

He Rangahau Tauutuutu

Research Reciprocity Framework



Te Kotahi
Research Institute

THE UNIVERSITY OF WAIKATO

He Rangahau Tauutuutu Research Reciprocity Framework

February 2026

Merepaea Manukau
Prof Maui Hudson
Natalie Kusabs
Hon Nanaia Mahuta

Published by
Te Kotahi Research Institute
University of Waikato
Hamilton
New Zealand

Preferred Citation
Merepaea Manukau, Maui Hudson, Natalie Kusabs and
Hon Nanaia Mahuta. *He Rangahau Tauutuutu Research
Reciprocity Framework*. Te Kotahi Research Institute,
University of Waikato: Hamilton,
February 2026

Front Cover Image:
Aotearoa New Zealand
native bush

*Note. All images Copyright
n.d. by University of Waikato
Used with permission*



Te Mata Punenga o Te Kotahi | Te Kotahi Research Institute
Te Whare Wānanga o Waikato | The University of Waikato

Table of Contents

Research Reciprocity	2
He Rangahau Tauutuutu	3
Rangahau	4
Kaupapa	4
Mana Motuhake	4
Cultural Reciprocity	5
Research Reciprocity through Action	8
Core Elements of He Rangahau Tauutuutu	9
Community Engagement	10
Knowledge Co-Production	10
Indigenous Data Sovereignty	10
Capacity and Capability Building	12
Knowledge Exchange	12
Infrastructure support	13
Benefit Sharing	13
Research Reciprocity through Impact	16
Key Audiences for TKRI Research outputs	17
Appendices	19
Appendix 1: He Pātai Research Reciprocity Questionnaire	20
Appendix 2: Ngā Taurira Examples of Research Reciprocity	21
Appendix 3: Ngā Kōrero Research Impact Stories	22
Appendix 4: Cultural Reciprocity Framework - Planning Template	24
Appendix 5: Cultural Reciprocity Framework - Summary	25
Appendix 6: Glossary	26

SECTION ONE



Research Reciprocity

Research reciprocity represents a deep commitment to partnership with Indigenous communities in research collaborations. It emphasises the need for not only benefit sharing but also power sharing across the broader research lifecycle encompassing both upstream

and downstream activities. Research reciprocity is inherently relational with a focus on distributing resources, opportunities, decision-making and control in an equitable manner.

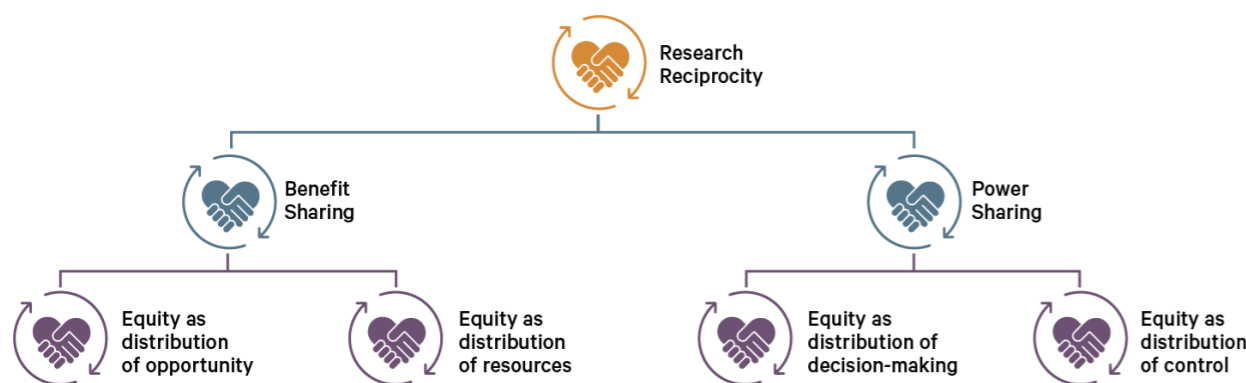


Figure 1: Relational research reciprocity

Research reciprocity combines the ethics and community engagement that inform equity in ‘**International research collaborations**’, the issue of trust and social responsibility aligned to ‘**Responsible Research and Innovation**’, the knowledge translation intent associated with ‘**Research Impact**’, and the

concept of **Fair and Equitable Benefit-Sharing** enshrined in the Nagoya Protocol; and brings them into dialogue with Indigenous aspirations for research partnerships including self-determination, cultural centredness, Indigenous data sovereignty, community wellbeing, and capacity building.

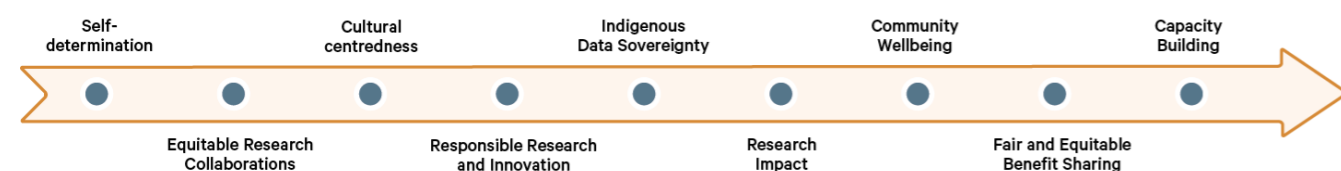


Figure 2: Research reciprocity across the research lifecycle

He Rangahau Tauutuutu

Te Kotahi Research Institute (TKRI) facilitates multidisciplinary collaborative approaches to research and innovation that enable Māori and Indigenous aspirations through transformative research and practice.

A key component of this mission ensuring impact in our communities through research reciprocity. He Rangahau Tauutuutu Research Reciprocity Framework supports our researchers to honour cultural methodologies and practices, reinforce the importance of enduring relationships built on reciprocity, and mobilise our networks for greater impact. The framework guides how we share research outputs with the communities we serve ensuring our work remains relevant, impactful, and deeply grounded in the concepts of rangahau and tauutuutu.

Rangahau/Research: is a process of seeking knowledge or investigating that is deeply grounded in tikanga Māori (Māori culture) and Te Ao Māori perspectives (Māori worldviews) incorporating a

reflective or spiritual essence. It is formed by the words ranga – to group or bring together, and hau – the essence, reflecting a research process that supports collaboration and creativity.

