Te Kotahi
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Understanding Māori Rights and Interests in Intellectual Property arising from Research and Innovation

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Introduction

In the age of big data, data itself has become the raw material of production and a new source of immense social and economic value.[1] Big data has provided means for a wider knowledge of life and society. Access and use of big data has been made possible by advances in data mining and analytics along with the increase in computing power and data storage capacity.[2] The use of mining and storage of big data for corporate and governmental use has been growing at a phenomenal rate.[3]

The knowledge economy that is underpinned by production and services based on knowledge-intensive activities,[4] has been growing in influence on the economy overall, and is being encouraged in the latest Government Strategy.[5] Research and innovation are key drivers in the strengthening of the knowledge economy supporting growth and development while also adding value to society. However, in the push for the knowledge economy, there are issues of addressing equity and ensuring Treaty partnerships and provided for.

Alongside the knowledge economy, there has been a growing discourse on Māori data sovereignty and Indigenous data sovereignty. These discourses have been highlighting the need for greater Māori control over Māori data. Māori data comes in many forms including Mātauranga Māori, taonga species and administrative data. Te Mana Raraunga has been developing principles to enable Māori data sovereignty (MDSov)[6] and produced an audit tool to aid in the evaluation process.[7] Alongside Te Mana Raraunga, Te Kāhui Raraunga established as an advocacy group of the Data Iwi Leaders Group.[8]

The growth of the knowledge economy has led to questions as to what protections Māori have in the intellectual property (IP) of Aotearoa New Zealand. Many of the concerns were articulated in the report: *Ko Aotearoa tēnei: a report into claims concerning New Zealand law and policy affecting Māori culture and identity* (Volumes 1 and 2), 2011 (WAI262).[9] The issues identified in the report have become more prominent recently as government has finally looked to address them.[10]

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[1] Omer Tene and Jules Polonetsky "Big Data for All: Privacy and User Control in the Age of Analytics" (2012–2013) 11 Nw J Tech & Intell Prop [xxvii] at 239.
[2] At 239.
[3] At 239.
[4] Walter W Powell and Kaisa Snellman "The Knowledge Economy" (2004) 30 Annual Review of Sociology 199.
[5] Ministry of Business, Innovation, and Employment *From the Knowledge Wave to the Digital Age: Mai I Te Ao Mātauranga Ki Te Ao Matihiko Nei* (2019).
[6] "Te Mana Raraunga" Te Mana Raraunga <www.temanararaunga.maori.nz>.
[7] *Māori Data Audit Tool* (Te Mana Raraunga: Māori Data Sovereignty Network, 2016), <https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5ebbc/t/59152b7db8a79bdb0e64424a/1494559615337/M%C4%81ori+Data+Audit+Tool.pdf>.
[8] "Kāinga I Home" (2020) Te Kahui Raraunga <www.kahuiraraunga.io>.
[9] Waitangi Tribunal *Ko Aotearoa tēnei: a report into claims concerning New Zealand law and policy affecting Māori culture and identity* (WAI 262 Volume 1 Legislation Direct 2011); Waitangi Tribunal *Ko Aotearoa tēnei: a report into claims concerning New Zealand law and policy affecting Māori culture and identity* (WAI 262 Volume 2 Legislation Direct 2011).
[10] "Te Pae Tawhiti: Wai 262" (31 March 2021) <https://tpk.govt.nz>.

This project was jointly funded by Genomics Aotearoa and the National Science Challenge Science for Technological Innovation. It focused on how the IP system of Aotearoa New Zealand, might protect Māori rights and interests in knowledge and data. The project had two components. First, a literature review on national legislation and international agreements that comprise New Zealand's Intellectual Property Rights regime. The review investigated how these protect and enable Māori IP rights and interests with respect to Māori data, genomic data and Mātauranga Māori. Second, a survey targeting research institutions explored whether IP policies are in place to protect Māori data, and in particular, data involved in research and innovation processes.

This report provides a summary of the literature review and the findings of the survey. The aim is to assist institutions on their journey to develop policies that protect Māori rights regarding their knowledge and data and ensure equitable benefit-sharing through the innovation processes.

Overview of the Literature

A literature review[11] was completed with a focus on how the IP system in New Zealand protects Mātauranga Māori, Māori data, and Taonga species (genetic resources). It was particularly interested in how this reflected through the innovation processes. It contextualised the WAI262 report of 2011. The aim was to evaluate the IP system in relation to Māori data sovereignty and governance and what is required for ethical use of Māori knowledge and data.

The IP system of New Zealand was a continuation from the Westminster British system. Both systems have mechanisms to protect innovation and property rights of those who create and own the works.[12] The broad term 'intellectual property' (IP) refers to a group of exclusive rights which protect specific creations of the human mind [including everything from an inventive activity that has industrial or commercial application, to a work of art or literature, a symbol, or a design].[13] The IP rights relate not to the physical machine, painting, book, or logo but confer certain privileges over "aspects of the ideas, expressions, knowledge, or information contained in these things."[14] It provides ownership, irrespective of where it has derivatives from, in the "exclusive right to use, possess, and dispose of property..." that has economic value.[15] The value comes in ownership of the 'property rights' and the creator or inventor does not necessarily gain from the value.[16] The rights and interests deriving from IP are often time-limited such as patents and copyrights. This approach to IP has created a shift in the balance of power between individual and community.[17]

In New Zealand, the IP law system centres around several pieces of legislation including the *Trade Marks Act Trade Marks Act 2002, Patents Act 2013, Copyright Act 1994, The Designs Act 1953, the Geographical Indicators (Wine and Spirits) Registration Act 2006, and the Plant Variety Rights (PVR) Act 1987*. Each of them is enacted to protected particular elements of creativity and innovation.

