Roadmap for Operationalising Māori Data Sovereignty

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Contents

Formatting Notes

This document uses several formatting conventions to help guide readers:

- **Colour-coding:** The framework uses colour-coding to distinguish between technical standards (shown in blue) and *cultural standards* (shown in red) throughout the document.

- **Māori terms:** Māori terms are italicized using the *maori* command (e.g., *te reo Māori*).

- **Framework terms:** Important framework terminology is emphasized using **bold formatting**.

- **Citations:** References are cited using numbered citations that correspond to entries in the bibliography at the end of the document.

- **Hyperlinks:** External resources and URLs are provided as clickable hyperlinks throughout the document.

- **Section numbering:** Each main step section is numbered and begins on a new page for easy navigation.

Glossary

This glossary provides translations for Māori terms used throughout this document. Terms are listed alphabetically.

hapū subtribe or clan

iwi tribe

Kaitiakitanga guardianship, stewardship

Kotahitanga collective benefit

Manaakitanga respect, generosity, care

mātauranga knowledge, wisdom

Pou pillars

Rangatiratanga authority

tāonga treasure

Te Ao the world

whakapapa genealogy

whānau family

Whanaungatanga relationships

List of Acronyms

AI Artificial Intelligence

DPUP Data Protection and Use Policy

FNIGC First Nations Governance Centre

FPIC Free, prior, and informed consent

GDPR General Data Protection Regulation

GIDA Global Indigenous Data Alliance

HDEC Health and Disability Ethics Committee

HRC Health Research Council

IDGov Indigenous data governance

IEEE Institute of Electrical and Electronics Engineers

IPIE Indigenous Protocol and Artificial Intelligence Working Group

MDGov Māori data governance

MDSov Māori data sovereignty

OECD Organisation for Economic Co-operation and Development

RDA Research Data Alliance

Introduction

Purpose of this framework

This framework aims to achieve the goal of ensuring appropriate engagement with Māori data by protecting and upholding Indigenous governance at every stage—from collection and analysis through to dissemination and translation. Recognising the dynamic and multifaceted nature of Indigenous Data Sovereignty, the framework is not static but continually evolving.

If you want to learn more about Māori data sovereignty and Indigenous data sovereignty, then consider looking at this Māori data sovereignty resource list: Māori data sovereignty Resource Inventory.

Who is this framework for

Individuals and organisations currently working with Māori data or who are interested in engaging with Māori data in the future. It aims to streamline the engagement process by offering a practical and accessible resource for interacting with Māori data. The framework also provides answers to commonly asked questions about data sovereignty.

Te Mana Raraunga defines Māori data as *"data that are produced by Māori, and data that are about Māori and the environments we have relationships with. Data are a living tāonga and are of strategic value to Māori."*

By following this framework, users will ensure that data is handled in alignment with Indigenous data sovereignty principles. This not only safeguards the rights of Māori but also contributes to the advancement of iwi, whānau, and hapū aspirations. By the end of the framework, you will walk away with a set list of resources and tools collected during each step to help you advance Māori data sovereignty in your research.

Content

Intro

The framework is structured around six key headings, providing a step-by-step guide for engaging with Māori data.

Steps:

1. Data Framework

2. What type of data are you using?

3. Reusing Data

4. Collecting Data

5. Data Storage

6. Data Preservation

The guide outlines a range of pathways depending on whether a researcher is reusing a pre-existing Māori dataset or collecting new Māori data for research purposes. Each section includes subheadings that outline key considerations, legislative requirements, and policy considerations, specifically the Information Privacy Principles outlined in the Privacy Act. International Indigenous data frameworks have also been included to enable comparative insights. At the end of each section/step, examples and further readings are provided to assist the reader in understanding and implementing best data sovereignty practices. Furthermore, each framework is colour-coded to indicate whether it should be applied in professional practice/technically or if it serves as a cultural standard.

Framework & Data Type

The framework begins with an introduction to Māori data sovereignty and governance in Aotearoa/New Zealand, guided by Te Mana Raraunga principles. It also references multiple Health Research Council guidelines to help the reader identify different types of health data (e.g., biobank data) and their uses.