Tauutuutu/Reciprocity: Tauutuutu is an ongoing cycle of reciprocal exchanges that builds and strengthens relationships over time. It is a foundational ethical principle and relational ethic that emphasizes mutual exchange, balance, and responsibility not just between people, but also between humans and the entire natural/spiritual world.

The Research Reciprocity Framework recognises the importance for **rangahau** as a contributor to a greater **kaupapa** (thematic area) which in turn gives life to Māori and Indigenous aspirations for **mana motuhake** (self-determination). We can support reciprocal activity within each of these phases reinforcing the interconnectedness between community engagement, co-production, knowledge exchange, capacity & capability building, and benefit sharing all in the pursuit of self-determining futures.

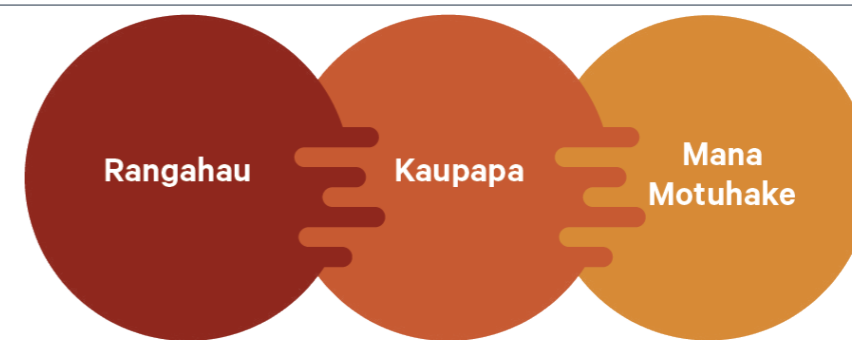


Figure 3: Rangahau >>> Kaupapa >>> Mana Motuhake

Rangahau

Rangahau is more than research; it is a powerful catalyst for transformation and collective growth. Grounded in mātauranga, tikanga, and kaupapa, it ensures that knowledge creation uplifts communities, strengthens capability, and delivers meaningful outcomes that advance the aspirations of whānau, hapū, and iwi. Rangahau is relational and reciprocal; it honours Indigenous knowledge systems, fosters genuine partnerships, and creates pathways towards mana motuhake. By embedding accountability, care, and respect into every stage of the rangahau journey, it contributes not only to academic advancement but also to the wellbeing, resilience, and self-determination of our people.

In practice, Rangahau can be community-led, marae-centred, or iwi-defined questions often reflecting long-standing critical changes that call for deeper analysis, comparative insights, and shared experiences to generate new ways of thinking or potential solutions. The central formative question, therefore, is how to effectively connect the definition of the problem with the outcomes being sought ensuring research remains relevant, ethical, and impactful across generations.

Kaupapa

Divergent thinking is fostered through a multidisciplinary approach that nurtures curiosity, challenges assumptions, and aligns cultural values with evidence-based measures. At TKRI, while we facilitate diverse approaches to rangahau, each strand

remains firmly anchored to an overarching kaupapa. Our commitment is to support both rangahau and kaupapa by creating physical and digital spaces where research is accessible to the communities we serve and meaningfully connected to related rangahau, entities, and outputs aligned with the kaupapa. Through this integration, research findings are embedded within a foundational architecture that sustains innovation and is rooted in the long-term wellbeing and aspirations of the communities we serve.

Mana Motuhake

Mana Motuhake: Our Rangahau Reciprocity Framework is designed to meaningfully advance the aspiration of mana motuhake. It affirms the authority and autonomy of iwi, hapū, Māori, and Indigenous communities to lead their own agendas and define their priorities. TKRI is positioned at the nexus where cultural knowledge, values, leadership, and integrity intersect with other knowledge systems, experiences, and evidence. Through this integration, we seek to progress the development aspirations of hapū, iwi, and Māori in ways that honour tradition while fostering innovation. While we can contribute to rangahau and support kaupapa, true mana motuhake is realised when these activities are led by Māori and Indigenous communities themselves

KEY QUESTION FOR TKRI RESEARCHERS:
How will your rangahau contribute to a greater kaupapa or create opportunities for mana motuhake?

Cultural Reciprocity

Cultural methodologies underpin our rangahau approach, centering culture, identity and lived experience as core to how knowledge is generated, interpreted, and shared.

By privileging cultural methodologies, we protect the integrity of Māori and Indigenous knowledge systems, foster authentic relationships, and generate outcomes that are both meaningful and transformative.

TKRI has built a strong national and international reputation for leading transformative research and producing impactful resources across diverse fields. Our approach focuses on the dimensions of cultural reciprocity:

- Cultural Authority - Respect for Indigenous leadership

- Cultural Alignment - Respect for Indigenous aspirations
- Cultural Integrity - Respect for Indigenous values
- Cultural Veracity - Respect for Indigenous knowledge

The concept of cultural reciprocity applied to research aims to improve both the quality of engagement, through reflexive examination of power dynamics in the context of cultural authority and cultural alignment, and the quality of outcomes, by focusing on dimensions of cultural integrity and cultural veracity.

KEY QUESTION FOR TKRI RESEARCHERS:
How does your project address the dimensions of cultural reciprocity?

