach, which takes into account the interconnected nature of the world's economic, social, and ecological systems, finds common ground with an inclusive, connected Indigenous holistic world view. This article explores the congruence and compatibility between systems change thinking and Indigenous frameworks, emphasizing their common ground. The article introduces an example from Aotearoa New Zealand, which has integrated the tenets of systems change methodology within tribally based principles and aspirations to create "Te Ruru". Te Ruru, an Indigenous framework of systems change, has been designed by a tribally owned Māori (Indigenous peoples of New Zealand) health research centre to investigate the overarching system(s) that perpetuate inequity of Māori health outcomes. Te Ruru is depicted in three parts: the first part, or micro lens; the second part, the macro lens; and part three, the meso lens. The first part of the framework

prioritizes Indigenous identities and values. In part two, Te Ruru's beak, eyes, and wings symbolize the translation of research findings, strategic oversight, and the ability to navigate systems change. The third part of the framework illustrates the goal of new mātauranga and the need to address internal barriers and traumas, emphasizing the necessity for healing and restoration to sustain long-term systems change. A case study of how Te Ruru has been used in conjunction with a research methodology (TUI) is also included. Te Ruru has been purposefully adapted from a specific tribe's knowledge and iterated to represent not just the visible system(s) that Māori communities occupy, but also the 'unseen' within Indigenous and colonial histories. Using systems change from an intentional Indigenous paradigm is thereby an act of decolonisation—a direct act against the systems currently blocking Indigenous flourishing. Te Ruru's transformational power lies in its ability to bring to the surface the seen and unseen, and thereby support Māori to take the helm to lead systemic change via the Indigenous translation of inclusive health research.

Keywords

Indigenous systems change, Māori systems change, Indigenous worldviews, Ngāti Hauiti, Whakauae Research, Indigenous health, Indigenous research

Introduction

“You cannot change a system unless you transform consciousness. You cannot transform consciousness unless the system senses and sees itself.” (Scharmer, 2018, para 18)

“He kokonga whare e kitea, he kokonga ngākau e kore e kitea – a corner of a house may be seen and examined but not so the corners of the heart.” (Māori whakatauki (proverb))

Systems thinking is a way of looking at the world that recognises the interconnectedness of both natural and human-made systems “by invisible fabrics of interrelated actions” (Senge, 2006, p. 7). The lens of systems change provides us with the ability to recognise and articulate contemporary “wicked” problems (Waddock et al., 2015) as originating from the way our systems are designed and structured, rather than being separate, stand-alone problems. Systemic change examines interrelationships between fundamental structures, to “...clarify what it means to shift conditions that are holding a social or environmental problem in place” (Kania et al., 2018, p. 3). Underpinning systems transformation efforts is the drive for equity, shifting the dynamics of power and attempting to identify the underlying causes of the challenging issues (Kania et al., 2018). Systems change entails challenging the status quo, striving to create more just and equitable systems. It demands the implementation of regenerative approaches to effectively address the world's complex and deeply entrenched challenges (Marshall & Twill, 2022). This article establishes a relationship between systems change thinking and an Indigenous worldview in

order to make the case for their congruence and compatibility, a space in which new mātauranga (knowledge) can emerge and flourish. Whakauae Research Services Ltd is an Indigenous research centre that specialises in Māori (Indigenous peoples of Aotearoa New Zealand) health and development research. Situated on the lower North Island of Aotearoa New Zealand, Whakauae Research was developed out of the dreams and aspirations of the people of Ngāti Hauiti, as part of the ongoing journey of tribal revitalisation (Boulton et al., 2023). Members of the Iwi (tribe) descend from the eponymous ancestor Hauiti, who was a descendant of Tamatea Pōkai Whenua, one of the ancestors who journeyed in the Tākitimu waka (canoe) during the ‘great migration’ in the 1300s (Potaka & Butts, 2006). Today, Whakauae Research operates with the aim to further Ngāti Hauiti development and wellbeing, and that of Māori as a whole. Our values (tikanga) have been handed down by the elders of Ngāti Hauiti, which direct us in a constant process of “reclaiming the intellectual traditions, reviving ancient teachings and re-applying the knowledge of ancestors” (Allport, Johnson & Bennett-Huxtable, 2023, p. 3). As Indigenous researchers who are also pan-tribal (descending from Iwi who are not Ngāti Hauiti), we operate from ‘responsive Indigenous standpoints’ (Yunkaporta & Shillingsworth, 2020), which means for us that we exist by positioning our own whakapapa (genealogy), whenua (land), tikanga (values), and mātauranga (knowledge) in relation to that of others, and with the core belief of connection (whanaungatanga). The specific focus of this article is to outline a systems change framework which has been developed within this tribally (Iwi) owned health research centre in Aotearoa New Zealand, with the express aim of allowing researchers within the centre to take a whole-of-systems approach to Māori (Indigenous peoples of New Zealand) health research.

Colonising Systems

Aotearoa New Zealand is a country in the South Pacific that was colonised by Britain in the 19th century. As a result, Māori, like many other colonised peoples around the world, have suffered from a wide variety of negative effects stemming from colonisation. Systemic disparities in social, economic, educational, and health outcomes for Māori are reinforced by the Western system (Came-Friar et al., 2019), which operates across multiple levels of governance in Aotearoa New Zealand. A large corpus of evidence demonstrates how the primary health care system in Aotearoa New Zealand is structured to uphold pre-existing clinical power and resource hierarchies (Came et al., 2020; Health and Disability System Review, 2020; Middleton et al., 2018; Waitangi Tribunal, 2019). By bridging health research and systems change methodologies, Whakauae Research is gaining insight into the systemic roots of complex problems and gaining a useful instrument for making the necessary improvements to Māori health and wellbeing.

Historically, Indigenous peoples living in colonised environments have been disproportionately underrepresented in the design and development of the

systems which govern them (Ray et al., 2022; Schaefer et al., 2021), and have been unable to apply Indigenous knowledge to bring about much-needed change for Indigenous peoples. The growing evidence from within Indigenous research continues to highlight Indigenous solutions to Indigenous peoples' problems, including an understanding of systems change. As Māori health researchers we (the authors, descendants of Ngāti Hauiti, Te Ati Haunui-a-Pāpārangi, Mōkai Pātea Nui Tonu, Te Ati Awa, Ngāti Ranginui, Ngāi te Rangi, me Ngāti Pukenga) are interested in the alignment between systems change methodologies and our own Indigenous epistemologies; an alignment borne out of shared understanding of how systems are created and maintained. The understanding we gained becoming familiar with systems change thinking and writing provided us with the opportunity to consider in our own work how we can influence our national health system, and support efforts to improve the wellbeing of Indigenous peoples.