Table 1 below indicates the main IP legislation and their provisions to protect Māori rights and interests. It also indicates what changes are in progress and/or potential improvements.

[11] Rogena Sterling, KatieLee Riddle, Robert Brooks and Maui Hudson *Intellectual Property, Mātauranga Māori, and Māori Data: Report prepared for Science for Technological Innovation National Science Challenge & Genomics Aotearoa* (Te Kotahi Research Institute (TKRI), the University of Waikato: Kirikiriroa, Aotearoa New Zealand, May 2021).
[12] Frank D Prager "A History of Intellectual Property from 1545 to 1787" (1944) 26 J Pat Off Soc'y 711.
[13] Waitangi Tribunal, above n 9, at 48.
[14] At 48.
[15] Brian Garrity "Conflict between Maori and Western Concepts of Intellectual Property" (1996–1999) 8 Auckland U L Rev 1193.
[16] Waitangi Tribunal, above n 9, at 49.
[17] At 47.

TABLE 1: IP Legislation, Māori Provisions, and Suggested Changes

Act	Applications	Maori Provisions	Suggested Changes or Changes in the Pipeline
Copyright Act 1994	Protects artistic and literary work from unauthorised copying, as owner enjoys its full rights and privileges	No provision for Maori interests or the Treaty of Waitangi	Currently under review. Should incorporate WAI 262 recommendations
Patents Act 2013	Grants exclusive rights to exploit the invention and authorise others to use it	Provides for a Māori Advisory Committee (MAC) to consider patents, decisions not binding	Reform to account for Maori concerns, and ensure the MAC is made of experts and their decisions are binding
Trade Marks Act 2002 and The Designs Act 1953	Protects brand names and logos used on goods and services.	Provides for a MAC to consider trademarks, and consider whether they are likely to be offensive to Māori. Decisions not binding	Definition of offensive to Māori should be provided, MAC needs broaden mandate and binding decisions
Toi Iho	Trademark for Maori artworks, wide scope for qualification.	Does not protect the kaitiaki interest in taonga works	Artists' personal brands should be utilised, and remove need to submit for appraisal.
Geographic Indicators	Geographic Indicators (GI) are signs used on products that originate from a particular location. This is usually for the qualities and reputation the location's products have.	Provides for a MAC to consider use of GI, and consider whether they are likely to be offensive to Māori. Decisions not binding	Definition of offensive to Māori should be provided, MAC needs broader mandate and binding decisions. More heed given to kaitiaki relationships needed
Plant Variety Rights Act	Grants the exclusive right to produce for sale and to sell propagating material of the variety.	In respect of the CPTPP[18] obligations, New Zealand has the right to adopt any measures that it deems necessary to protect indigenous plant species in fulfilment of its obligations under the Treaty of Waitangi.	MBIE currently reviewing law to comply with CPTPP
Trade Secret	Protection of proprietary information against unauthorized commercial use by others. Found in contract law and enforced by the Crimes Act 1961.	No provision for Māori interests or the Treaty of Waitangi.	Legislation governing trade secrets should be formed with specific provision for Māori.

[18] CPTTP is The Comprehensive and Progressive Agreement for Trans-Pacific Partnership .

While the changes outline above do provide some protection against misappropriation they can only be actioned if the user is attempting to apply for IP protection in the first place. There is a growing awareness amongst Māori that "the current western intellectual property system fails to take account of their needs."[19] The IP system of Copyrights, Patents and Trade Marks is based on assigning property ownership and protections are time-limited. Both of these characteristics have been challenged as providing insufficient protection for mātauranga Māori and taonga species.

In contrast to Westminster IP law, kaitiakitanga is a responsibility towards the resources bestowed on the kin group.[20] Assertions of cultural intellectual property rights are less about material and economic gain or securing exclusive rights to a limited number of biological resources. Instead, they mark out boundaries around their social, cultural, and symbolic practices to limit misappropriation and prevent their commercialization by non-Maori. [21]

Māori expectations of protection for Mātauranga Māori and Māori data extend beyond the parameters of existing IP law. The WAI262 report clearly outlined Māori rights and interests and these are supported by and upheld through international conventions.[22] These international conventions clearly state the importance of Indigenous peoples sharing in the benefits of their resources and cultural heritage which extends to knowledge and data. Indigenous peoples globally have deep spiritual and cultural links to traditional lands and waters and have spiritual obligations to their people, place, and world under their traditional laws.[23] Despite the support of international conventions there is often limited recognition of these rights or acceptance of biocultural protocols including respect for their diversity of ecosystem management practices, customary laws and traditional authority.[24]

The WAI262 report outlined a range of areas where Māori rights and interests ought to be considered and made a number of recommendations about how the protections around Māori cultural IP might be enhanced. These are summarized in Table 2 below.