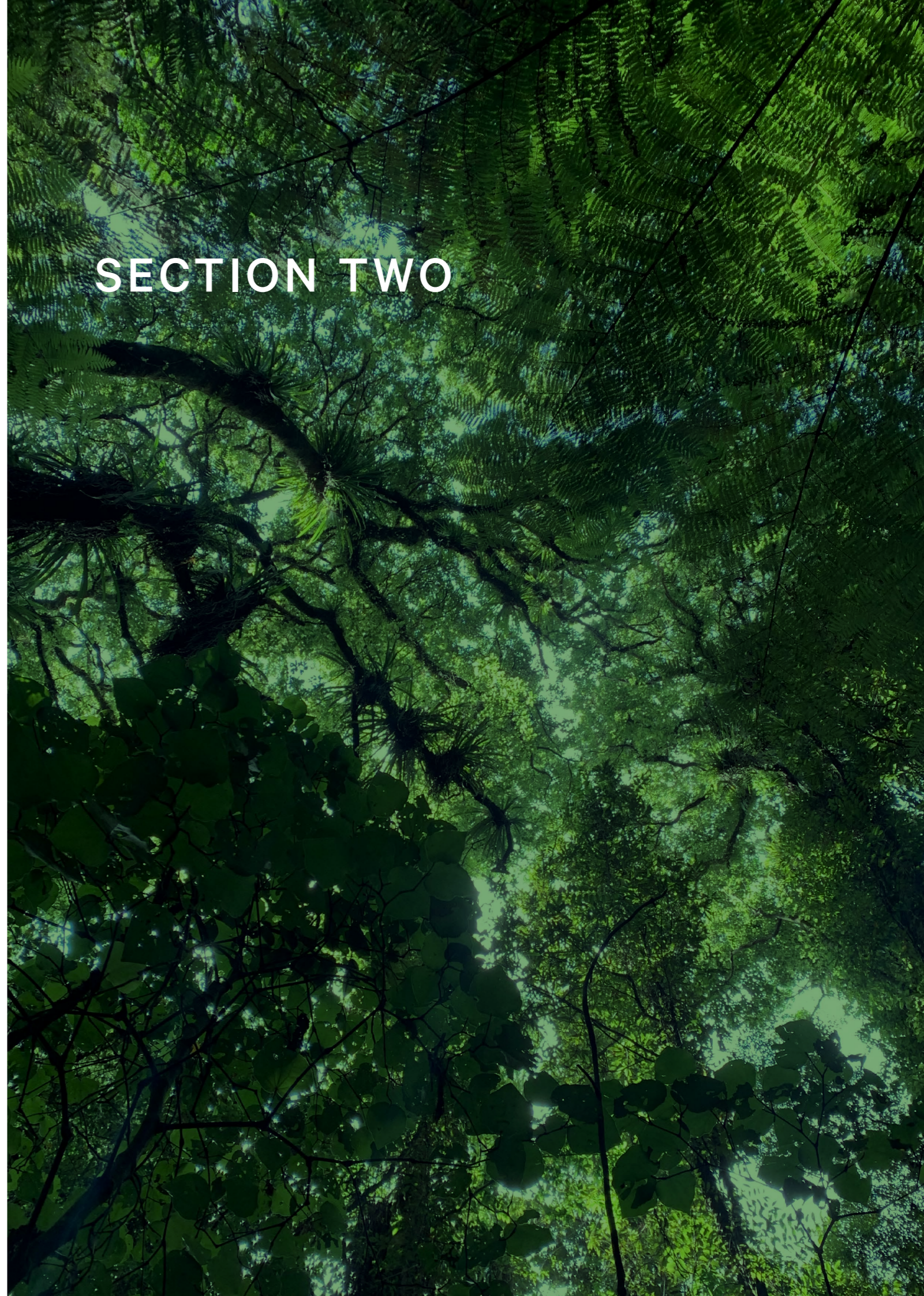


Figure 4: Cultural Reciprocity Framework

PĀTAI RESPONSE / REFLECTION

A series of horizontal dotted lines for writing a response or reflection.

SECTION TWO



Research Reciprocity through Action

Building research together - the power of reciprocity



Figure 5: Building Research Together: The Power of Reciprocity – Te Kotahi Research Institute 2025

Kia pūmau te mana o te tangata

Our partnerships reflect a commitment to empowering iwi, Māori and Indigenous communities to define, lead, and benefit from their own research, development and innovation journeys. In practice, this involves working with communities on research initiatives that align with their priorities, as well as contributing to capacity building activities and benefit sharing initiatives in areas associated with kaupapa of importance. Over time, the kaupapa can be taking over by Māori groups reinforcing Indigenous autonomy and self-determination. We can engage in a range of activities that reinforce and amplify research reciprocity along this pathway.

TKRI welcomes research partners who share our commitment to Indigenous-led outcomes and long-term transformation. As part of contracting with TKRI, we encourage partners to [contribute a portion](#) of project funding towards capacity building and advancing Indigenous priorities (e.g landback initiatives). These contributions help sustain kaupapa Māori research infrastructure, build Indigenous research capability, and ensure that innovation delivers tangible benefits for iwi, hapū, and Indigenous communities. By embedding this commitment within research partnerships, we support ethical practice, shared responsibility, and enduring impact aligned with Indigenous values and aspirations.

Core Elements of He Rangahau Tauutuutu



Figure 6: Core elements of the He Rangahau Tauutuutu Research Reciprocity Framework

Community Engagement

- *Cultivating balanced, ethical, and caring exchanges that sustain relationships over time*

Community engagement works best when it is based on building relationships that are fair, respectful, and caring, rather than just focused on one-off or transactional exchanges. The goal is to create interactions that last over time and support the well-being of everyone involved. It also helps people and communities on their journey toward mana motuhake by ensuring that engagement is not only about giving and taking but about strengthening trust and shared responsibility.

He tauira

- Te Kāhui a Kiwa <https://www.waikato.ac.nz/news-events/news/te-kahui-a-kiwa-driving-awareness-and-dialogue-on-indigenous-trade/>
- [Te Kāhui a Kiwa event recordings](#)
- [Māori AI wānanga event recordings](#)

KEY QUESTION FOR TKRI RESEARCHERS:

Who are you engaging with through the rangahau?

Knowledge Co-Production

- *Co-producing knowledge through research activities and wānanga.*

Co-production is about creating knowledge in partnership with iwi, hapū, and Indigenous communities through research activities and wānanga. This approach values shared authority and mutual

respect, ensuring that research is not done to them but with and by them. By combining academic expertise with Indigenous knowledge systems, co-production strengthens relationships, supports cultural integrity, and produces outcomes that are meaningful and beneficial for all involved.

He tauira

- He Papa Moana – Maruhia atu i te Moana o Te Whakatōhea <https://www.moanaproject.org/he-papa-results>
- [Guidelines for Governance of Data in Scholarly Publishing](#)

KEY QUESTION FOR TKRI RESEARCHERS:

Which research activities provide opportunities for co-production?