Systems Change and Indigenous Health

Systems thinking is a methodological framework for applied research that provides methods for dealing with complexity and for developing one's own abilities to improve transformative procedures (Hernández et al., 2017). The Six Conditions of Systems Change explained by Kania et al. (2018) outline explicit, semi-explicit, and implicit agents that interrelate to keep 'problems' in place. The explicit, meaning most obvious agents, are Policies, Practices, and Resource Flows; the semi explicit conditions include Relationships, Connections, and Power Dynamics. The implicit, least 'obvious' condition is represented by Mental Models, which are the often-unexamined beliefs and assumptions that influence behaviour (Kania et al., 2018). Effecting substantive and enduring transformative change relies on being able to know and change the implicit condition of mindsets. By incorporating a broader view of the interdependent elements, networks of relationships, and patterns of interaction that shape and impact health, systems thinking can facilitate a shift from a seemingly narrow focus on health-outcomes to seeing the entirety of the system in which the wellbeing of Indigenous populations is embedded (Hernández et al., 2017). The conceptual tools provided by a systems thinking methodology enable us to interrogate health systems via the lens of continuous histories of settler colonialism, which underpin factors of vulnerability, hazards, and poor health outcomes (Ray et al., 2022). Many of the challenges Indigenous peoples face today are not isolated concerns but rather have their origins in the structure and design of health systems. Systems thinking can help researchers, policy makers, and actors in positions of power within the national health systems "flip" their thinking. Instead of addressing how Indigenous peoples might adapt to and navigate the existing health environment which underserves Indigenous peoples, the flipped focus is directed at how health institutions can alter colonial practices and structures to accommodate Indigenous needs (Ray et al., 2022).

Indigenous Worldviews and Systems Change Thinking—Working in Complexity

“The world is a complex, interconnected, finite, ecological—social—psychological—economic system. We treat it as if it were not, as if it were divisible, separable, simple, and infinite. Our persistent, intractable global problems arise directly from this mismatch”
(Meadows, 1982, p. 101).

Making changes to systems in a Western world is difficult for Indigenous people because the systems we are trying to change are monolithic, complex, deeply entrenched, and we are often not in the positions of power to dismantle them in any real and meaningful way. While we assert that the core principles of systems change and Indigenous epistemology are compatible, the Western-based conceptualisation and application of systems change methodology mean that, as a methodology, systems change is still being applied, conceptualised, and shaped by Western worldviews. Indigenous cultures have long-held perspectives that place an emphasis on the interdependence of all living things and our environment as an entire inter-dependent entity (Nelson, 2008). The systems change approach, which takes into account the interconnected nature of the world's economic, social, and ecological systems, finds common ground with this inclusive holistic world view. Instead of focusing on individual components, both viewpoints stress the need to recognise and resolve the web of interdependencies that underlies the whole. Systems thinking and Māori knowledge share an emphasis on relationships and the meanings assigned to these interactions (Heke et al., 2019). Systems thinking, which places a focus on symmetry and emergence within complex webs of interaction (Stowell et al., 2014), is much closer to the perspectives of Māori knowledge, which links all things together, anchored by a holistic, relational, and temporal worldview (Heke et al., 2019).

Systems change theory takes a wide lens to systemic issues, concentrating on deep complicated roots or complexity. Similarly, Māori view the world as an interconnected tapestry, where nothing occurs in isolation, but instead is informed by relation to other phenomenon. Kaupapa Māori philosophy, which places a focus on holism and the interconnectedness of all things, is congruent with a systemic approach, which is necessary for seeing the “big picture” (Oetzel et al., 2017). Our worldview includes not only the interconnected ecological, social, psychological, or economic, but also the philosophical and spiritual, and the connection between the Atua (deities) and humanity, all encapsulated in mātauranga Māori—Māori knowledge (Boulton et al., 2021a; Marsden, 2003).

Indigenous perspectives frequently place priority on the prosperity of local communities and the strength of relationships. Likewise, the necessity of community collaboration in systems change to tackle complex difficulties is also acknowledged. Both Indigenous perspectives and systems change recognise the value of listening to and learning from locals, those who are the experts in their environments. Involvement in decision-making processes is critical, however,

beyond *involvement* we advocate for Indigenous *leadership* in all spaces. Robust relationships between individuals are essential in order for society to work, and *whānaungatanga* (relationship building) demands conscious efforts to establish and form enduring relationships among and between communities (Boulton & Brannelly, 2015; Mead, 2016; Smith, 2021). For Māori, their long history as *kaitiaki*, or guardians, of the islands of Aotearoa New Zealand and their intimate familiarity with their natural surroundings, including the seen and unseen, make them indispensable to the success of any initiative to effect meaningful transformation of systems (Mark et al., 2022). The idea of centralising Māori knowledge within systems change thus needs to come from the place where we use our Indigenous knowing to position and adapt systems change. Moreover, the cultural signifiers that come from local knowledge, *whānau*, *marae*, *hapū*, *Iwi* and *kaitiaki hāpori* (communities) build opportunities to represent systems change via our own cultural metaphors (Morgan et al., 2021; Yunkaporta & Shillingsworth, 2020).

The Liminal Space and Models of Indigenous Systems Change

“Relational systems thinking is about reasoning between multiple ways of knowing. It’s not about choosing sides—systems theory and complexity science on one side; Indigenous knowledge systems on the other. It’s about the space in-between, and dancing with these two ideas until a third presence shows up.” (Goodchild, 2022b, p. 13)

When looking at the theory of systems change, as developed and applied within a Western lens, there is also an *in-between* zone, a space where linear and binary thinking is abandoned in favour of a *liminal* space of newly seeded growth. This space is a convergence of the points of contact between various bodies of knowledge systems, languages, concepts, and emotions. These various bodies become entangled with one another, producing the liminal zone where more than one worldview can exist. These liminal spaces have been theorised within Indigenous paradigms by Indigenous scholars, including the two-row Wampum belt (Eastman, 2010; Goodchild, 2022a), split headedness (Cajete, 2001), He awa whiria—A “Braided River” (Macfarlane, 2012), and “Two-eyed seeing” (Braithwaite, 2018). Systems change and a Māori worldview can be compared to “Two-Eyed Seeing,” which emphasises the value of combining strengths of Indigenous and Western worldviews to hold a more holistic perspective on the planet and its inhabitants (Bartlett et al., 2012). The Māori worldview highlights the liminal region where Indigenous systems transformation has happened ‘organically,’ and, within the last few years, where systems change theory has been intentionally adapted, re-written and applied by scholars, communities, and practitioners alike.