[19] Susan Young "The Patentability of Maori Traditional Medicine and the Morality Exclusion in the Patents Act 1953" (2001) 32 Victoria U Wellington L Rev 255 at 256.
[20] Waitangi Tribunal, above n 9, at 48.
[21] Toon van Meijl "Maori Intellectual Property Rights and the Formation of Ethnic Boundaries" (2009) 16 IJCP 341 at 343.
[22] Convention of Biological Diversity, (signed 5 June 1992, entered into force 29 December 1993); The Nagoya Protocol on Access and Benefit-sharing, (signed 29 October 2010, entered into force 12 October 2014); United Nations Declaration on the Rights of Indigenous Peoples, GA Res 61/295 (adopted 13 September 2007, signed 13 September 2007, entered into force 13 September 2007).
[23] Bradford W Morse "Indigenous human rights and knowledge in archives, museums, and libraries: some international perspectives with specific reference to New Zealand and Canada" (2012) 12 Archival Science 113 at 114.
[24] Harry Jonas, Kabir Bavikatte and Holly Shrumm "Community Protocols and Access and Benefit Sharing" (2010) 12 Asian Biotechnology and Development Review 49 at 69.

TABLE 2: Recommendations from the WAI262 Report

Kaitiaki Relationships	• Entitled to reasonable degree of protection; • In exceptional cases, may claim interest in living specimens of taonga species; • Interest does not amount to ownership of resources; • Valid rights for mātauranga Māori (MM) associated with taonga species (TS), but not exclusive; • Commercial exploitation of MM must give proper recognition and reasonable degree of control; • Consent, disclosure or consultation required on case by case basis; • Should enshrine relationship protection in law; • Must balance relationship with other interest holders; and • Amend s5 HSNO Act to require recognition and provision for kaitiaki and TS relationship.
Bioprospecting	• DOC should develop bioprospecting regime in line with existing barriers; • Joint decision-making between DOC and the pātaka komiti, with the latter's role expanded to participate in decision making; and • No compulsory requirement for access and benefit sharing.
Genetic Modification	• Methodology order to be bought in line with HSNO Act 1996 • No automatic privilege to physical risks; • Ngā Kaihautū Tikanga Taiao maintain advisory role, but also appoint at least two members to the Authority itself; and • Ngā Kaihautū to give advice when it considers an application to be relevant to Māori interests.
Intellectual Property	• Measures enacted to protect kaitiaki relationship with TS and MM; • MM to be a key consideration for patent applications; • Establish Patents MAC to advise on presence of MM or TS and consistency with tikanga Māori and kaitiaki relationships; • Kaitiaki ability to formally notify interest in species or MM through registration; • Kaitiaki right to object to patent application even if interest not registered; and • Patent application public disclosure requirement for MM or taonga species contribution. Failure to disclose has range of outcomes on case by case basis.
Plant Varieties Rights	• cultural relationship between kaitiaki and taonga species is entitled to reasonable protection; • new PVR legislation also include a power to refuse a PVR if it would affect kaitiaki relationships with taonga species; and • Establish PVR MAC to assist commissioner.
Overall	• Enable MACs to assist in the preparation of adequate ethical guidelines and codes of conduct relevant to their field for use by those in research and development; • Broad advisory function including regarding tikanga Māori and location and engagement with kaitiaki; and • Educational facilities to assist in preparation of guidelines and codes.

It is clear that the existing IP system in Aotearoa/New Zealand cannot meet the full range of expectations that Māori have for the protection of their mātauranga, cultural heritage, taonga, and genetic resources. The tikanga-based system of protections grounded in traditional approaches of communally held ancestral knowledge (mātauranga), passed down

through generations (whakapapa), based on guardianship and responsibility (kaitiakitanga), supported the self-determination of use of knowledge (rangatiratanga).[25] Attempting to align tikanga concepts to the Westminster model of law is challenging as the two share completely different approaches of ownership and responsibility.

The emerging discourse of Māori data sovereignty cuts across these deep-rooted debates around the conflict between Māori and Western concepts of intellectual property. The increasing focus on data rights in our increasingly digitised and connected society has brought a greater focus and examination on the nature of Māori rights and interests in data. While Māori data sovereignty draws on the context of cultural intellectual property, it also introduces ideas based in treaty rights, indigenous rights, and indigenous research ethics,[26] to argue for greater Māori control of Māori data. Expanding protections and/or controls to information beyond the purview of IP requires a greater consideration of extra-legal mechanisms that enhance Māori participation in data governance. One practical mechanism is the use of labels to make transparent the interests of Indigenous communities in mātauranga or datasets housed within repositories and archives.[27]

Another key component of the WAI262 report was the focus on Māori rights and interests in taonga species and genetic resources. There are similar limitations around protecting Māori interests in these resources through processes which assign patents or PVR's. Extra-legal mechanisms include guidelines like Te Mata Ira Guideline for Genomic Research with Māori which has explicit references to data governance and management.[28] Embedding kaupapa Māori principles leads to more contextualised genomic research on taonga species thereby maintaining both the cultural and biological integrity of Aotearoa New Zealand.[29] Similarly, Biocultural Labels create durable provenance records which can connect users of genomic data with the Indigenous communities the taonga were sourced from to create greater opportunities for ethical research and equitable benefit sharing.

Both the Treaty of Waitangi and international law uphold Māori rights and interests in their data including that of taonga species. Though the current IP system in Aotearoa New Zealand is not sufficient, there are a number of extra-legal protections being developed that enhance Māori rights and interests in knowledge, data, and taonga species. The mechanisms enable Māori rights and interests that are not possible under the current system. Enabling Māori rights and interests in knowledge and data are critical to the governance of their Iwi and sharing in benefit that arises from the knowledge and data.

[25] Garrity, above n 15.

[26] Kiri West, Maui Hudson and Tahu Kukutai "Data Ethics and Data Governance from A Māori World View" in Lily George, Juan Tauri and Lindsey Te Ata o Tu MacDonald (eds) *Indigenous Research Ethics: Claiming Research Sovereignty Beyond Deficit and the Colonial Legacy* (Emerald Publishing Limited, 2020) 67.