Reusing Data

This section outlines the necessary steps for engaging with pre-existing datasets. Additionally, it considers the appropriate approach to take based on whether a Māori data governance structure is already in place.

The Ngā Tikanga Paihere framework, developed by Stats New Zealand, guides ethical and culturally appropriate data use. Before repurposing a dataset for new research, it is essential to ensure proper engagement has occurred with the communities that have provided the data. It is also important to identify whether participants gave informed consent for their data to be reused, or whether that initial consent was limited to a singular, specific purpose.

In short, when dealing with reusing Indigenous data, researchers must ask:

- Was consent originally given for future or secondary use?

- Or was the consent purpose-specific, meaning new consent/re-consent is required before the data can be used again ethically?

Collecting

This section details the process of collecting new health data, emphasising the importance of Māori involvement throughout the research process. Research should contribute to the advancement of Māori wellbeing and benefit Māori participants and communities.

It is crucial to identify Māori participants and researchers involved in the process, as well as the recruitment methods used. Collecting data for research purposes requires ethical approval from either the Health and Disability Ethics Committee or an Institutional Ethics Committee (IEC). This section includes exemplar application forms from the Health and Disability Ethics Committee and the University of Otago as an example of an institutional process, along with Health Research Council guidelines to support ethical approval applications.

Data Storage

Understanding where data is stored is a crucial consideration in relation to upholding Indigenous data sovereignty. Under New Zealand's Cloud First Policy, it is important to use onshore cloud systems to ensure data is stored within New Zealand's jurisdiction and not subject to foreign legal frameworks. The relevant Māori participants or communities should have authority over where their data is stored and under what conditions it is accessed.

Data Preservation

The final section focuses on protecting stored data to ensure it is safeguarded and remains accessible for future use. This includes principles for effective data stewardship from New Zealand Government websites and the Māori data governance model created by Te Kāhui Raraunga.

Ultimately, proper data handling and processing should prioritise data sustainability and the future needs of Māori communities.

Scholars such as Stephanie Russo Carroll and Maui Hudson highlight the importance of data repatriation and using tools like Traditional Knowledge labels to ensure that Indigenous communities retain authority over their own data.

Because New Zealand currently lacks a dedicated National Indigenous archive or organisation that supports such data preservation, researchers should proactively develop systems that help enable sustainable storage, appropriate metadata, and future repatriation. Developing and applying these knowledge labels can create the foundation for data to be reused in the future in ways that we cannot yet anticipate.

Various International frameworks can provide guidance. The FAIR principles set out technical

standards for sustainable data use. The First Nations Governance Centre in Canada offers another influential model, advancing First Nations data sovereignty within Government systems.

Through its OCAP principles, First Nations Governance Centre has negotiated challenging issues of data control and hard repatriation with the Canadian Government. Although OCAP does not directly apply to New Zealand, it serves as an aspirational benchmark for strengthening Māori data sovereignty and guiding future data development in New Zealand.

Conclusion

Each section builds upon the last. Organisations and researchers are encouraged to explore the provided examples and the further readings provided to deepen their understanding of best practices in relation to Indigenous data sovereignty. By doing so, they can effectively implement these practices and contribute to improving Māori wellbeing.

1   Establish a Data Framework

- If you intend to engage with Māori data sovereignty, begin here:

  – What is Indigenous Data Sovereignty?

  – What is Māori data sovereignty?

  – What is Māori data governance?

- *Consider Te Mana Raraunga's Principles of Māori data sovereignty* [42]

  These principles advocate for the realisation of Māori rights and interests in data and the ethical use of Māori data to enhance Māori aspirations.

  1. Rangatiratanga/Authority

  2. Whakapapa/Relationships

  3. Whanaungatanga/Obligations

  4. Kotahitanga/Collective Benefit

  5. Manaakitanga/Reciprocity

  6. Kaitiakitanga/Guardianship

- *Te Kāhui Raraunga Māori data governance Model* [14]

  The report sets out a framework for the system-wide governance of Māori data. The model is built on seven Data *Pou* (pillars):

  1. Data Capabilities and Workforce Development

  2. Data Infrastructure

  3. Data Collection

  4. Data Protection

  5. Data access, sharing, and repatriation

  6. Data use and reuse

  7. Data quality and system integrity

2 Identify the type of Dataset

- Use these guidelines depending on the dataset category:

- Local/institutional Indigenous . . .