“Indigenous peoples worldwide have been using sophisticated approaches that have great synergy with systems thinking for millennia” (Browne et al., 2021, p. 6); examples of this include the Michigan Community Anishinaabe and Rural Energy Sovereignty (MICARES) Medicine Wheel framework (Mallett, 2018), which responds to the ethical challenges of how Indigenous knowledge is valued and how communities are included in designing the solutions to socio-technological social systems. The MICARES Medicine Wheel framework allows communities, researchers, and practitioners to use Indigenous knowledge systems to conduct community-based and inclusive enquiries that influence transitions based on community knowledge, experience, values, and aspirations, thereby acknowledging the systemic nature of *problem solving*. The above mentioned Two-Row Wampum Belt, or Tekani teyothata'tye kaswenta (properly), is one of the most well-known examples of Haudenosaunee two-column thinking in action (Goodchild, 2022a), which explores how two knowledge systems (Western and Indigenous) can exist alongside each other. Here, changing social systems through increased self-awareness entails probing the inner workings of phenomena, so that we may perceive, feel, be present with, and ultimately alter them.

In Australia, the Circle Work-Process is being used at the Indigenous Knowledge Systems Lab (IKSL) to centre Indigenous philosophy and custodial governance from “60,000 years of continuous cultural knowledge” (Davis & Coopes, 2022, p. 85). Exploration, inquiry, and organisation are grounded in the circular flow of energy and knowledge, as wicked problems are systemically explored through “deep-time storytelling, yarning, and narrative capture” (Davis & Coopes, 2022, p. 86). Another example of systems change thinking from Aotearoa New Zealand is the deliberate adaptation of the Six Conditions of Systems Change (Kania et al., 2018) into a mātauranga Māori (Māori knowledge) informed model, Te Niho Taniwha. Led by Healthy Families NZ (a Ministry of Health prevention initiative) who support already-existing, local action on health and who influence local and national health financing and policies to be more responsive to communities and their different settings (Matheson et al., 2022), Te Niho Taniwha encapsulates a community-wide systems approach. The development of the Niho Taniwha model is an example of adapting the kupu (words) of the Six Conditions of Systems Change (Inspiring Communities, 2022) into concepts and notions which resonate with Māori, representing a strategic shift away from fragmented, small-scale, and time-limited impact activities (Rayne et al., 2023). This Indigenous adaptation to the Six Conditions model is an act of *hybridity*, in that it negotiates between the Western meanings of the model and the Māori understanding of particular kupu (words) and their application. The idea of the liminal space, or, using Bhabha’s construct of the *third space*, means that this adaptation represents the space where translation and negotiation of Indigenous and Western thinking can occur (Bhabha et al., 1996).

Transformational Māori Health Research, Innovation and Systems Change

Another example of the indigenisation of systems change can be found in the research practices of Whakauae Research. The ongoing health and wellbeing inequities experienced by Māori mirror the situation of colonised Indigenous peoples across the globe, and, like our Indigenous counterparts in other nations, the search for answers to the complexity of inequity has been pursued by Māori scholars, tribal leaders, and community for a number of years. Māori have strategically and purposefully utilised ‘research’ to not only measure and articulate the myriad of problems experienced by Māori since colonisation, but more significantly, to devise solutions and highlight the aspirations of Māori communities.

Whakauae Research is committed to the vision of “transforming Māori lives through excellent research” with a mission to drive “high-quality kaupapa Māori research that is innovative, collaborative and cutting edge to create positive change” (Whakauae Research, 2018). Working closely with the Iwi of Ngāti Hauiti has meant the development of a bespoke *kaupapa Māori* research approach. Kaupapa Māori can be defined as a philosophical doctrine, which incorporates and centralises the knowledge, skills, attitudes, and values of Māori society. This type of research places Māori communities and worldviews firmly at the core of activity and provides a platform for Māori voices to be presented and acknowledged. For Whakauae, kaupapa Māori practice grounds and signposts inquiry into the persistence of Māori inequities, which is highlighted in our work across health services (e.g., Cormack et al., 2022); the Covid-19 pandemic (e.g., Boulton et al., 2022); Rongoa Māori (traditional Māori healing systems) (e.g., Mark et al., 2022); and the ongoing displacement of Māori from their home spaces (e.g. Boulton et al., 2021a, 2021b). Kaupapa Māori also includes Whakauae’s ethical duty of kaitiakitanga (stewardship) of research data, which means safeguarding and ensuring that the benefits that arise as consequence of our research are directed at those for whom the project was originally conceived: whānau, hapū, Iwi and Māori communities more widely (Boulton et al., 2014). To achieve this, Whakauae has created its own data policy which includes the principles of Māori Data Sovereignty (the inherent rights and interests that Māori have in relation to the collection, ownership, and application of Māori data) and Māori Data Governance (principles, structures, accountability mechanisms, legal instruments, and policies through which Māori exercise control over Māori data) (Whakauae Research, 2021).

The more recent and much-needed effort of New Zealand health research funders and the New Zealand Government to produce impact-focused research (Health Research Council of New Zealand, 2019; Ministry of Business, Innovation and Employment and Ministry of Health, 2017) has further highlighted the vexed issue of linking causality of improvements in health outcome with single initiatives, devoid of context. For Māori, this is further complicated by the history of Western research approaches that had relegated

Māori as the *other* to be studied, and where research has the potential to function as a mechanism to exploit and harm Māori (Boulton, 2020). Moreover, Māori are not a homogeneous population in terms of their social, economic, and cultural situation, nor are they of a single mind in respect to their aspirations related to things Māori (Smith, 1995). The colonial legacy of grouping together a wide and diverse group of tribes, each with their own distinct histories, customs, and knowledges, into one amorphous ethnic grouping of *Māori* has been pervasive in approaches to research in Aotearoa New Zealand. This *one-size-fits-all* approach ignores the underlying complexities of systems in response to lived experiences.