[27] "Local Contexts" (2020) <https://localcontexts.org>.

[28] Maui Hudson and others *Te Mata Ira* (Te Mata Hautū Taketake – Māori & Indigenous Governance Centre University of Waikato, 2016).

[29] Waitangi Tribunal, above n 9; Waitangi Tribunal, above n 9; Levi Collier-Robinson and others "Embedding indigenous principles in genomic research of culturally significant species: a conservation genomics case study" (2019) 43 New Zealand Journal of Ecology 1..

Overview of Survey

The survey focused on exploring the policies of research institutions and their approaches to research and innovation projects involving mātauranga Māori, Māori data, and/or taonga species.

Methodology

The survey can be divided into three broad sections. The first section focused on whether the institution conducts research and/or commercialisation activities that involve Māori interests. The second section focused on how institutions dealt with Māori interests throughout the process of commercialisation. The last group of survey questions focused on what was as necessary to better address Māori interests in Mātauranga, genomic data, and Māori data.

The survey questions (Appendix A) were generated by the research team, piloted with members of a Research and Enterprise office, formatted within Qualtrix, and then sent to a range of potential research institutions. In total the survey was sent to key contacts within 57 different research institutes in New Zealand including Universities, Wananga, Crown Research Institutes, Independent Research institutions, the National Science Challenges,[30] and CoREs.[31]

Survey Results

We received 17 completed responses which translated to a response rate of 29%. The people that responded on behalf of these institutions included:

- Director (x 4)
- Chief Scientist (x 2)
- Associate Dean Māori
- Senior Manager
- Academic
- Advisor (Kaitohutohu)
- Data coordinator
- *Blank* (x 6)

We provided the following definitions to participants completing the survey: Mātauranga Māori (Māori knowledge); Māori data (data about Māori people and resources); and Māori genomic data (genomic data about taonga species and people).

[30] Nation Science Challenges are Government funded projects that aim to tackle the biggest science-based issues and opportunities facing New Zealand by bringing together the country's top scientists to work collaboratively across disciplines, institutions and borders to achieve their objectives.

[31] CoREs are funded by the Tertiary Education Commission to encourage tertiary education-based research that is collaborative and strategic focused and also creates significant knowledge transfer activities.

1. Does your institution conduct research and/or commercialisation projects that includes the following?

Mātauranga Māori	Māori data	Māori genomic data
No – 1	No – 1	Blank – 2
Unsure – 2	Unsure – 4	No – 5
Yes – 14	Yes – 12	Unsure – 3
		Yes – 7

2. Do you have an IP Policy?

- Blank – 2
- No – 1
- Yes – 14

3. Does your IP policy include?

Mātauranga Māori	Māori data	Māori genomic data
• *Blank* – 8	• *Blank* – 9	• *Blank* – 9
• No – 4	• No – 3	• No – 4
• Yes – 3	• Unsure – 2	• Unsure – 3
	• Yes – 3	• Yes – 1

A significant proportion of the respondent's institutions are involved with active research utilising Mātauranga Māori. Most of the responding research institutions/collaborative networks have IP policies in place. Only three of the policies made specific reference to mātauranga Māori or Māori data, and only one IP policy addressed Māori genomic data.

4. Please detail what is the process for commercialising IP at your institution when there are Māori interests? (i.e. Mātauranga Māori, Māori data, Māori genomic data from taonga species)

- Blank – 9
- No commercialisation with Māori IP – 2
- Unsure – 2
- Other – 4

5. Are there any differences with publicly or privately funded research? Please detail these differences:

- Blank – 6
- No – 4
- Unsure – 5
- Yes – 2

6. How often would you be involved with commercialising IP derived from Mātauranga Māori, Māori data, Māori genomic data from taonga species?

- *Blank* – 13
- Within last 5 years – 3
- Within last 10 years – 1

7. What kinds of Māori interests are necessary to discuss when commercialising IP? Please detail.

- Access and benefit sharing agreements
- Appropriate consultation prior to research
- Mātauranga
- Benefits and return from IP rights/commercialisation

There are few instances where institutions have sought to commercialise IP derived from mātauranga Māori or taonga species over the past 10 years. The issues identify as potentially relevant include; Access and benefit sharing agreements, Appropriate consultation prior to research, Mātauranga, and Benefits and return from IP rights/commercialisation.

Two respondents stated that IP belongs to the parties that bring it into the research or that rights re indigenous species are respected and benefits arising from research are written into agreements. One other respondent provided a following description:

> *"In our IP agreement the following clause applies and has precedence over the commercialisation pathway. Challenge Parties acknowledge that they have no right to mātauranga Māori (indigenous knowledge) that is kept and treated as proprietary by whanau, hapū and iwi, and agree that, where a Project seeks to make use of any such mātauranga Māori, the Challenge Parties involved in that Project will consult with the relevant whanau, hapū and iwi to reach kotahitanga (consensus) on how that mātauranga Māori is to be used in the Project and as part of any potential Project IP or publication."*

The differential approach to IP was noted by one respondent in relation to private or public funding.

> *"Generally, with privately funded research the IP belongs to the client while with government-funded research we retain ownership of the IP."*

8. Please detail what Māori capacity your institution has to support the process of commercialising IP with Māori interests?

- *4 x detailed responses.*

9. Are there any successful examples you can provide of this occurring?

- *One detailed example*

10. Does the Vision Mātauranga policy support discussions about these issues?

- *2 respondents said yes*

11. What other national policies, institutional frameworks or international agreements are relevant to discussions about Māori interests in the commercialisation of IP? Please detail.