  - **Genetic research:** Refer to *Te Tika Ara* [14].

  - **Biomedical, public health, or clinical research:** See *Guidelines for Research Involving Māori Health* [10].

  - **Biobanking:** Follow *He Tangata Kei Tua: Guidelines for Biobanking with Māori* [13].

  - **Ethical and cultural data practices and research:** Follow *Ngā Tikanga Paihere* [38].

  - **Health Statistics:** *Te Whatu Ora* and *Manatū Hauora* are developing a Māori-led data sovereignty framework [43].

  - **Other:** [Public opinion data] Indigenous Statistics:

    * **National guidelines:**

      · Te Mana Raraunga Charter

      · Guidance from Data Ethics Advisory Group

      · Data Protection and Use Policy Principles

    * **National professional body:**

      · Te Mana Raraunga

      · StatsNZ

      · Data Ethics Advisory Group

      · Office of the Privacy Commissioner

    * **International body/professional:**

      · CARE Principles for Indigenous data governance

      · Institute of Electrical and Electronics Engineers

      · United Nations Declaration on the Rights of Indigenous Peoples

    * **Similar exemplars or projects/precedents:**

      · CARE Directs Us Home: Prioritizing Indigenous Peoples' Community Standards Communiqué

      · Exploration of the Impact of Canada's Information Management Regime on First Nation's Data Sovereignty

· National best practice guidelines for collecting Indigenous status in health data sets

3   Reusing Data

- Are you reusing a pre-existing dataset? Key considerations include:

  - Further Data Analysis

    * Is additional analysis needed to achieve your research goals?

    * How well documented is the work, and where did it originate? Is there a good understanding of the data provenance? Are further notes or explanations needed?

    * How was it collected, under what conditions, and did the original data collectors consider Indigenous data sovereignty?

  - Privacy Act s 22 IPP 2: Source of personal information [24]

    1. If an agency collects personal information, the information must be collected from the individual concerned.

  - Data provenance

    * Whose data is it?

    * What is the source?

    * Which individuals or groups are connected?

Refer to:

- *Institute of Electrical and Electronics Engineers: (Read Draft) Rec. Practice for Provenance of Indigenous People's Data* [15].

  The draft emphasises the importance of identifying the provenance of Indigenous data and appropriately disclosing the connections between Indigenous peoples and their data.

  "The practice supports the long-term identification of Indigenous Peoples' data for future use, connects data to people and place, and supports future benefit sharing."

- Are there Māori identifiers for reusing data?

  - "All researchers must clearly identify the Māori collective (whānau, hapū, iwi, organisation) or the Māori stakeholder group they wish to engage by specific recruitment criteria (e.g., 'Māori men with diabetes accessing diabetes services in X District Health Board', 'Māori mothers under the age of 20 living in X city with experience of Y')." [20]

  - Identify Māori participants in research (Individual/self-identification, iwi affiliation, community links, ethnicity, or descent).

  - Engage with Māori researchers and experts:

    * Is there existing data governance?

* Who is the existing authority group?

  * Engage with the experts in that area

  * Or, establish a formal route for advice

  * We aim to set a precedent for others to follow...

 – Ensure the wider community is informed about the research and data use.

Consider these resources:

- *Māori data sovereignty and Privacy by Tahu Kukutai* [17]

  – This paper aims to identify and address gaps in existing data privacy approaches for Indigenous data and to provide a basis for developing alternative privacy models.

- *How Indigenous communities in New Zealand are protecting their data by Tahu Kukutai* [17]

  – This article discusses how Indigenous communities are asserting and protecting collective data rights.

  – The article describes how data governance is being structured using tikanga protocols and mentions specific Māori-led initiatives that apply these approaches to digital tools and data systems.

- Data Identifiability

  – If at the **collective** level: Apply *Ngā Tikanga Paihere* [38] framework.

  – If at the **individual** level:

    * Flag privacy levels

    * Obtain specific consent

    * Use de-identification strategies

    * Consider unique identifiers?

    * Mitigate re-identification risks.