Whakauae Research has had to proactively design research practices that respond to the needs of tribal communities, and which contribute to positive change within such communities. The idea of research as a tool towards decolonisation has connected the approach of kaupapa Māori research to systems change theory, in that both focus on analysing issues and designing solutions with a holistic overview of interrelatedness and complexity. This recognition has prompted Whakauae to adopt systems change theory as an underlying methodological tenet of our research, recognising that to positively change the lives of Māori, the system that keeps perpetuating inequity needs to be investigated, laid bare, and then challenged from within an Indigenous worldview—a Māori worldview. The development of the Whakauae systems change framework rests on deeply embedded tribal values of Ngāti Hauiti, the lived experiences of the Māori community, and the impact of New Zealand's colonial history.

Whakauae's Systems Change Framework

The idea of researchers as “*knowledge brokers*” engaged in evidence mediation (Meyer, 2010) is a central idea within Whakauae Research's alignment to systems change. Knowledge brokers are at the centre of a science advisory ecosystem (Gluckman, 2017) which is made up of institutions and players from the world of research, rather than policy, who improve the incorporation of scientifically developed knowledge into public policy. In this sense, we, as Māori researchers, need to be as clear as possible about the macro, meso, and micro ecosystems that surrounds us, and our efforts to push research out into the world to make change on the ground for Māori. The idea of exploring and bringing these ecosystems into the light is not new for Māori thinkers. In this sense we follow the footsteps of the leaders who have come before us, who have been able to break down what seems to be *complex* into relatable and useable frameworks based firmly in Te Ao Māori (the Māori world). One of these examples is Sir Mason Durie's *Whare Tapa Wha* (House of four walls), which encapsulated a Māori view of holistic health in a simple health model to show the components of taha wairua/spiritual wellbeing, taha hinengaro/mental and emotional wellbeing, taha tinana/physical wellbeing, and taha whānau/family and social wellbeing. The Whare Tapa Wha, has, since its first scholarly description in 1984, become widely known and used within the Aotearoa New Zealand health system as a

means of articulating a Māori view of health to a largely Western health system (Durie, 2003). Another example is Te Korekoreka (Tokona Te Raki, 2023), a conceptual framework devised by Kai Tahu (an Iwi in the South Island of New Zealand) which utilises their unique Iwi Indigenous systems to guide Māori futures, emphasising the need for diverse viewpoints in evaluating complex changes. Drawn from a Kāi Tahu karakia (incantation) *Kei a te pō*, which narrates the Kāi Tahu creation story, outlining the emergence of the universe through song, Te Korekoreka delves into four pivotal realms of creation: commencing with Te Pō (the darkness), transitioning to Te Ao Mārama (the light), advancing to Te Ao Tūroa (the physical world), and eventually returning to Te Kore (the nothingness), completing the cycle by returning to Te Pō (Tokona Te Raki, 2023). The four domains of Te Korekoreka utilise ancient creation knowledge to address the myriad complex contemporary challenges whānau face today.

Te Ao Māori (the Māori world) provides a distinctive perspective for understanding and interacting with systems, underscoring interconnectivity, reciprocity, and balance. This viewpoint promotes a deeper comprehension of the complex interactions among different components and demonstrates an innate comprehension of constructing, interpreting, and navigating systems. Te Ruru is a framework which aims to support an ongoing process of Indigenous thinking and knowledge, demonstrating Indigenous ability to translate complex concepts into practical and tangible models.

The following systems change framework, Te Ruru, has thus been purposefully adapted and iterated by us as a way to represent and to remind ourselves not just of the visible system(s) within which we, and our Māori communities, inhabit, but also the *unseen* within our Indigenous and colonial histories.

Systems Change Framework: Te Ruru

To express the significance of systems change from an Indigenous lens particular to our rohe (region) in Aotearoa New Zealand, we draw upon the metaphorical symbolism of Te Ruru (the owl, the Morepork, in English, a small owl, endemic to Aotearoa), a bird of historical significance to Ngāti Hauiti. The Ruru has played a crucial role in the formation and growth of some of Ngāti Hauiti's cultural artefacts, providing inspiration for the melodies, rhythms, and diction of waiata (songs), whakataukī (proverbs) and karanga (ceremonial calls). A carved representation of Te Ruru holds pride of place visually in the tomokanga (carved entrance way) to Rātā Marae (traditional meeting place), greeting every manuhiri (visitor) into the ancestral house. Te Ruru plays a critical role in environmental sustainability, given its fluid and interconnected relationship with other species in te taiao (the natural environment) of the Rangitīkei area, navigating bushlands, forest, waterways and the night. Te Ruru is thereby in itself a connector between land, species, and tangata (people), and like other birds native to Aotearoa New Zealand, it is a taonga (treasured species) and an indicator of cultural meaning, health, and the vitality of the natural environment.



Image 1: Te Ruru Systems Change Framework

We are intentionally adopting a systems change framework to critically assess, create, and coordinate system-wide equity and inclusion initiatives in our Kaupapa Māori research. A systems change framework in itself may not be a novel idea, but when operating within our Ngāti Hauiti worldview proves a useful framework for assessing the cross-hierarchical, systemic challenges faced by Māori in seeking wellbeing. With the use of a systems change framework, we can pinpoint the specific factors that are preventing our Kaupapa Māori research from being implemented and having an impact.

The systems change diagram is complex, so we have broken it into three parts for ease of understanding.

Part One—A Micro Lens on Systems Change

The first part of the diagram privileges and reinforces our Indigenous identities, starting from our worldview, based on our values, our actions and led by the concerns and needs of our whānau (extended family or community group). A micro lens highlights the eyes, beak, and the body of Te Ruru, providing a close-up look at the activities a research team might undertake within a study.