Indigenous Data Sovereignty

- *Addressing Māori rights and interests in data across the research lifecycle including issues of intellectual property.*

The relationship between researchers and Indigenous communities is often strained by histories of extraction and appropriation. However, research provides an opportunity to build relationships of respect, care, and reciprocity. Here we focus on five actions that researchers need to consider when positioning their project for greater reciprocity along the research and development pathway.

1. **Acknowledgement:** [Land acknowledgements](#) provide recognition for communities on whose

land the researcher is working. Acknowledgements can be made to Indigenous communities during formal exchanges or events.

2. **Attribution:** Is a form of acknowledgement that recognises the specific provenance of mātauranga Māori and Indigenous data from communities. [Local Contexts Labels](#) is a tool for attribution.
3. **Authorship:** Mātauranga Māori and Indigenous data are often the source for new material that attracts copyright. Researchers can engage directly with Indigenous communities and consider co-authorship. This also allows those communities to contribute to decisions about use of CC licenses.
4. **Access:** Indigenous communities often want to engage in discussions with researchers and institutions about access — both their access to collected mātauranga and/or data, and the level of accessibility that others might have to those materials.
5. **Authority:** A number of decisions are made about research materials. Providing Indigenous communities with the opportunity to contribute to those decisions or giving them authority to make decisions about future uses of that material is essential to upholding Indigenous sovereignty.



Figure 7 – Actions to recognize Indigenous rights in data

He tauira

- Local Context Traditional Knowledge Labels [TK Labels – Local Contexts](#)
- Local Context Biocultural Labels [BC Labels – Local Contexts](#)

KEY QUESTION FOR TKRI RESEARCHERS:

How are issues of Indigenous data sovereignty being addressed within your research?

Capacity and Capability Building

- *Fostering skills, leadership, and infrastructure within iwi, Māori, and Indigenous communities to enable long-term development and advance mana motuhake.*

Capacity building is about strengthening the ability of iwi, hapū, Māori, and Indigenous communities to lead and sustain their own development. This includes fostering practical skills, growing leadership capability, and building the infrastructure needed for long-term success. It is not just about providing resources—it is about creating opportunities for communities to exercise authority, make decisions, and shape their own futures. At its heart, capacity building supports mana motuhake and is grounded in ethical, respectful, and caring relationships. By working in partnership, this approach ensures that development is culturally aligned, community-driven, and sustainable over time.

He tauira

- [SING Aotearoa](#) - Summer Internship for Indigenous people in Genomics
- [Indigidata Aotearoa](#)

KEY QUESTION FOR TKRI RESEARCHERS:

How will your project build capacity and capability in communities?

Knowledge Exchange

- *Cultivating reciprocal learning partnerships that honour, elevate, and sustain Indigenous knowledge systems, ensuring mutual respect and shared growth*

Knowledge exchange is about creating strong, two-way learning partnerships between researchers and iwi, hapū, and Indigenous communities. It goes beyond sharing information—it is about building trust, respect, and understanding so that both academic and Indigenous knowledge systems are valued equally. This approach ensures that Indigenous ways of knowing are not only acknowledged but actively elevated and sustained. Through wānanga and other collaborative processes, knowledge exchange creates opportunities for mutual learning, shared decision-making, and collective growth. It strengthens relationships, supports cultural integrity, and produces research outcomes that are meaningful and relevant for all involved.

He tauira

- [He Tohu Arahi Guidelines](#) TKRI-IP-Guidelines-29-July-2024-Interactive.pdf
- [Te-Nohonga-Kaitiaki-Guidelines-for-genomic-research-on-taonga-species-with-background.pdf](#)

KEY QUESTION FOR TKRI RESEARCHERS:

What pathways support knowledge exchange in your rangahau?

Infrastructure support

- *Supporting the establishment of community led research platforms*

Infrastructure support focuses on enabling iwi, hapū, Māori, and Indigenous communities to establish and lead their own research platforms. This includes creating systems, tools, and spaces that allow communities to manage research processes, store and protect data, and uphold cultural values and protocols. By investing in community-led infrastructure, this approach strengthens autonomy, supports IDSoV, and ensures research is grounded in local priorities and aspirations.

He tauira

- [Whāki Webinar Series :: University of Waikato](#)
- IEEE Recommended Practice for Provenance of Indigenous Peoples' Data <https://standards.ieee.org/ieee/2890/10318/>
- [Te Mana Raraunga](#)

KEY QUESTION FOR TKRI RESEARCHERS:

Are there opportunities for infrastructure development in your rangahau?

Benefit Sharing

- *Ensuring research outcomes are accessible, meaningful, and directly contribute to the wellbeing, aspirations, and mana motuhake of the communities we serve, reinforcing transparency and accountability.*

As Māori communities engage in research and innovation, protecting Cultural Intellectual Property (CIP) becomes increasingly important. Despite the growing use of mātauranga Māori in research, both domestic and international IP laws fail to adequately recognize Māori rights and interests. Mātauranga Māori is deeply connected to whakapapa and collective identity, making relationship-building essential in research partnerships. TKRI has developed He Tohu Ārahi, Guidelines for Protecting Cultural Intellectual Property in Research and Innovation. These guidelines and more resources can be found [here](#).

He tauira

- [Benefit Sharing Compass Game](#)
- [Benefit sharing resource kete](#) on TKRI website
- Kiingitanga Day Presentation on equitable [Benefit Sharing link](#)