  – **Risks for Māori:**

    * Greater risks exist for Indigenous peoples due to smaller population sizes [17]

    * Health Research is often highly sensitive

  – **Data Quality Assessments**

    * Is the dataset representative?

    * Has it been verified?

* What narratives can be drawn?

* What are the relevant variables and their level of detail?

* Who benefits from this reuse?

* Does reusing the data enhance the collection's original purpose?

Māori data governance

- If a pre-existing Māori data governance exists:

  - Engage directly with the relevant iwi or Māori collective

  - Follow their governance frameworks

  - Uphold Māori data sovereignty through:

    * Consent and negotiation

    * Consultation and collaboration

    * Ethical and cultural sensitivity

- If no Māori data governance exists:

  - Apply *Ngā Tikanga Paihere* [38] principles to ensure best practice for collective and secondary/government datasets.

  - ***Ngā Tikanga Paihere Principles:*** [38]

    1. Have appropriate expertise, skills, and relationships with communities

    2. Maintain public confidence and trust when using data

    3. Use good standards and practices

    4. Have a clear purpose and action

    5. Balance benefits and risks

  - **International and Professional Standards**

    Consider relevant international standards:

    * Institute of Electrical and Electronics Engineers, Research Data Alliance. . . offering exemplars where there is no local precedence

    * Consider Global Indigenous Data Alliance standards where applicable. . .

The General Data Protection Regulation (European Union)   [7]

- The General Data Protection Regulation is one of the most robust and comprehensive privacy frameworks established by the European Union.

- However, the regulation operates within a legal framework that does not recognise Indigenous collective rights to data. Instead, it focuses on individual data ownership, which may be problematic for Indigenous communities with collective data rights.

- Art 3 Territorial Scope: the regulation applies to all data processors processing personal data of European citizens. The extraterritorial nature of the General Data Protection Regulation means that New Zealand agencies processing EU data are subject to the General Data Protection Regulation's principles of data processing.

- Non-robust research is unethical and not valid.

Australian Framework for Governance of Indigenous Data [3]

- This governance framework acts as a stepping stone towards greater awareness and acceptance by Australian Government Agencies of the principles of Indigenous Data Sovereignty.

- Government agencies in NZ should follow suit by adopting the MDGov model by Te Kahui Raraunga.

Framework Guidelines:

- **Guideline 1:** Partner with Aboriginal And Torres Strait Islander people

- **Guideline 2:** Build data-related capabilities

- **Guideline 3:** Provide knowledge of data assets

- **Guideline 4:** Build an inclusive data system

Consent

- **Consent is critical.**

  It must be Free, prior, and informed consent, and must involve:

  - Ethical reuse of Māori data

  - Individual or collective consent processes

  - Ongoing and negotiable consent

  - Transparent information provision

  - People are likely to allow their data and health information to be reused if they know it is expected to help others.

  - However, this is conditional on protecting, caring for, and respecting their health information [6].

- **Important considerations:**

  - Are there pre-existing consent protocols in place?

- Participants must be given complete information

- Community/collective consent must be evidenced

- Avoid causing permanent damage through misinterpretation or overinterpretation of data analysis [45].

  - Consider the First and Second Editions of Indigenous Statistics: From Data Deficits to Data Sovereignty.

- **Legal Context:**

  - **The Privacy Act 2020** [24] inadequately protects Māori Free, prior, and informed consent.

    * S 21(c) states that the Privacy Commissioner may "take account of cultural perspectives of privacy."

    * There is no general or specific Treaty provision.

    * The Privacy Act does not adequately protect the rights of Māori to Free, prior, and informed consent. With Māori consultation, it is good practice to inform Māori of secondary uses of their data.

  - The Privacy Amendment Bill is likely to change agency standards, so there is an obligation to notify individuals of the secondary use of their personal data [26].

    * This means that agencies must be more accountable and transparent.

Privacy and Disclosure Risk

Assess:

- **Potential for harm from disclosure:**

  - If there is a risk of disclosure, what would the impact be?

  - Is the risk potentially harmful?

- **Scale of impact** (individual, collective, population)

- **Mitigation strategies:**

  - How can these risks be mitigated? What steps are being taken?

Artificial Intelligence and Māori Data

Artificial Intelligence risks:

- The problem with Artificial Intelligence is that it uses pre-existing data. Where is that data from? What are the safety obligations?