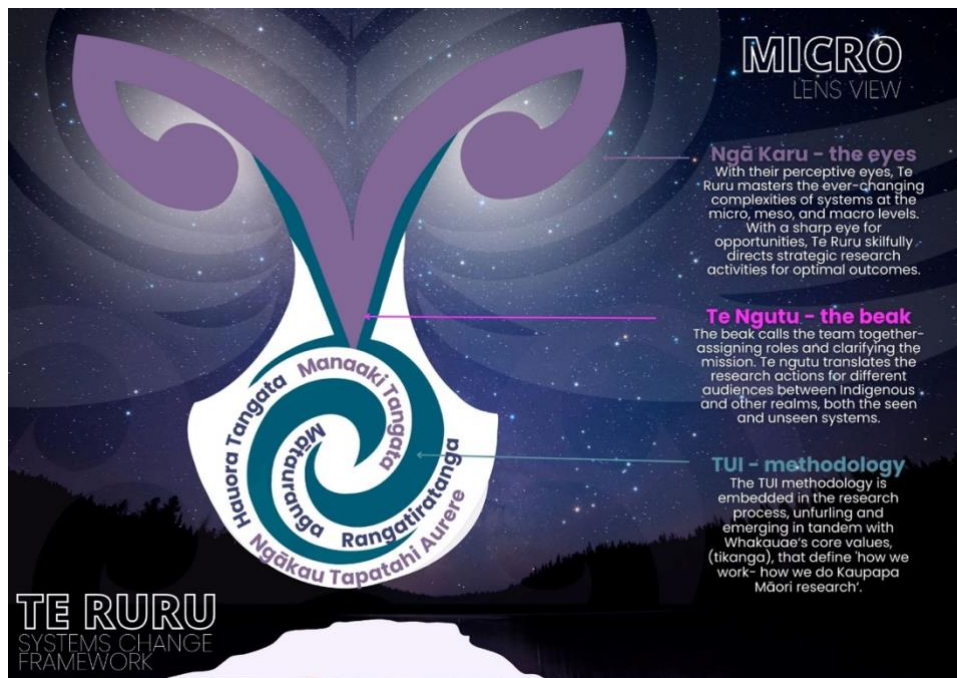


Image 2: Part One of Te Ruru Framework

Ngā karu - The Eyes: The eyes represent the lens looking out from our Indigenous life world. The morepork has sharp eyesight and hearing. A model of efficiency, Te Ruru hunts at night, taking a whole of systems view to what is happening on the land below. With their perceptive eyes, Te Ruru masters the ever-changing complexities of systems at the micro, meso, and macro levels. With a sharp eye for opportunities, Te Ruru skilfully directs strategic research activities for optimal outcomes.

Te Ngutu - The Beak: Whilst our values are constant, the ways in which we engage with the metaphysical and material worlds change as the knowledge, or research gathered, is translated. This is represented by the beak of Te Ruru who calls “po, po, keo, keo.”¹ The beak calls the team together—assigning roles and clarifying the mission, Te ngutu translates the research actions for different audiences between Indigenous and other realms. As a messenger between realms, Te Ruru engages with the visible and invisible energies (environment, humans, spiritual, ancestral), both the *seen and unseen systems* and with its spiritual significance as a connector to the human and more-than-human realms. Te Ruru holds the power to protect, to warn, and advise. The beak of Te Ruru

¹ “Po, po, keo, keo” is the call the Ruru or Morepork makes at night. This wording comes from a Ngāti Hauiti karapīpiti, from a phrase used in formal contexts (like a Pōwhiri- a welcoming ceremony). Many karapīpiti include Iwi-specific genealogical knowledge, local expressions that are meaningfully relevant, tales, and expressions about ancestors' thoughts, acts, and historical events (U Potaka, personal communication, Jan 2023)

represents the translation of our research findings—the myriad transformations and paths that messages must follow, as well as the varying shapes they must take, in order to inspire a groundswell of action and mobilise our stakeholders and partners to join us in effecting change.

TUI Methodology: At the core of Te Ruru are the tikanga (values) of Whakauae (our Iwi owned research organisation), seen here as the spiral at the centre of Te Ruru, firmly fixed in the depths of tangible research practice and spirituality of Whakauae team members. An ancestor from Ngāti Hauiti, Tamatea Pōkai Whenua, named a local mountain range "Whakauae Raro" (in the Rangitīkei Ranges), which is reflected in our Research Centre's name (Boulton, 2020). In the systems change diagram, the values of Whakauae represent how we are led in our Kaupapa Māori research through the enduring foundation of our kawa (core values), which were bestowed upon us by Ngāti Hauiti, rooted deeply in Papatūānuku (our earth mother). These values form around the body of the TUI Methodology (Allport, Johnson & Bennett-Huxtable, 2023) which unfurls and emerges alongside the research ensuring the consistency of our worldview and our values in how we engage with our whānau.

Part Two—A Meso Lens on Systems Change



Image 3: Part Two of Te Ruru Framework

New mātauranga (new Māori knowledge): In tune with our environments, we are able to orient our aspirations and new narratives within the stars and expand our new mātauranga optimistically outwards. For new mātauranga to take root and flourish, the system needs deliberate calibration to affect meaningful and sustainable change. The calibration intends to change the

status quo by modifying the structure or function of a specific system through deliberate interventions. By modifying the fundamental components and enabling processes that cause the system to function in a specific manner, systems change seeks to achieve long-term transformation. For new mātauranga to flourish, part of this process involves looking back inwards the micro and meso worlds where often overlooked and neglected trauma and healing is required, a process we coin *haumanutanga* (restoration).

Ngāngara (the things that hold us back): Te Ruru is a nocturnal hunter, and their prey includes insects, small animals, and birds—including introduced (non-native) species. In fact, Te Ruru is one of the few native species which has adapted well to the introduction of species (mice, stoats) which it preys on, cleaning the forest floor of these introduced pests. For this reason, the *ngāngara* in its claws symbolise the trauma, barriers, and doubts that prevent us from truly flourishing. Depicted here as taniwha (spirit) or ngāngara (dragons/insects), this imagery reminds us that there are internal, personal, battles that, as colonised peoples, we must contend with and overcome—victimhood, self-sabotage, trauma, jealousy, frustration. Born from colonial trauma (disconnection from land, language, culture, family) and survival tactics, this third section is often the *unseen* or as yet unspoken step in systems change. Even with the system stakeholders' help, additional support and space in the process is required for Māori to remedy habits, patterns, and behaviours which constrict long term change to flourish. While we rebuild, reshape, and coordinate systems change, concurrently we must heal, take space, and restore hauora (wellbeing) in this wider realm to ensure the changing systems can be sustained and Māori are resourced with the capacities and capabilities required to lead that change.

Part Three—A Macro Lens on Systems Change

New mātauranga (new Māori knowledge): In tune with our environments, we are able to orient our aspirations and new narratives within the stars and expand our new mātauranga optimistically outwards. For new mātauranga to take root and flourish, the system needs deliberate calibration to effect meaningful and sustainable change. The calibration intends to change the status quo by modifying the structure or function of a specific system through deliberate interventions. By modifying the fundamental components and enabling processes that cause the system to function in a specific manner, systems change seeks to achieve long-term transformation. For new mātauranga to flourish, part of this process involves looking back inwards the micro and meso worlds where often overlooked and neglected trauma and healing is required, a process we coin 'haumanutanga' (restoration).