- Wai262 and Tribunal response
- MBIE VM [*Vision Mātauranga*] policy
- Rauika mangai
- Institutional framework of the host organisation

12. What capacities or tools are required to support your institution to better address Māori interests in mātauranga, genomic data, and Māori data?

- Wai262 response, organisation has quick reference guide for this
- *"…mostly to having people with the linkages and time and to some extent mana and trust (builds with time of course), to nurture those relationships and work towards a shared viewpoint."*

There was limited capacity to appropriately support commercialisation of Māori IP within institutions. Respondents made mention of internal expertise and noted guidance provided by WAI262 report.

The successful example involved Trichoderma and interaction with Tuhoe and the Minginui nursery. The respondent stated that benefit sharing agreements have been signed with iwi, although commercialisation has not yet started.

13. Does your institution recognise Māori interests in genomic data of taonga species?

- Two were unsure and five said yes

14. How are Māori interests in genomic data reflected in the data management plans for research projects? Please detail.

- Two were unsure and two gave responses
- *"We do not use genomic data."*
- *"Healthier Lives' cancer research projects haven't treated Māori separately to this point. However, our new CVD epigenetics project recently conducted a korero to discuss this topic. Participants included a member of the project's Māori Governance Group and the Vision Mātauranga Coordinator for Genomics Aotearoa. We are developing a core values document which provides a framework to prospectively guide the epigenetics analysis. Central to this document are the incorporation of kaupapa Māori research values: te tiriti o waitangi (partnership), ngākau tapatahi (integrity), aroha ki te tangata (social accountability), mana (dignity/empowerment), tauutuutu (reciprocity) and te tīma (the team/capacity building)."*

15. How are Māori interests in genomic data reflected in the IP generated out of research projects? Please detail.

- *Two responded as unsure*

16. What do you see as the challenges in recognising Māori interests in genomic data? Please detail.

- "*recognising there is an interest*"
- *"In many circumstances, it will be very difficult to determine the functional relevance of any differences between Māori and non-Māori DNA sequence. Therefore, identifying the IP will be difficult. It will also be difficult to ascertain if any differences in DNA sequences are unique to Māori, and not shared with other ethnic groups."*

There is some recognition of Māori interests in genomic data relating to taonga species however this did not translate into data management practices or processes for addressing IP.

Discussion

The project has reinforced previously identified challenges in the protection of cultural intellectual property rights for taonga, either mātauranga or cultural works, through existing IP mechanisms. The Literature Review found that there was a disconnect between Māori expectations of recognition and protection of mātauranga Māori and taonga species and what is possible through the Western based system of IP system operating in Aotearoa New Zealand. IP provides an exclusive right to use, possess, and dispose of property in a time-limited fashion to a legal entity (which is not necessarily the creator). The various legal mechanisms that protect IP include design marks, trademarks, copyright, geographical indicators, plant variety rights and patents, but they only protect when specific criteria as specified by law are met. Tikanga, on the other hand, protects cultural resources by recognising its whakapapa (origins) and kaitiaki, those responsible for maintaining the mauri (authenticity and integrity) of the mauri of those taonga.

The complexity of Indigenous IP rights is seen through the consideration of taonga species (and Māori genomic data). Māori rights to taonga species including genomic data were widely discussed during the WAI262 hearings which found the cultural relationship between kaitiaki and taonga species is entitled to reasonable protection. Data about taonga species generated through research activities can be afforded some limited protections in terms of copyright and in specific cases, where innovative processes or products are developed, through the Patent Act 2013 or the Plant Variety Rights Act 1987. Mātauranga Māori and/or genomic data is not normally subject to these IP protections and if this information is publicly available then there is potential for it to be utilised and potentially misappropriated by other parties without recourse or a necessity to share benefits with Māori.

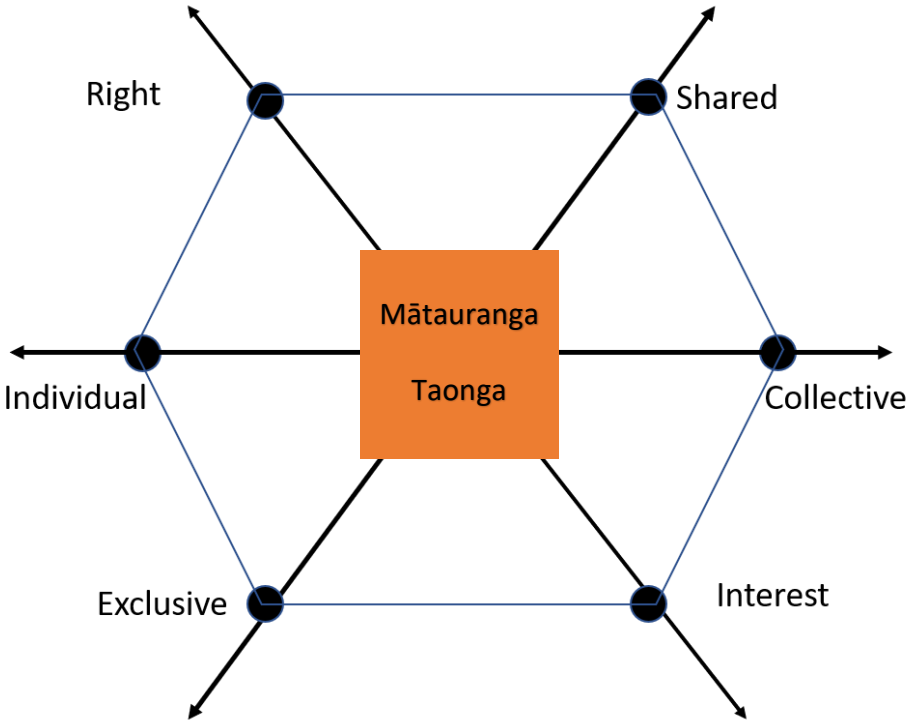
Despite international calls there are few Sui Generis examples of legislation that protects IP rights in traditional knowledge. South Africa is the best-known example of legislative change.[32] Similarly, international conventions, such as the Convention of Biological Diversity (CBD)[33] and the Nagoya Protocol[34], articulate the interests of Indigenous Peoples and Local Communities but have not been well supported in New Zealand. Recent changes in New Zealand to IP legislation has focused on the development of advisory bodies to limit inappropriate protections being granted. The limitations of IP mechanisms and intransigence of Nation States change IP legislation to protect mātauranga Māori or taonga species has led us to explore the place of extra-legal mechanisms to address the inherent tensions between Māori expectations and the capacity of the IP system to deliver.