- What data is it being trained on?

- This is potentially problematic because it sidesteps the principles of OCAP [45].

Guidance Frameworks:

- *Indigenous Protocol and Artificial Intelligence Working Group (IPIE): Recommendations for a global Artificial Intelligence auditing framework* [16]

  - Artificial Intelligence systems can support progress but also perpetuate historical biases.

  - This framework aims to safeguard against potential harm caused by Artificial Intelligence technologies.

  - "For auditing Artificial Intelligence system training, testing, and validation data, criteria should address data privacy and protection, Indigenous and collective data."

- Global program on AI (OECD) [29]

  - The Global Partnership on Artificial Intelligence is an Organisation for Economic Co-operation and Development partnership aimed at advancing safe and secure artificial intelligence, grounded in the principles outlined in the Organisation for Economic Co-operation and Development Recommendation on Artificial Intelligence.

  - The principles provide policymakers with recommendations for effective Artificial Intelligence policies.

  - Organisation for Economic Co-operation and Development Artificial Intelligence principles:

    * NZ is a country adherent to the Principles.

    * Values-based & recommendations for policymakers.

- *Public Voice, Universal Guidelines for AI (2018)* [30]

  - Proposed universal guidelines for the design and use of Artificial Intelligence.

  - Guidelines should be incorporated into ethical standards, laws, and international agreements and built into the design of systems.

  1. Right to Transparency

  2. Right to Human Determination

  3. Identification Obligation

  4. Accountability Obligation

  5. Fairness Obligation

  6. Accuracy, Reliability, Validity, and Replicability Obligations

  7. Data Quality Obligation

  8. Public Safety Obligation

9. Cybersecurity Obligation

10. Prohibition on Secret Profiling

11. Prohibition on National Scoring

12. Termination Obligation

Consider these resources:

- *Artificial Intelligence and Indigenous Data Sovereignty by Maggie Walter and Tahu Kukutai* [45]

  - There are considerable risks embedded in Artificial Intelligence and significant challenges relating to bias, stigma, and accountability.

  - The paper considers how Indigenous Data Sovereignty can mediate the risk of harm and enable pathways to collective benefits.

  Indigenous Protocol and Artificial Intelligence Position Paper [18]

  - Peter Lucas Jones - Indigenous Artificial Intelligence.

  - This framework explores how indigenous knowledge systems can inform Artificial Intelligence systems' development and governance.

- *Māori Data and Artificial Intelligence Guidance for Businesses* [28]

  - Using data collected as part of your business-as-usual for Artificial Intelligence, risk may increase due to the potential bias within the data.

- *Implementing Australia's Artificial Intelligence Ethics Principles: A selection of Responsible Artificial Intelligence practices and resources* [31]

  - Gradient Institute (AUS) & The Commonwealth Scientific and Industrial Research Organisation - National Artificial Intelligence Centre.

    * Australia is leading the pack on cultural policy responses to Artificial Intelligence.

    * The report aims to use tools and guidelines to connect the ethics principles with the practice of Responsible Artificial Intelligence.

  Artificial Intelligence Ethics Principles:

    * Human, societal and environmental well-being

    * Human-centred values

    * Fairness

    * Privacy protection and security

    * Reliability and Safety

* Transparency and explainability

  * Contestability

  * Accountability.

- *CAIDP Seizing the Moment: A Time for Growth* [5]

  Centre for Artificial Intelligence & Digital Policy Online (US).

  – This strategic plan talks about the Artificial Intelligence Policy that the Centre has launched and its goals to educate future leaders in Artificial Intelligence policy analysis, research, and formation.

  – These Artificial Intelligence policy clinics offer a pathway for Māori data sovereignty advocates to engage in these discussions on Artificial Intelligence governance to safeguard Indigenous data when engaging in Artificial Intelligence practices.

Example: *Havasupai Indian Tribe vs the Arizona Board of Regents* [34]

In this case, the Havasupai Tribe claimed that Arizona State University misused their DNA samples and that they had not given informed consent for the samples to be used in other studies. These studies were stigmatising and inflicted emotional distress on the tribe.