Ngāngara (the things that hold us back): Te Ruru is a nocturnal hunter, and their prey includes insects, small animals, and birds—including introduced (non-native) species. In fact, Te Ruru is one of the few native species which has adapted well to the introduction of species (mice, stoats) which it preys on,

cleaning the forest floor of these introduced pests. For this reason, the ‘ngāngara’ in its claws symbolise the trauma, barriers and doubts that prevent us from truly flourishing. Depicted here as taniwha (spirit) or ngāngara (dragons/insects), this imagery reminds us that there are internal, personal, battles that, as colonised peoples, we must contend with and overcome—victimhood, self-sabotage, trauma, jealousy, frustration. Born from colonial trauma (disconnection from land, language, culture, family) and survival tactics, this third section is often the ‘unseen’ or as yet unspoken step in systems change. Even with the system stakeholders’ help, additional support and space in the process is required for Māori to remedy habits, patterns and behaviours which constrict long term change to flourish. While we rebuild, reshape and coordinate systems change, concurrently we must heal, take space, and restore hauora (wellbeing) in this wider realm to ensure the changing systems can be sustained and Māori are resourced with the capacities and capabilities required to lead that change.



Image 4: Part three of Te Ruru Framework

TUI (Translation, Uptake, and Impact) as a Tool and Method of Systems Change

While charting an alignment between systems change and Māori research is one thing, being able to operationalise systems change thinking throughout the entirety of a research process is quite another. We know that when it comes to the reach and subsequent impact of research outputs, effecting change can be fraught. Educational researchers Henriksen & Mishra (2019) reported that “as many as 50% of papers are not read by anyone other than the authors, referees,

and journal editors of a piece” (p. 395).² The *traditional* way of sharing research in academic papers, conferences, and other places for *experts* or academics, excludes a wide range of stakeholders—including communities—and often does not propel new insights to influence changes in policy and practice. The fact that academic papers alone do not result in meaningful change is acknowledged by the World Health Organisation (WHO), who describe the need for an evidence ecosystem for impact, which consists of the use of systematic and transparent processes, continuous improvement processes, needs-based approaches, inclusiveness, integration, and equity within research dissemination (World Health Organisation, 2021).

For Whakauae Research, where the gap between research and positive impacts for Māori remains a substantive concern (Smith et al., 2019), our purpose-designed TUI approach has become a way of enacting systems change thinking across the life cycle of a research project. In this sense, Te Ruru is our guiding systems change methodology, and TUI is one of our tools, or methods to enacting the systems change method. TUI stands for *translation, uptake, and impact*, which Whakauae has defined as three essential aspects that guide the research process towards systems change. *Translation* represents the interpretation of key insights into communications that are easily understood by the intended key audience—in our case, Māori. The term "translation" is especially fitting for our research facility, which is owned by Iwi, because our goal is to transform academic content into a form that can be understood and used by Iwi for their strategic growth, Māori, community members, and decision-makers. We cannot expect our conclusions to be understood or, more crucially, put into action, by using a one-size-fits-all strategy. *Uptake* refers to key insights resulting in changes to how something (e.g., health services) is designed or delivered. Lastly, *impact* is defined as the result of changes that occur in response to either uptake, or the mindset shifts initiated by key insights and research messaging. Whakauae uses TUI as part of its continuous effort to find effective strategies for disseminating research results to targeted audiences. We seek to effectively apply the findings from our research into forceful and actionable intelligence to make a positive impact on the lives of Māori.

The act of translating evidence into messaging that is relevant to Māori communities creates space for inclusive change. Translation in this sense means changing the story, changing who tells the story, and changing who hears the story. This act of *translation* thereby has the potential to create uptake of research findings, and to result in impacts from the change created by the uptake (Allport, Johnson & Bennet-Huxtable, 2023). Changing how we create narratives

² This number is based on Meho’s (2007) analysis of the Institute for Scientific Information (ISI) citation databases – which include the Arts and Humanities Citation Index (A&HCI), Science Citation Index (SCI) and Social Sciences Citation Index (SSCI).

from research can help drive public discourse, help shift mindsets, and ultimately affect policies and practices.

Our ability as researchers to influence and impact the top-layer of the “Six Conditions of Systems Change”, namely the analysis of policies, practices and resource flows is considerably more straightforward than our efforts to alter the second and third layer of this framework, i.e., relationships and power dynamics and mindsets. The intentional translation component of the TUI approach creates the opportunity to present new and multiple perspectives; through Whakauae’s TUI approach diverse perspectives and roles are brought together to make sense of new findings, rather than interpreting Māori experiences through a Western lens.

TUI is an aspiration as well as a process, where Whakauae research teams are required to strategically consider the breadth of the system that provides the context for any research topic, population of interest, or locality. The practice of TUI requires the research team to consider the role of mindsets within systems change, prompting the exploration of the research teams’ mindsets, the research participants’ mindsets, and the mindsets of the stakeholders that can help to effect change. The TUI process—applied through a series of workshops, run at key stages throughout the research project—prompts researchers to consider the wider systemic aspirations for each research project from the very outset of the study. Teams are also prompted to consider the key stakeholders, and the stakeholders’ mindsets, to better design and target communications of research findings that reflect this larger systemic thinking. Outputs from this process have resulted in a range of targeted disseminations, including Indigenous symposia, videos, infographics, websites, blog posts, Pūrākau (story) books, media articles and games for rangatahi (young people), alongside the more common academic outputs of journal articles and conference presentations.³

The example of TUI as an operational tool of systems change in research is founded on Māori relational understanding, which is based on the constant interplay between connectivity and power dynamics. The idea of relationships and power as an integral aspect of systems change is well-known to Māori, who have over a century of experience of living in Western colonial relationships and power dynamics not of their own making. Disruption of these dynamics comes from the intentional re-storying of narratives *about us* and our centring of Māori and Māori lives as an act of mana motuhake (self-determination and control over our own destiny).

³ See www.whakauae.co.nz

Case Study Te Ruru Systems Change Framework from Using the TUI Methodology

Te Ao Rauropi research team at Whakauae used the TUI methodology and Te Ruru framework to launch a study promoting the understanding and adoption of Rongoā Māori (traditional Māori healing) in the New Zealand health and disability sector. This case study showcases Te Ruru being used in action, where the Te Ao Rauropi research team established a functional liminal space inside the complex and predominantly Western-focused health system for systems level transformation to occur. This case study follows the Te Ruru framework above and is broken into three sections (micro, meso, macro) for ease of reading.