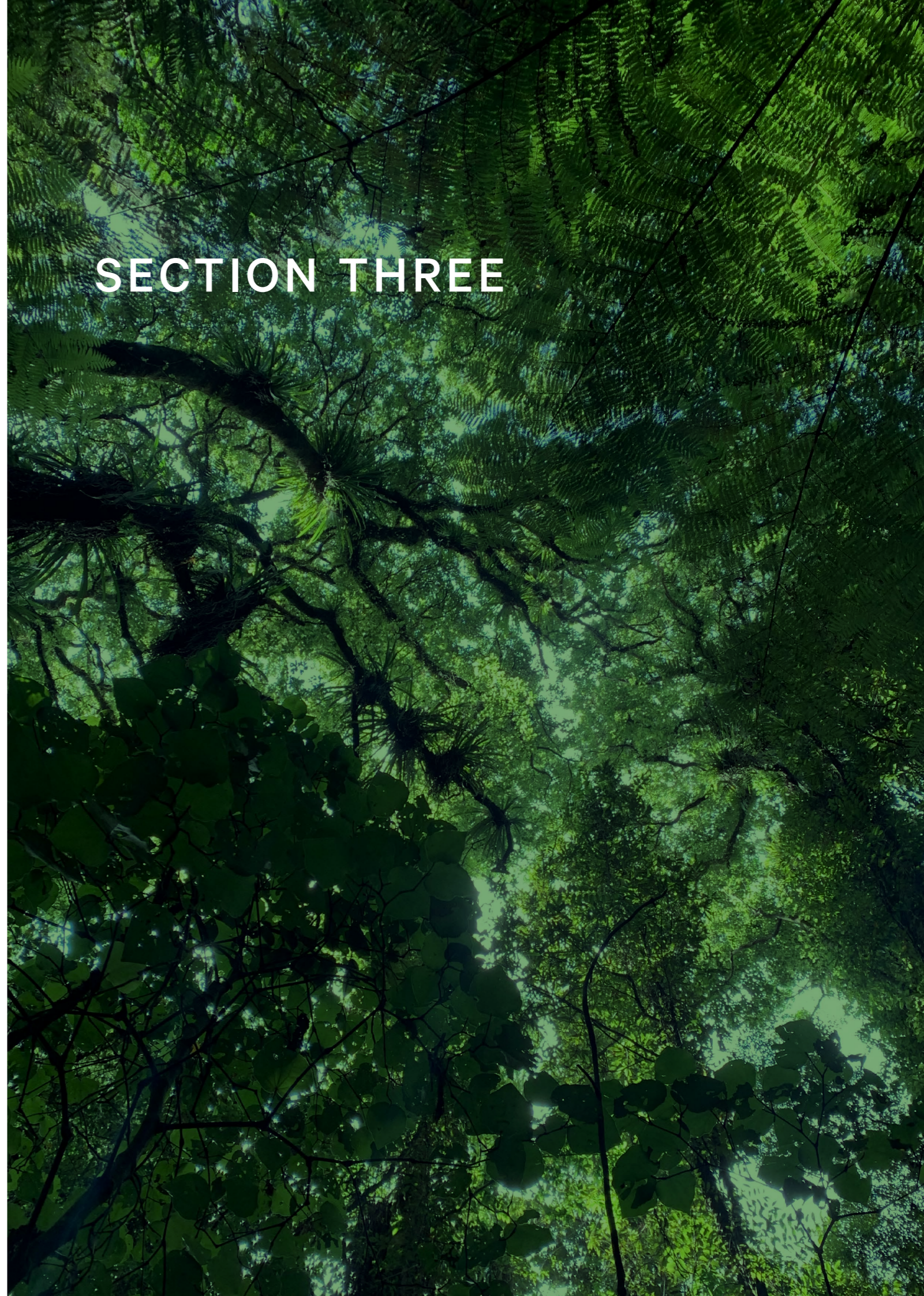
KEY QUESTION FOR TKRI RESEARCHERS:

How is benefit sharing being addressed within the rangahau?

PĀTAI RESPONSE / REFLECTION

A series of horizontal dotted lines for writing a response or reflection.

SECTION THREE



Research Reciprocity through Impact

Research with Impact

For research to have a real-world effect, how we share our findings is just as vital as the research itself.



Figure 8: Research with Impact - Te Kotahi Research Institute 2025

Kia tau te wairua o te tangata

A core component of TKRI’s impact lies in creating rangahau outputs that are tailored to the specific needs of key stakeholders and communities. While research often has a primary academic focus, rangahau outputs must also be designed for iwi / Māori / Indigenous communities, funders, or policy makers and networks to ensure relevance and utility across diverse contexts.

An important part of rangahau reciprocity is identifying and resourcing these outputs at the beginning of each project. Planning for outputs early ensures that they uphold cultural integrity, meet reporting requirements, and maximise engagement. This flexibility allows our rangahau to respond meaningfully to kaupapa, connect

effectively with key audiences, and create the intended impact for Māori and Indigenous communities.

Equally important are the methods used to disseminate these outputs. Communication must be deliberate and accessible; if communities cannot access or understand the information, the intended impact of our mahi is not fully realised. Outputs and dissemination strategies must therefore be designed to ensure broad utility and meaningful engagement with rights holders, stakeholders, and interested parties.

The diagram opposite positions Rangahau Outputs at the centre of a dynamic system, illustrating how research outcomes are interconnected with multiple stakeholders and sectors. Four key domains radiate outward:

Key Audiences for TKRI Research outputs

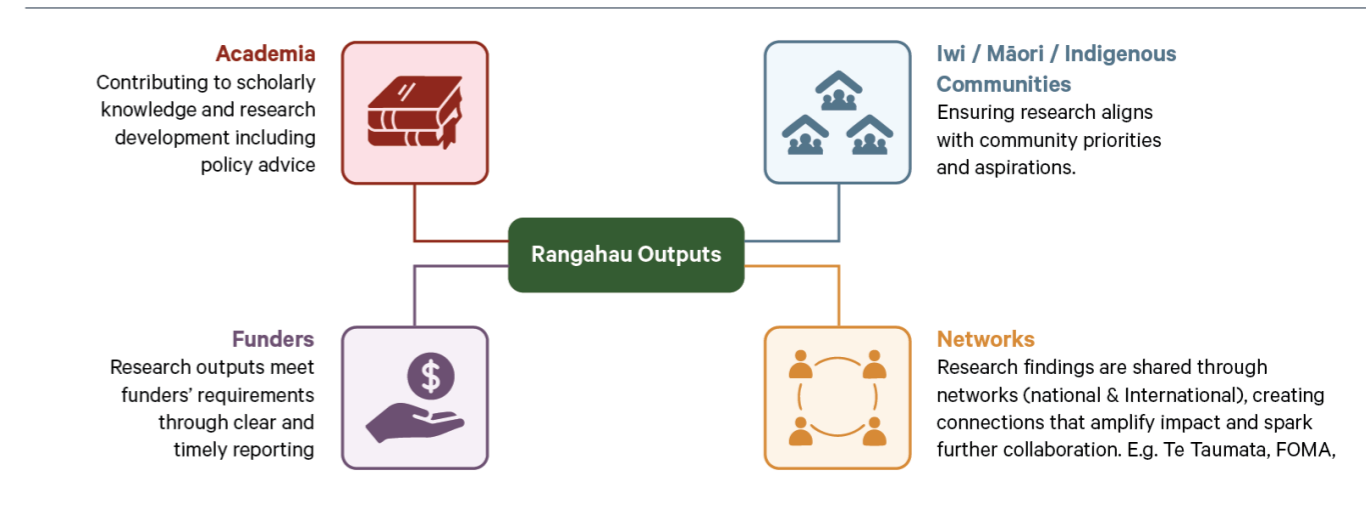


Figure 9: Key audiences for research outputs

Iwi/Māori Indigenous Communities

- Aligning research with community aspirations, priorities, and cultural values. This relationship emphasises reciprocity and ensures outcomes are relevant and beneficial.