Further reading: FAIR Guiding Principles for Scientific Data Management and Stewardship [35]

Promotes data being Findable, Accessible, Interoperable, and Reusable. About improving data quality and the wide sharing and reuse of data sets to generate knowledge.

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4   Collecting New Data

Necessity

- Is data collection **necessary** to achieve outcomes?

- Can you use **existing data** instead?

Legal Obligations

- Privacy Act 2020, s 22 = 22

  - **IPP 3:** Collection of information from the subject.

    * When personal information is collected from an individual, that individual is entitled to know that the information is being collected, the purpose of the collection, and the identity of the agency collecting the personal data.

  - **IPP 4:** Manner of collection of personal information.

    * By lawful means

    * It is fair and does not intrude to an unreasonable extent upon the personal affairs of the individual concerned.

  - **IPP 10:** Limits on the use of personal information.

    * The agency is limited in the use of personal information to its collection purpose.

  - **IPP 11:** Limits on disclosure of personal information [24].

    * The agency that holds personal information must not disclose the information to any other agency or to any person. . .

- Health Information Privacy Code 2020 [23]

  - A Code created from the Privacy Act.

  - It provides additional protection to participants when health data is collected for research purposes.

Design

- Co-design data with Māori as partners from a Māori lens (Te Kāhui Raraunga videos) [39]

- Apply *The CARE Principles for Indigenous data governance* [32].

  - The expectation in practice is to consider the International CARE principles

  - CARE stands for Collective Benefit, Authority to Control, Responsibility, and Ethics.

- In this paper, the IDG integrates CARE principles into global data-sharing frameworks to ensure Indigenous communities have the Authority to control decisions regarding their data.

- Avoid BADDR practices [46]

  - Blaming, Aggregate, Decontextualised, Deficit, and Restrictive.

  - It is a framework that describes common Indigenous data failures.

- Consider:

  - What actions can be taken to improve collection practices?

  - Do we collect data in ways that uphold the dignity and respect of the participants?

  - We need to shift the focus and begin seeing Māori as data designers.

  - Make tangible contributions to Māori aspirations and goals.

  - Does my proposed research contribute to Māori health advancement?

Consent

- Free, prior, and informed consent: Individual or collective?

- Adequate information

- Individual, collective, or community consent? Grouped consent?

Māori identifiers

- Recruitment method

- The research team should include appropriate Māori health expertise or community engagement/contribution to ensure that the research can deliver its intended objectives regarding Māori health advancement [11].

- Identifying Māori participants in research.

- Ensure appropriate Māori health expertise

- Respect iwi/hapū/whānau data needs.

- Further, consider *the First Nations Principles of OCAP:* [8]

  - Stands for Ownership, Control, Access, and Possession.

  - This framework is from the First Nations of Canada.

  - Institutional responsibilities. Used as a data governance standard.

  - This framework asserts that Governments and researchers must have Indigenous oversight when collecting and using Indigenous data.

Data Quality Assessments

- Disaggregate Indigenous data. Break data into specific categories to reflect diversity within Indigenous populations and to allow for a more accurate representation of Māori Health.

- Is the data representative?

- The processing and handling of Māori data should be grounded in Tikanga.

- Researchers using data about Indigenous people must be aware that the data's reliability can be negatively impacted by the purpose of data collection, who collected the data, and how it was collected [1].

Collection Methods

- Consider the best mode to engage with Māori (e.g., wananga, hui. . .)

- Engage with Kaupapa Māori research methods

- Prioritise **Whanaungatanga** - relationship building

- Māori data is a taonga, and it's sensitive. It holds cultural, spiritual and collective significance because it is connected to whakapapa and identity. So, it must be handled with care and appropriate safeguards.

Ethical Approval

- **Ethics Applications:** Any proposed health research requires ethical approval by the Health and Disability Ethics Committee or an Institutional Ethics Committee.

- Health and Disability Ethics Committee Application Form [19]

- University of Otago Human Ethics Committee Application Form [44]

Key frameworks:

→ Health Research Council Research Ethics Guidelines 2021 [12].

  – Principles for research involving human participants.

→ Guidelines for Researchers on Health Research involving Māori 2010 [10].

  – Guidelines to help develop research partnerships between researchers and Māori communities or groups. About consultation.