There are three particular areas where dynamic relationships exist which influence the way protection for mātauranga Māori and taonga might sit closer to an intellectual property right or a kaitiaki responsibility. The relationship of the collective and individuals to mātauranga/taonga is one site of contest, manifest in its expression as a right or an interest,

[32] Intellectual Property Laws Amendment Act 2013 (Act No 28 of 2013) No 37148 (South Africa 2013).
[33] Convention of Biological Diversity, (signed 5 June 1992, entered into force 29 December 1993).
[34] New Zealand has not yet become a signatory to this protocol, but is a signatory to its parent Convention (CBD): Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits, (signed 29 October 2010, entered into force 12 October 2014).

as well as being applied in an exclusive or shared nature. The diagram below reflects the implicit relationality reflected in cultural intellectual property.

Figure 1: Relational challenges in understanding cultural IP



Tikanga has protocols for managing cultural IP and principles for governing social interaction and functioning including mechanisms when imbalance arises from wrongful action. Tikanga protects cultural resources by recognising its whakapapa (origins) and kaitiaki (stewards), those responsible for maintaining the mauri (authenticity and integrity) of those taonga. The challenge arises when mātauranga/taonga move beyond of the sphere of Māori control into national and international contexts where tikanga is not respected. In these environments numerous examples of misappropriation can be found in relation to bioprospecting (taonga species), claiming of copyright (mātauranga Māori), and utilising Māori designs (taonga derived works).

The lack of legal protection within international contexts in the face of increasing digitisation of cultural heritage resources and international collaborations around genetic research creates a dilemma for Māori communities that want to assert rights and interests being articulated by the Māori Data Sovereignty movement. Increasing Māori control of Māori data occurs in its strongest form when the data is owned, controlled, accessed, and possessed by the communities themselves, a situation consistent with the OCAP principles.[35] When data is

[35] The First Nations Information Governance Centre "OCAP® | FNIGC" (2020) FNIGC/CGIPN <https://fnigc.ca>; The First Nations Information Governance Centre *Ownership, Control, Access and Possession (OCAP): the Path to First Nations Information Governance* (The First Nations Information Governance Centre, 2014); Brian Schnarch "Ownership, Control, Access, and Possession (OCAP) or Self-Determination Applied to Research: A

located in external institutions the CARE Principles for Indigenous Data Governance focus attention on collective benefit, authority to control, responsibility, and ethics.[36] These principles and other guidance documents (Te Ara Tika Guidelines for Māori Research Ethics[37], Te Mata Ira Guidelines for Genomic Research with Māori, He Tangata Kei Tua Guidelines for Biobanking with Māori[38], Te Nohonga Kaitiaki Guidelines for Genomic Research with Taonga Species) provide direction towards more ethical and equitable research and innovation practices, which can be used to frame policy.

Guidelines, Consultation Frameworks, and Biocultural Protocols are particularly useful for supporting consultation activities and ethical practice at the beginning of research projects which generate data, especially if expectations of consultation and engagement are mandated by ethics committees or funding agencies. They often have a more limited application in the secondary use of data where these expectations are non-existent for next users that access data from the internet or open data platforms.

Traditional Knowledge Labels are a new extra-legal mechanism that re-positions Indigenous cultural authority and governance over Indigenous data and collections by creating digital tags in the metadata.[39] This means that appropriate information about provenance, knowledge about traditional protocols, and community approved permissions, can be captured in the metadata record and visualised on the public record. Labels create transparency and visibility of Indigenous rights in relation to the mātauranga/taonga and can assist in building better relationships between knowledge-holding institutions and the communities whose collections they hold, steward, and manage.[40] The Labels, which also have been adapted for use with genomic datasets (BC Labels), provide a clear pathway to communities for proper attribution, acknowledgement and benefit sharing (see https://localcontexts.org/).

Another extra-legal approach to protection of mātauranga Māori involves the creation of data archives or knowledge repositories. The idea of repositories is to provide a means of registering the origin of that traditional knowledge, as well as storing and managing access to that knowledge for the benefit of indigenous people or groups. Digital repositories have been

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[36] Research Data Alliance International Indigenous Data Sovereignty Interest Group *CARE Principles for Indigenous Data Governance* (The Global Indigenous Data Alliance GIDA-global.org, 2019); Stephanie Russo Carroll and others "The CARE Principles for Indigenous Data Governance" (2020) 19 Data Science Journal 43.