Academia

- Contributing to scholarly knowledge, publications, and wider discourse. This connection maintains rigor and credibility while informing policy development

Funders

- Enabling research activities by shaping priorities and allocating resources. Engagement is essential for sustainability, and outputs must meet funders’ requirements through clear, timely reporting.

Networks

- Collaborative structures at national and international

levels (e.g., Te Taumata, Federation of Māori Authorities (FOMA), Te Mana Raraunga (Māori Data Sovereignty Network), Mahi Maioro, Kanapū, Te Maea, SING, Indigidata, Global Indigenous Data Alliance, Local Contexts, Center for Braiding Indigenous Knowledges and Science) that facilitate partnerships, knowledge exchange, and policy advocacy. Sharing findings through these networks amplifies impact and sparks further collaboration.

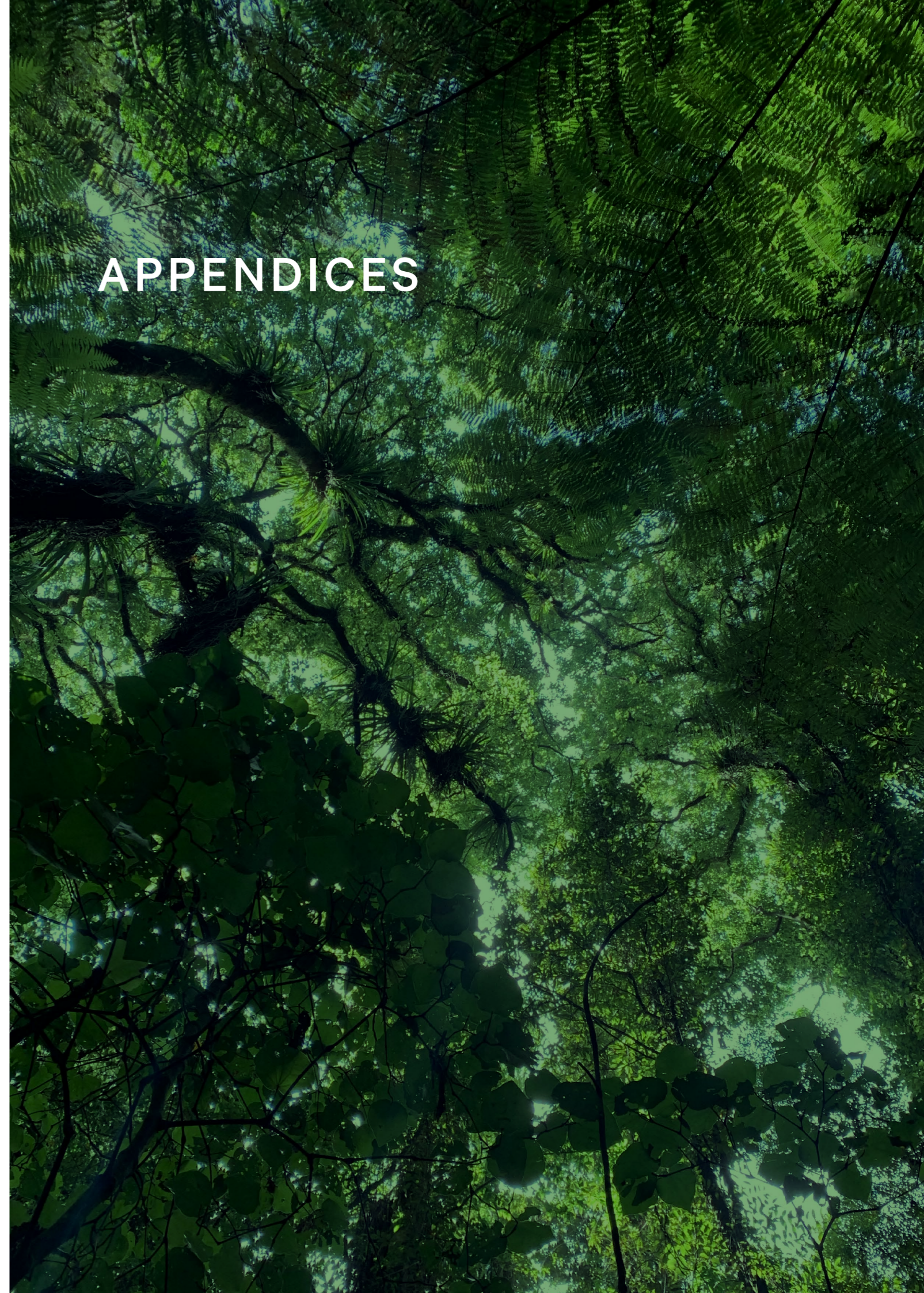
This interconnected approach ensures that research outputs are robust, relational, and responsive, supporting long-term wellbeing and development aspirations. All TKRI projects should plan project budgets to ensure delivery of outputs to key stakeholders. The table below provides indicative costs for different outputs based on our prior experience.