  – Two specific goals to improve Māori health are 'Reducing inequalities in health status' and 'Māori development in health'.

→ Health Research Council Māori Health Advancement Guidelines 2019 [11].

  – These guidelines are intended to support health researchers in describing how their proposed research contributes to Māori health advancement.

Legal Context:

- Health Research Council Act 1990 [21]

    - S 25 sets out the role of the ethics committee as considering and making recommendations to the Council on ethical issues surrounding health research. Can make ethical assessments on an application for a grant for health research.

Example: *2018 Census Iwi Data* [37]

The census could not produce high-quality population counts of Iwi because of the significantly low response rate.

Further reading: *What does data sovereignty imply: what does it look like?* [36]

To decolonise data and enhance data sovereignty, Indigenous people must have the power to dictate the content of their collected data, which must reflect their values and priorities.

Indigenous Statistics: from data deficits to data sovereignty [1]

This book introduces a new framework for Indigenous quantitative methods, supported by real research examples from Indigenous communities in the United States, Australia, Aotearoa, New Zealand, and Canada. It presents a more ecological approach to understanding the conception, creation, collection, analysis, and communication of Indigenous statistics.

5   Data Storage

- Are you storing data? Key considerations include:

  - Foundation: Legal Obligations

    Privacy Act 2020, s 22 =

    * **IPP 5:** Storage and Security of Personal Information.

      · Information is protected by such security safeguards that are reasonable to take against loss, misuse, access, use, modification, or disclosure by another agency.

    * **IPP 9:** Agency not to keep personal information for longer than necessary [24].

      · No longer than is required for the purposes for which the information may lawfully be used.

  - Storage location and infrastructure

    Choosing a repository to publish your data, key considerations: [2]

    * Security obligations

    * Publisher requirements

    * Community conventions

    * Institutional Policy

    * Onshore Cloud Storage

      · Māori data should be stored within Aotearoa to ensure it is subject to New Zealand jurisdiction. This is how you maintain control over Indigenous data and uplift data sovereignty.

      · Consider Māori-owned, Māori-hosted onshore storage solutions and facilities.

      · Māori should be actively involved in determining where their data is stored.

    * Te Kāhui Raraunga - Māori data sovereignty and offshoring Māori data [39]

      · Discusses how the Cloud First policy has resulted in government data being offshored with little consideration of Te Tiriti obligations. Considers broad perspectives on options for cloud storage to align with Māori data sovereignty.

    * Withdrawal rights

      · Consent is an ongoing process

      · At the design stage of data storage, there needs to be a step that allows participants to withdraw their consent.

* Decentralisation

    · Taking away decision-making authority from organisations or government agencies and placing it in the Māori collective, to enhance Māori Governance.

    · Acknowledging Māori autonomy and pursuing mana motuhake.

  * Building Indigenous Capacity

    Stephanie Russo, "Indigenous data governance: Strategies from United States Native Nations." [4]

    · Consider this article based in Arizona. It discusses how First Nations in the United States are developing strategies to assert sovereignty over their data.

    · "Strategies to reclaim and decolonise tribal data systems include improving the quality and accuracy of data, promoting Indigenous methodologies, developing local capability, and supporting self-determination."

  * Privacy protections

    · Security mechanisms to protect digital information from corruption, theft, and misuse.

    · Use encryption measures and tools to prevent data harm.

    · Enable access controls for who can see and use stored data.

Example: *Police photographing members of the public...* [33]

Highlights risks when Indigenous data is collected or stored without Free, prior, and informed consent or appropriate protection.

IndigiCloud Prototype: [47]

– This prototype is for a community cloud infrastructure designed to uphold Māori data sovereignty and allow for data management under Māori governance, following the recent Māori data governance report by Te Kāhui Raraunga.

– Data should be stored as locally as possible for the data users. This infrastructure proposes that data be based on a marae.

Further reading: Government Data Strategy and Roadmap 2021: [25]

– The report aims to monitor and report on the health of the government data system to uphold Te Tiriti and enhance public confidence.

– Pushes for an inclusive and integrated data system.

– The **Cloud-first policy** requires agencies to use public cloud services when possible; hence, this acts as a guide for agencies on Te Ao Māori perspectives of cloud storage.