[37] Maui Hudson and others *Te ara tika: guidelines for Māori research ethics: a framework for researchers and ethics committee members* (Health Research Council of New Zealand on behalf of the Pūtaiora Writing Group, Auckland, NZ, 2010).

[38] Maui Hudson and others *He Tangata Kei Tua—Guidelines for Biobanking with Māori* (2016); Angela Beaton and others "Engaging Māori in biobanking and genomic research: a model for biobanks to guide culturally informed governance, operational, and community engagement activities" (2017) 19 Genetics in Medicine 345.

[39] Jane Anderson and Kimberly Christen "'Chuck a Copyright on it': Dilemmas of Digital Return and the Possibilities for Traditional Knowledge Licenses and Labels" (2013) 7 Museum Anthropology Review 105; Jennie Rose Halperin "Is it possible to decolonize the Commons? An interview with Jane Anderson of Local Contexts" (30 January 2019) Creative Commons <https://creativecommons.org>.

[40] Jane Anderson "Options for the Future Protection of GRTKTCEs: The Traditional Knowledge Licences and Labels Initiative" (2012) 4 WIPOJ 66; Maui Hudson and others "Rights, interests and expectations: Indigenous perspectives on unrestricted access to genomic data" (2020) 21 Nature Reviews Genetics 377; Jane Anderson "Traditional Knowledge Labels" (Genomics Aotearoa, 2019).

suggested as a suitable mechanism for mātauranga Māori in New Zealand[41] and are present in a number of jurisdictions around the world as local level repositories (Alaska Traditional Knowledge and Native Foods,[42] The Food Wisdom Repository,[43] and Traditional Ecological Knowledge Prior Art Database)[44] or national level repositories (National Indigenous Knowledge Management System,[45] Traditional Knowledge Digital Library).[46]

What the project has highlighted is that current IP mechanisms are unable to protect mātauranga Māori, Māori data or genomic data from taonga species to the extent required by Māori communities. To be effective, the approach to protecting cultural intellectual property needs to become more expansive to include both legal and extra-legal mechanisms. An integrated approach to the protection of mātauranga Māori and taonga species is likely to create better opportunities for value creation through research and innovation while maintaining a degree of control by using the best facets of IP alongside extra-legal tools like TK and BC Labels. The protections that arise from the use of TK/BC Labels emerges initially by making transparent Indigenous rights which provides a pathway to contracts or agreements with specific parties around the use of data which are then subject to legal protection. Figure 2 below illustrates how the complementarity between legal and extra-legal mechanisms can be harnessed to provide better protection for mātauranga and taonga species.

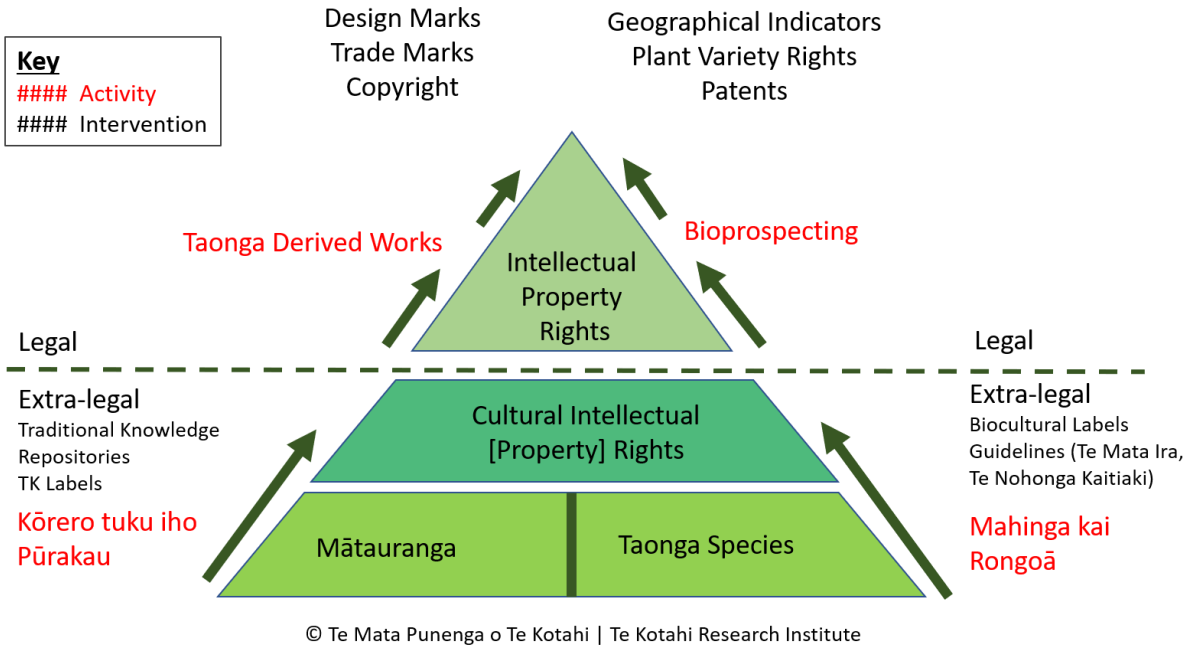

Figure 2: Integrated approach to the protection of mātauranga and taonga species

[41] Tai Ahu, Amy Whetu and James Whetu "Mātauranga Māori and New Zealand's intellectual property regime—challenges and opportunities since Wai 262" (2017) 8 NZIPJ 79 at 85.
[42] Alaska Native Science Commission "Alaska Traditional Knowledge and Native Foods" <www.nativeknowledge.org>.
[43] Michelle D Johnson-Jenning, Derek R Jennings and Meg M Little "Indigenous data sovereignty in action: The Food Wisdom Repository" (2019) 4 Journal of Indigenous Wellbeing: Te Mauri - Pimatisiwin 26.
[44] "Traditional Ecological Knowledge Prior Art Database (TEK* PAD)" (2021) Eldis <www.eldis.org>.
[45] "National Indigenous Knowledge Management Systems—Nikmas" (2016) <https://nrs.dst.gov.za>.
[46] "Traditional Knowledge Digital Library" (25 June 2020) Council of Scientific & Industrial Research | CSIR | GoI <www.csir.res.in>.