Table 1: Designing for Research Outputs

Project outputs and Projected Cost		Stakeholders / Audience			
Outputs	Cost	Indigenous Communities	Academia	Funders	Networks
Visual Overview (1 page)	\$3 - \$5k	Primary	Secondary	Secondary	Both
Information Sheets (2 page overview of project summary and outputs)	\$3 - \$5k	Primary	Secondary	Secondary	Primary
Guidelines ¹	Guidelines \$8-\$12k (100 copies)	Secondary	Primary	Primary	Secondary
Report	Design and print \$3k	Secondary	Primary	Primary	Both
Academic paper to be published	\$1.5 - 5k (journal dependent)	Secondary	Primary	Secondary	Both
Funders report ²	\$1 - \$2k	Secondary	Secondary	Primary	Secondary
Website design and development	\$8-10k	Secondary	Primary	Secondary	Both
Serious game development	\$45k Stage 1 conceptualisation \$60k Stage 2 contextualisation	Both	Primary	Both	Primary
Webinar	\$30pp koha \$1kpa	Both	Primary	Secondary	Primary
Digital storytelling	\$5-10k	Both	Both	Secondary	Both
Media releases	\$2k	Both	Primary	Primary	Both
Podcast	\$5-7k	Both	Primary	Secondary	Primary
Hui (half-day, 15 people)	\$2k	Both	Primary	Secondary	Both
Wānanga/Workshop/Community event (1 day, 30 people)	\$7-\$10k	Primary	Both	Secondary	Primary
Capacity building programme (5 day, 25 people)	\$35-55k	Primary	Secondary	Secondary	Primary
Summit (2 day, 200 people)	\$150k	Both	Both	Secondary	Primary

¹ The output may consist of either guidelines or a report, and not necessarily both. Therefore, the budget requirements should reflect that only one of these may be produced

² The main report and the funder's report may be combined into a single document.



Appendix 1

Ngā Pātai: Research Reciprocity Questionnaire

1. How will your rangahau contribute to a greater kaupapa or create opportunities for mana motuhake?
2. Who are you engaging with through the rangahau?
3. Which research activities provide opportunities for co-production?
4. How will your project build capacity and capability in communities?
5. What pathways support knowledge exchange in your rangahau?
6. Are there opportunities for infrastructure development in your rangahau?
7. How is benefit sharing being addressed within the rangahau?

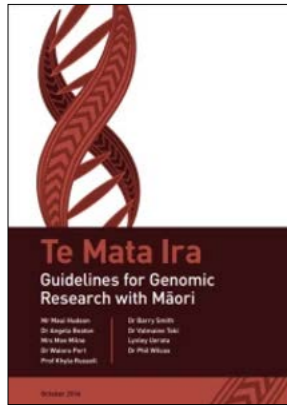
Appendix 2

Ngā Taura: Examples of Research Reciprocity

- Community engagement outputs
 - Te Kāhui a Kiwa – <https://www.waikato.ac.nz/news-events/news/te-kahui-a-kiwa-driving-awareness-and-dialogue-on-indigenous-trade/>
 - [Te Kāhui a Kiwa event recordings](#)
 - [Māori AI wānanga event recordings](#)
- Knowledge co-production outputs
 - He Papa Moana - Maruhia atu i te Moana o Te Whakatōhea <https://www.moanaproject.org/he-papa-results>
 - Guidelines for Governance of Data in Scholarly Publishing - <https://indigenoustalab.org/2024/11/27/publishing-guidelines-for-the-governance-of-indigenous-data/>
- Indigenous data sovereignty
- Local Context Traditional Knowledge Labels [TK Labels – Local Contexts](#)
- Local Context Biocultural Labels [BC Labels – Local Contexts](#)
- Capacity building outputs
 - Summer Internship for Indigenous People in Genomics SING [news article](#) and website <https://www.singaoteaoroa.nz/>
 - Indigidata Aotearoa <https://www.indigidataaotearoa.com/>
- Knowledge exchange outputs
 - He Tohu Arahi Guidelines [TKRI-IP-Guidelines-29-July-2024-Interactive.pdf](#)
 - Te Nohonga Kaitiaki Guidelines [Te-Nohonga-Kaitiaki-Guidelines-for-genomic-research-on-taonga-species-with-background.pdf](#)
- Infrastructure support outputs
 - Whāki webinar series - [Whāki Webinar Series :: University of Waikato](#)
 - IEEE Recommended Practice for Provenance of Indigenous Peoples' Data <https://standards.ieee.org/ieee/2890/10318/>
 - Te Mana Raraunga - [Te Mana Raraunga](#)
- Benefit Sharing outputs
 - Kiingitanga Day Presentation [Benefit Sharing link](#)

Appendix 3 Ngā Kōrero: Research Impact Stories

Example 1: Te Mata Ira



Te Mata Ira Research Project hosted by TKRI (rangahau) initiated focused on Māori views on genomics and biobanking. It led to the development of the Te Mata Ira Guidelines for Genomic Research with Māori, and the He Tangata Kei Tua Guidelines for Biobanking with Māori.

The project also contributed to the development of the [SING Aotearoa](#) Capacity Building Programme. SING Aotearoa has run for several years (kaupapa) creating opportunities for knowledge exchange between the research community and community and academic interns. As part of the programme, interns created a network of interested members supported by the programme into alumni

scholarships to relevant conferences and opportunities, potential academic scholarships and positions. Programme was supported by external partners including Genomics Aotearoa) before it became the responsibility of Ira Tatai Whakaheke, an independent Māori Trust (mana motuhake).

Example 2: Tikanga in Technology

The Tikanga in Technology (TinT) research project hosted by TKRI (rangahau) developed the Whāki Webinar Series and Indigidata Aotearoa capacity building programme (kaupapa) before both transitioned to become the responsibility of Te Mana Raraunga - Māori Data Sovereignty Network (mana motuhake).