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6 Data Preservation

To better protect and preserve Indigenous data, consider these factors:

Legal Obligations

- **Privacy Act 2020, s 22 =**

  - **IPP 6:** Access to personal information.

    * An individual is entitled to receive access to their personal information from an agency upon request.

  - **IPP 7:** Correction of Personal Information.

    * An individual whose personal information is held by an agency is entitled to request that the agency correct the information.

  - **IPP 8:** Accuracy of personal information before use or disclosure [24].

    * An agency that holds personal information must not use or disclose that information without taking any steps that are, in the circumstances, reasonable to ensure that the information is accurate, up to date, complete, relevant, and not misleading.

- **Statutes Amendment Bill 2024 =**

  - A part of the Privacy Act.

  - Reinforce agency liability for service providers' actions when there is a privacy breach.

  - Amendments to s 120 and s 121 by replicating terminology used in s 11 "agency" model.

  - Clarifies the importance of strong agency oversight. Improves accountability [27].

  Data stewardship: managing New Zealand's data better to change lives [22]

  - This is a guide created by the Government setting out principles, structures, roles, and tools to ensure the ethical, secure, and effective management of data by organisations.

  7 elements for effective Data stewardship: [22]

  1. Strategy and culture

  2. Rules and settings

  3. Roles, responsibilities, and accountabilities

  4. Data capability and quality

  5. People's capability and literacy

  6. Influence and Advocacy

7. Monitoring and assurance

Preservation Practices

- Monitor and Adapt

  - Privacy and data protection are fast-changing.

  - We must implement systems that can adapt and be responsive to:

    * New information and risks

    * New technology

    * New legal and ethical standards

- Transparency and Accountability

  - Build in community oversight and governance

  - Accountability measures for one's actions

  - Acknowledge weaknesses, risks, or opposition

  - Create clear protocols for community access and data correction

- Accessibility and Secondary Use

  - Enabling Māori data governance and the rights of participants to access their information.

  - Guided by Māori leadership and expertise

    * Making it permanent.

    * Making it confidential

    * Archived, open, and accessible

  - Has this data been collected to enable secondary use?

  - Is my data accessible to the relevant Māori community?

- Protection vs Accessibility

  - **Balance Between:**

    * Balancing **accessibility** with **potential harms** that could be caused.

    * Preventing misuse or exploitation of data.

  - Enhance sustainability

    * Collection, storage, and preservation practices must prioritise:

      · The **long-term needs** of Māori.

· **Environmental sustainability**

· **Cultural sustainability**: Māori determine the stories and narratives created from their data.

Example: *Benefit Sharing: Why Inclusive Provenance Metadata Matters* [9]

Biocultural and Traditional Knowledge Labels

- Labels are about encoding Indigenous provenance information and cultural responsibilities into research data. Identify and maintain provenance, origin and authority over biocultural material.

- Making the consent protocols. Outlines community expectations and consents about the appropriate use of data.

Kaitiakitanga Licence: [41]

- In development.

- Embeds tikanga customs into data licensing.

- This supports the retention of Indigenous data and intellectual property for future Māori generations through licences.

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7 The Future

- The future of Indigenous data sovereignty is fast changing. Collaboration with government agencies, organisations, and researchers must be guided by partnership, participation, and protection principles to uphold Te Tiriti obligations and the right of Māori to self-determination.

- Māori data is a taonga, and data forms a part of mātauranga Māori, which connects to telling stories of whanaungatanga, whakapapa, and whanau. Knowing this, we **must** look forward to a future data system grounded in Te Ao Māori [40].

- Follow the work of Te Kāhui Raraunga, Global Indigenous Data Alliance, and Te Mana Raraunga, through email lists and social media, to keep up to date with Māori data sovereignty Developments:

  - https://www.instagram.com/te_kahui_raraunga/

  - https://www.linkedin.com/company/tekahuiraraunga/posts/?feedView=all

  - https://www.gida-global.org/contact

  - https://indigenousdatalab.org/contact/

  - https://www.temanararaunga.maori.nz/join

  - https://www.linkedin.com/company/te-mana-raraunga-māori-data-sovereignty-network/posts/?feedView=all

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