The survey identified several gaps in the research and innovation sector. There was a distinct lack of knowledge about Māori rights and interests in data, and how mātauranga Māori, Māori data, and genomic data from taonga species could be protected. The Vision Mātauranga policy[47] was adopted to enhance Māori participation in the research sector and unlock the innovation potential of Māori knowledge, resources and people. It was also expected to address the issue of misappropriation of mātauranga Māori in research.[48]

There is a clear need to ensure IP policies include clauses for protection of Māori rights and interests in data. The survey identified gaps in the responsiveness of institutional research policies to mātauranga Māori, Māori data, and genomic data from taonga species. This reiterated the findings of Ayoubi (2019) who found variable reference to the Treaty of Waitangi and mātauranga Māori in University IP policies.[49]

> *Reference to mātauranga Māori in the IP policies of the eight NZ universities is varied. Some do not include any such references. Other policies express the university's commitments to the principles of the Treaty of Waitangi, but do not elaborate on how Treaty principles are to be considered in the commercialisation of university research IP. General references to Treaty obligations may not necessarily translate into consideration for mātauranga issues. Finally, others include more detailed provisions for protection of mātauranga in IP commercialisation. However, lack of clear terminology or guidelines around the identification and assessment of mātauranga could lead to problems in applying these instructions.*

The survey also identified a lack of institutional capacity with a limited number of Māori staff operating within Research and Enterprise offices and limited capability amongst other staff members. This context most likely contributes to the levels of overwork relayed by Māori scientists,[50] and Māori academics who often face a support in tertiary institutions.[51] There is a need not only to build capacity but ensure that there is funding to retain Māori capacity at research institutions. Resources must be available to support and enhance capacity to address IP issues for Māori engaging in research and innovation activities.

[47] Ministry of Business, Innovation & Employment "Vision Mātauranga" <www.mbie.govt.nz>.

[48] Lida Ayoubi *Intellectual Property Commercialisation and Protection of Mātauranga Māori in New Zealand Universities* (2019) at 4.

[49] At 7–8.

[50] Jarrod Haar and William John Martin "He aronga takirua: Cultural double-shift of Māori scientists" [2021] Human Relations 00187267211003955.

[51] TG McAllister and others "Why isn't my professor Māori? A snapshot of the academic workforce in New Zealand universities" (2019) 8 MAI Journal.

Next Steps

There are a number of steps that could be taken to improve the responsiveness of research institutions to Māori interests in IP. First, it is clear that more awareness and education must be provided for those working in research and enterprise offices. Training should cover a spectrum of topics from tikanga Māori to Māori Data Sovereignty, mātauranga Māori to cultural intellectual property, taonga species to extra-legal mechanisms, as well as Vision Mātauranga and Te Tiriti o Waitangi. Second, there is a need to enhance IP policies to be more responsive to the needs of Māori communities. Providing more examples of good practice and templates/exemplar documents would support research institutions to improve their practice and responsiveness to Māori research aspirations. Third, enhancing Māori capacity within research institutions and competencies around Māori Data Sovereignty and Māori IP would be beneficial. These actions would lead to more ethical practices and equitable outcomes from research and innovation activities.

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Appendix 1: Survey Questions

1. Does your institution conduct research and/or commercialisation projects that includes the following?
    - Mātauranga Māori (Māori knowledge)
    - Māori data (Data about Māori people and resources)
    - Māori genomic data (genomic data about taonga species and people)

2. Do you have an IP Policy?

3. Does your IP policy include:
    - Mātauranga Māori
    - Māori data
    - Māori genomic data from taonga species

4. Please detail what is the process for commercialising IP at your institution when there are Māori interests? (i.e. mātauranga Māori, Māori data, genomic data from taonga species)

5. Are there any differences with publicly or privately funded research? Please detail these differences:

6. How often would you be involved with commercialising IP derived from MM, MD or GD?

7. What kinds of Māori interests are necessary to discuss when commercialising IP? Please detail.

8. Please detail what Māori capacity your institution has to support the process of commercialising IP with Māori interests?

9. Are there any successful examples you can provide of this occurring?

10. Does the Vision Mātauranga policy support discussions about these issues?

11. What other national policies, institutional frameworks or international agreements are relevant to discussions about Māori interests in the commercialisation of IP? Please detail.

12. What capacities or tools are required to support your institution to better address Māori interests in mātauranga, genomic data, and Māori data?

13. Does your institution recognise Māori interests in genomic data of taonga species?

14. How are Māori interests in genomic data reflected in the data management plans for research projects? Please detail.

15. How are Māori interests in genomic data reflected in the IP generated out of research projects? Please detail.

16. What do you see as the challenges in recognising Māori interests in genomic data? Please detail.