Figure 8: Indigidata Aotearoa participants 2023
Foundational frameworks and tools were developed through wānanga with community and networks (Te Mana Raraunga, Kāhui Māori) such as the Māori Data Privacy Framework and the Māori Algorithmic Sovereignty (MASov) framework (rangahau), were

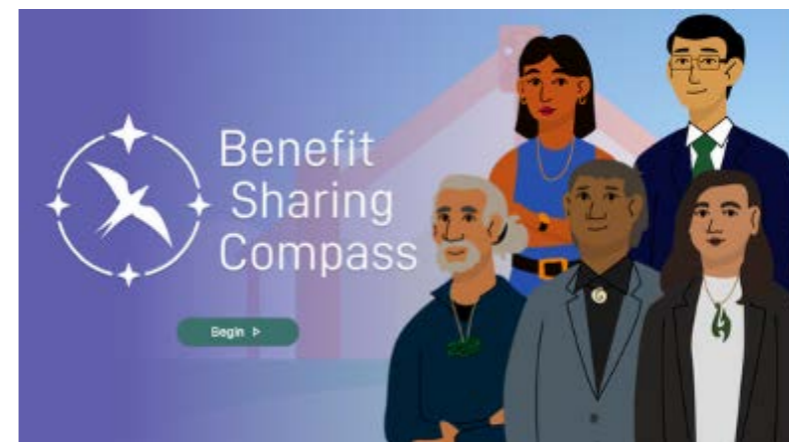
developed for use by government agencies, researchers, and industry in Aotearoa and internationally and they have influenced policy (eg New Zealand privacy and biometrics regulation for the Office of the Privacy Commissioner). Further advocacy underpinned by the project and the CARE Principles contributed to the establishment of the [IEEE Std 2890™-2025 Recommended Practice for Provenance of Indigenous Peoples' Data](#). An exemplar of Indigenous authority over their own data enabled by enhanced Indigenous data infrastructure for Indigenous data sovereignty exemplars arising from TinT activities was shared in this [Local Contexts Story](#) – Te Roroa Biocultural Labels and Taoho Patuawa webinar: <https://localcontexts.org/bc-label-webinar/> (mana motuhake). Practical technologies were also produced such as AI tools for provenance recognition, and culturally grounded digital and AI prototypes such as whānau data repositories and te reo Māori text-to-speech. This knowledge was shared with community at a summit – Te Ara Raraunga.

Example 3: Benefit Sharing

National Science Challenge Funded Science for Technological Innovation (SfTI) Impact Related Activities project investigated benefit sharing arising from biodiscovery. The resulting rangahau outputs focussed on enabling mana motuhake through knowledge exchange, community engagement, benefit sharing – guidelines (He Tohu Arahi), the Approaches to Benefit-Sharing Summit, and the Benefit Sharing Compass game. Advocacy and policy engagement arose from the rangahau considered by national and international players, including the Biodiscovery Act and global biodiversity governance through the Convention on Biological Diversity's Digital Sequence Information negotiations, contributing to the establishment of the Cali Fund for Indigenous benefit sharing.



Figure 10: Indigidata Aotearoa participants 2023



Appendix 4 Cultural Reciprocity Framework - Planning Template

Project:		
Dimensions & Attributes	Rating Y/N/M/NA	Description
CULTURAL AUTHORITY		
Project Governance		
Resource Governance		
Data Governance		
Rules & Process Definition		
CULTURAL ALIGNMENT		
Project Purpose		
Indigenous Roles		
Indigenous Development		
Indigenous Capacity Building		
CULTURAL INTEGRITY		
Community Engagement		
Indigenous Ethics		
Data Access & Use		
Recognition		
CULTURAL VERACITY		
Provenance		
Context		
Indigenous Logics and Language		
Indigenous Review		

Appendix 5 Cultural Reciprocity Framework - Summary

Authority Attributes	Description - Respects Indigenous Authority
Project Governance	Indigenous groups are actively involved in setting the agenda and directing the project through governance and decision-making roles. Indigenous led, Indigenous directed, researcher directed, or researcher led.
Resource Governance	Indigenous groups are supported into positions that enable Indigenous control of Indigenous resources.
Data Governance	Indigenous groups are actively involved in decisions about use of Indigenous knowledge and Indigenous data, have formal roles in data governance, reflect CARE principles for indigenous data governance.
Rules & Process Definition	Indigenous groups have the authority to define the parameters of the project including rules of engagement and operational processes.
Alignment Attributes	Description - Respects Indigenous Aspirations
Project Purpose	Project is led by Indigenous aspirations with clearly stated aims.
Indigenous Roles	Project is clear about the roles of Indigenous members in governance and operations.
Indigenous Development	Project is clear about how it contributes to Indigenous outcomes and development needs.
Indigenous Capacity Building	Project builds capacity of Indigenous participants and/or Indigenous institutions.
Integrity Attributes	Description - Respects Indigenous Values
Community Engagement	Ensures appropriate participation Indigenous community members and Indigenous knowledge holders in research activities.
Indigenous Ethics	Respects cultural protocols that enable culturally appropriate research practices and use of Indigenous methods.
Data Access & Use	Develops protocols that respect individual and collective privacy and ensure Indigenous knowledge and data are managed with appropriate care including who has the right to access and use IK and how issues of Indigenous data sovereignty and intellectual property will be addressed.
Recognition	Respects protocols that support appropriate acknowledgement, attribution, and authorship of Indigenous participants.
Veracity Attributes	Description - Respects Indigenous Knowledge
Provenance	Indigenous knowledge is gathered from the correct sources and the project is transparent about this and provides appropriate acknowledgement on outputs and in public settings.
Context	Indigenous knowledge is used in the right context for the right reason and is identified, analysed and interpreted in an appropriate manner.
Indigenous Logics and Language	Project outputs make appropriate use of cultural logics, cultural cues and indigenous language when reporting findings and engaging in knowledge exchange activities.
Indigenous Review	Project outputs have been sense-checked by Indigenous communities and the messages and language are appropriate.

Appendix 6

Glossary

Word / acronym / abbreviation / te reo Māori	Full description / translation
CC licenses	Creative Commons Licenses
FOMA	Federation of Māori Authority
Hapū	Subtribe
hau	the essence, reflecting a research process that supports collaboration and creativity
Iwi	Tribe
Kaupapa	Thematic area
Koha	Gift / contribution
Mana motuhake	Self-determination
Māori	Indigenous people of New Zealand
Marae	Open area and complex of buildings used by Māori for formal exchanges
Mātauranga	Knowledge
Mātauranga Māori	Māori knowledge
Pātai	Question
Ranga	to group or bring together
Rangahau	Research
Tauira	Example
Tauutuutu	Reciprocity
Te Ao Māori	Māori worldview
Te Taumata	Te Taumata is a charitable trust that provides an authentic voice for Māori on trade between New Zealand and the rest of the world
Tikanga Māori	Māori culture
Wānanga	Forum, discussion
Whānau	Family

DOI: <https://doi.org/10.15663/210920.6511>