A Micro Perspective

The TUI methodology began at the start of the research project which allowed the research team to develop their systems impact thinking within the central tikanga (values) that Whakauae operates within. The TUI methodology provided the research team oversight and instructions on how to conceptualise and navigate between micro, meso, and macro levels of the health systems with a bird's-eye view, breaking down system problems into underlying patterns and attributes, revealing the factors holding these issues in place (Allport, Johnson & Bennett-Huxtable, 2023). From this process, the Te Ao Rauropi research team pinpointed a specific area inside this transitional liminal space where Western and mātauranga Māori viewpoints could engage with each other. This liminal space was a TUI dissemination opportunity—an online Indigenous symposium. Western medical viewpoints on Rongoā Māori were invited into an Indigenous led space (instead of the other way around), where Whakauae-informed tikanga (including a pōwhiri (welcoming ceremony), karakia (ritual incantations and chants invoked to spiritually protect and acknowledge human and more than human energies) and paepae (a metaphorical bench of speakers)) were led by kaumatua (respected elders) to open, close and keep the online symposium safe. In line with the values of Whakauae, the symposium was kept spiritually safe by enacting tikanga, and this included ensuring that the symposium was freely accessible to whānau with a diverse range of inter-generational attendance occurring (Allport et al., 2022).

A Meso Perspective

Identifying an Indigenous online symposium as a potent transformational platform, TUI workshops guided the Te Ao Rauropi research team to enact the wings of Te Ruru by calling on key stakeholders within organisations (such as the Ministry of Health, Accident Compensation Corporation, the interim Māori Health Authority and the Rongoā community), forming collaborative relationships to influence a shift in the resourcing of Rongoā Māori in the public health and disability sector. This process relied heavily upon the long standing, credible relationships the Te Ao Rauropi research team had built with systems

stakeholders and the quality of the research dissemination the team had achieved. The resulting symposium *Tū Mai Rongoā Māori* brought together a diverse group of stakeholders, possessing resources and influence to impact policy, practice, and power dynamics in the health system alongside whānau community members who needed this shift to occur. Tū Mai Rongoā Māori showcased the transformative potential of Rongoā Māori to stakeholders, aligning strategically with a significant period of health sector restructuring (Allport, Johnson, Potaka-Osborne et al., 2023). A key focus of the symposium was to clarify narratives; to debunk the myth that Rongoā Maori is only concerned with therapies such as massage or the application of creams and instead is a holistic mode of maintaining and sustaining wellbeing (Mark et al., 2019). The symposium involved drilling down through various system levels, including mindsets and mental modes, to clarify the definition of Rongoā Māori and capture the depth and breadth of its application. Symposium insights were disseminated through various channels, including infographic posters, a dedicated website, and youth-specific resources. The creation of these resources ensured greater accessibility of Rongoā Māori knowledge by the community, which could in turn be used by communities to aid advocacy efforts and support applications for funding. Whānau participants of the symposium confirmed that they felt heard and that it was a healing experience (Allport et al., 2022). Proactively seizing opportunities as they arose, Te Ao Rauropi contributes to movement building in Rongoā Māori, advocating and influencing systemic change in how healing can occur in Aotearoa. An example of seizing opportunities occurred only months after the symposium ended where bespoke posters, outlining government policies and practices, were displayed in a tent on Waitangi Day. Waitangi Day is a significant public holiday in Aotearoa, New Zealand (Matika et al., 2021) which draws Members of Parliament, systems stakeholders, government department heads and those with the power to effect change to policies and practices to an event which acknowledges the signing of Te Tiriti o Waitangi (the Treaty of Waitangi). Drawing on the resources developed from the symposium, Te Ao Rauropi team members advocated for the inclusion of Rongoā Māori into practice by getting eyes onto the work, i.e. disseminating project findings to reach an audience that is often very hard to reach or not receptive to these messages. The context of Waitangi ramps up an awareness of Māori health equity and other Māori equity concerns which meant we were able to reinforce the importance of Rongoā Māori.

A Macro Perspective

Te Ruru, as a conceptual systems change framework, facilitated a nuanced reflection of the Te Ao Rauropi research team's impact, merging the planned and organic activities connected with their research outputs. Notably, Maikuku (the claws) empowered Te Ao Rauropi to proactively seize key opportunities as they arose, a distinctive feature distinguishing the Te Ruru approach from traditional funded research projects.

Moreover, contemplating the presence of *ngangara* within the system pinpointed particular detrimental behaviours (such as gatekeeping) and obstacles hindering the acceptance of *Rongoā Māori*. These are the factors impeding the emergence of fresh *mātauranga* (knowledge) and inhibiting transformative changes within the health system. Te Ruru then, is a framework which supports emergent thinking. It is responsive to opportunities and gives researchers permission to be dynamic and transcend the traditional role of what is considered “academic.” Te Ruru encourages research to return back to the community and promotes the use of *tikanga* and *kawa* within the setting in which it is used by prioritising an Indigenous way of doing things first before bringing Western or other theory into the liminal space. The new *mātauranga* the Te Ao Rauropi team developed is evident in the myriad bespoke outputs they have produced, tailored to speak directly to the many system stakeholders who can enact change. In contrast to conventional research projects concluding with the expiration of funding, Te Ao Rauropi is committed to sustained resource sharing, offering a specialized website accessible to all beyond the project's conclusion. The Te Ao Rauropi team's ongoing efforts involve disseminating knowledge and actively contributing to the advancement of *Rongoā Māori* adoption. As the Te Ao Rauropi research team continues to develop their research and outputs, the Te Ruru framework is being used to evaluate, measure, and communicate the achieved system shifts. As a growing model, the Te Ruru framework can adapt and expand alongside the team's progress.

Whakauae's systems change framework, operationalised by the TUI process, thereby enables the ‘theory’ of systems change and in particular the ‘theory’ of a bespoke, Indigenous systems change framework to be explored as part of the everyday business of Māori health research. Here, the importance of how our audience receives, interprets, and mobilises our research is as important as the research findings themselves.

Concluding Thoughts

There needs to be more research and dissemination investigating the steps Indigenous people take to affect meaningful (and intergenerational) change by utilising Indigenous systems change frameworks. Furthermore, we need to understand the optimum conditions under which these steps can be both meaningfully implemented and replicated. Indigenous academics, researchers, and social innovators in Aotearoa New Zealand and globally are beginning to embrace the promise of systems change thinking and practice by incorporating Indigenous knowledge into their own way of doing things. Although they are distinct knowledge systems, each with its own rich cultural and historical background, we recognise that systems thinking and an Indigenous Māori worldview overlap in shared understandings and experiences which complement and strengthen one another (Heke et al., 2019). Beyond this overlap, there is significant congruence and compatibility with our Māori and tribal worldviews and epistemologies, allowing us at Whakauae Research to indigenise an existing

systems change framework and operationalise it in a cultural-ethical way through the TUI process.

The important distinction that needs to be made here is that for Māori, systems change is a tool which can be used inside an Indigenous paradigm, and not the other way around. The systems change frameworks arising from Indigenous knowledge systems are inextricable from the specific Indigenous context from which they arise, and should not be appropriated into colonial endeavours, or by those outside of the Indigenous context. Whilst the systems change framework and Māori worldview can be aligned for impact, we stress that this compatibility does not need to involve erasing Indigenous worldviews or forcing them to conform to Western ones. Combining systems change thinking within and inside of Indigenous worldviews is seen here as an opportunity to continue the quest for improved equity and to rectify the experience of colonisation, dispossession, and marginalisation of Indigenous peoples. This creates a counter-hegemonic space, where power relationships can be analysed and articulated. It is here, at the interface between Indigenous and Western conceptualisation, that we see an opportunity for the liminal space to go beyond reductionist, compartmentalised and monocultural strategies to solve complex problems.

Systems change, as an approach to thinking about complex issues when aligned to, or conceptualised through an Indigenous worldview, can contribute to the self-determination, cultural revival, and recovery of Indigenous peoples. Using systems change from an intentional Indigenous paradigm is thereby an act of decolonisation—a direct act against the opposing oppressive structures or systems currently blocking Indigenous flourishing. Te Ruru's transformational power lies in its critical reflection of the Aotearoa New Zealand health care system, bringing to the surface the seen and unseen, and thereby supporting Māori to take the helm to lead systemic change via the Indigenous translation of inclusive health research.

Te Ruru demonstrates how an Iwi-owned organisation has developed a practical plan for implementing systems change based on an Iwi-specific set of epistemological and ontological perspectives. Te Ruru, rather than being a static model, is a living Indigenous-centred framework that evolves and improves with each application, refining the application of researchers' work within diverse cultural systems. We share our example in the hope it is a call to other Indigenous researchers who might hear the symbolic "po po, keo, keo" from their own owls, and contribute to the broader discourse on Indigenous knowledge informed approaches to systems change.

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Glossary

The Glossary included here is intended to provide non-native Te Reo Māori speakers a brief explanation of the concepts mentioned in the article.

Te Reo Māori	English
Te Ao Rauropi	Literally, the biosphere. A research project being conducted by Whakauae Research Services Ltd. The full title of the study is Te Ao Rauropi: Mapping the biosphere of Rongōā Māori. For more information see https://www.whakauae.co.nz/current-work/te-ao-rauropi-mapping-the-biosphere-of-rongoa-maori and https://www.whakauae.co.nz/current-work/te-ao-rauropi-mapping-the-biosphere-of-rongoa-maori-2
Whakauae	Whakauae Research Services Ltd in the North Island of New Zealand is the country's only Iwi owned research centre. The term Whakauae comes from the phrase “Te Whakauae a Tamatea Pōkai Whenua”, the name of a range of hills within the tribe's territory.
Te Ruru	Morepork, owl, <i>Ninox novaeseelandiae</i> - a native owl common throughout Aotearoa
Tū Mai Rongōā Māori	Literally “Rongōā Māori Stand Up”. The name given to an online symposium whose full name is Tū Mai Rongōā Māori –

	Calling forth the mana of Rongoā Māori. This was held online on Wednesday 29th June 2022
ACC	Accident Compensation Corporation, the Crown Entity that administers the Accident Compensation Act 2001 in New Zealand
The Interim Māori Health Authority	An interim Crown Entity established in September 2021, ahead of the creation of Te Aka Whai Ora – The Māori Health Authority. At the time of writing, Te Aka Whai Ora is being disestablished (February 2024) subsequent to a change of government.
Waitangi Day	A public holiday in New Zealand. In this article we refer to the actual town of Waitangi in the far north of the North Island which marks the location of the first Treaty signing by representatives of the British Crown and over 40 Rangatira (chiefs) on 6 February 1840. For further context go to https://www.waitangi.org.nz/

Whakauae tikanga (values) in the article expanded:

Tikanga	How the tikanga is actioned at Whakauae
Rangatiratanga <i>Ko te Rangatiratanga te Kaupapa Nunui.</i>	We will uphold the right of Māori to determine their own aspirations and the pathways for achieving them. As an iwi-owned entity, Whakauae is accountable to the Ngāti Hauiti Rūnanga, through our own governance board.
Hauora Tangata <i>Ko te Hauora Tangata te Kaupapa Matua.</i> <i>Ko Ētahi o ngā Āhukatanga nui e pā ana ki te Kaupapa nei ko te Tinana, te Wairua, te Hinengaro me te Oranga o te Whānau.</i>	Whakauae embraces a holistic understanding of what constitutes good health for all. We acknowledge the dimensions of the physical body, spirituality, knowledge and understanding, along with the wellbeing of the entire whānau as the key principles of wellbeing.
Mātauranga <i>Ko te Mātauranga e Āheitia ana te Whanaketanga mō Ngāi Tātou, mo te Iwi Māori.</i>	We acknowledge that knowledge in itself encompassing academic achievement, excellence and mātauranga Māori is the key enabler of Māori growth and development.
Manaaki Tangata <i>He mea nui ko te Manaaki Tangata i roto i ngā Mahi Katoa, Ahakoa ko Wai, Ahakoa Kei Hea.</i>	In all of our activities, programmes and relationships, we will uphold high standards of care and respect for each other and all the people and organisations with whom we interact.
Ngākau Tapatahi Aurere <i>Ko te Ngākau Tapatahi me te Aurere te Waka Kōkiri.</i>	It is through professionalism, integrity, diligence and genuine passion that we aim to build our reputation and maintain true progress as a research service.

Source: Whakauae Research Services Ltd (2023). Annual Report 2022. Whakauae Research Services Ltd, Whanganui. p12.