

E-Research NZ 2019: People. Powered. Research  
20 February 2019



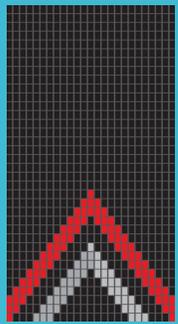
# Indigenous Data Sovereignty: Challenges and Opportunities in Aotearoa NZ

Associate Prof. Maui Hudson & Prof. Tahu Kukutai,

Faculty of Maori and Indigenous Studies

National Institute of Demographic and Economic Analysis

## Whakataukī



Kei tua o te awe mapara he tangata  
ke, he ma?

*Who makes the decisions after consent  
has been given?*

**They hang the man and flog the woman  
That steal the goose from off the common,  
But let the greater villain loose  
That steals the common from the goose.**



# International Context

Indigenous Data Sovereignty

# THE VALUE OF BIG & OPEN DATA

## **Unleashing the power of data to change lives**

Statistics New Zealand's purpose is to empower decisions by adding value to New Zealand's most important data.

A world where knowledge creates power for the many, not the few.

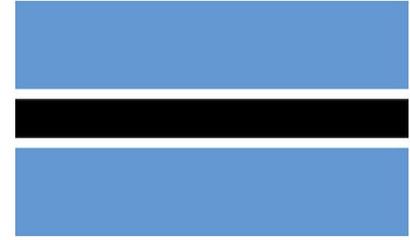
Open Knowledge Australia

## **NEW ZEALAND DATA FUTURES FORUM**

NZ IS A WORLD LEADER IN THE TRUSTED USE OF SHARED DATA TO DELIVER A PROSPEROUS, INCLUSIVE SOCIETY.

Open data can empower governments, citizens and private sector organizations to work towards better outcomes for public services ... (IOD Charter)

# INTERNATIONAL DATA WEEK



## **Six Principles for Open Science**

- a. Open Data
- b. Open Source
- c. Open Methodology
- d. Open Peer Review
- e. Open Access
- f. Open Educational Resources

## **Five Enormous Transformations**

- a. The new knowledge revolution
- b. Big Data and the Internet Explosion
- c. Social connectivity
- d. Evolutionary programming
- e. Artificial intelligence

*Keynote speech – Prof Ismail Serageldin, Bibliotheca Alexandria*

# KEY CHALLENGE: TRUSTED USE OF DATA

The **secondary use of data** is the key issue in the data use context as individuals will have agreed to its collection for its primary purpose.

Subsequent uses, without explicit permission, through data linkage, data sharing, or data aggregation, create the potential for misuse and (mis)appropriation (**kaiātanga**).

**Individuals** should **consent** for their data to be included in aggregated data resources.

**Collectives** should **govern** how those data resources are then used. This can be thought of as supporting processes of collective consent.

Collective concerns about privacy, benefits and harms can't be addressed through individually focused consent mechanisms.



A hand is shown reaching out from the left side of the frame towards a glowing, wireframe globe of the Earth. The globe is surrounded by a network of white dots connected by thin lines, suggesting a digital or data network. The background is a soft, out-of-focus blue and white light.

**WHOSE DATA ?**

**Whose control  
?**

**Whose ethics  
?**

**Whose benefit ?**

# THE CHALLENGE OF COMPETING INDIGENOUS INTERESTS

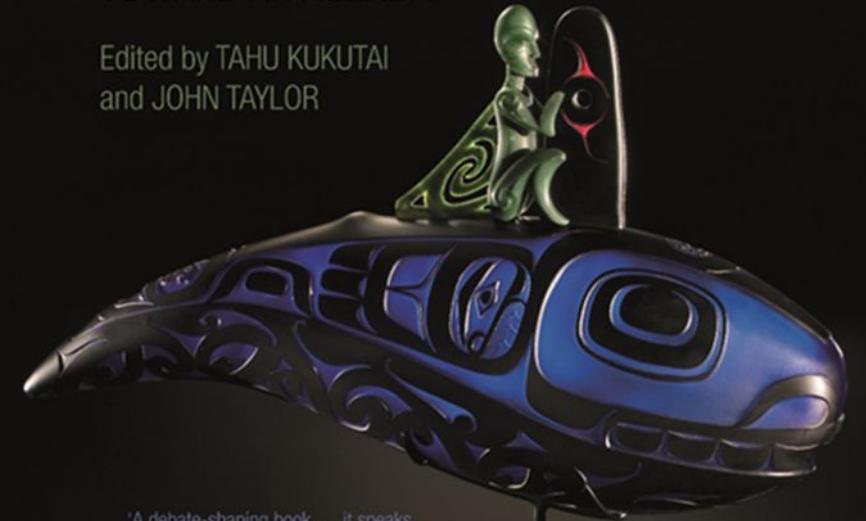
1. 'Indigenous' support for open data and open science
2. Increasing 'Indigenous' participation in cutting edge science and technology
3. 'Indigenous' aspirations for Indigenous Data Sovereignty

*Goal: for Indigenous communities to benefit from innovation and development via greater control of Indigenous knowledge and Indigenous data*

## INDIGENOUS DATA SOVEREIGNTY

TOWARD AN AGENDA

Edited by TAHU KUKUTAI  
and JOHN TAYLOR



'A debate-shaping book ... it speaks to a fast-emerging field; it has a lot of important things to say; and the timing is right.'

— Stephen Cornell, Professor of Sociology  
and Faculty Chair of the Native Nations Institute,  
University of Arizona

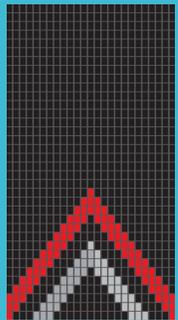


PRESS

ISBN 9781760460303 (Print) ISBN 9781760460310 (Online) CAEPR RESEARCH MONOGRAPH NO. 38

This book is available to download for free or hard copies are available to purchase from:  
[press.anu.edu.au/publications/series/centre-aboriginal-economic-policy-research-caepr/indigenous-data-sovereignty](http://press.anu.edu.au/publications/series/centre-aboriginal-economic-policy-research-caepr/indigenous-data-sovereignty)

# Indigenous Data Sovereignty

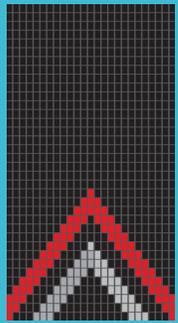


**Data Sovereignty** states that data is subject to the laws of the nation **within which it is stored**

**Indigenous Data Sovereignty** states that data is subject to the laws of the nation **from which it is collected** (including Tribal nations)

**Indigenous Data Sovereignty** is about putting **indigenous data in indigenous hands**

# IDSov: Growing global recognition



## UN Special Rapporteur on the right to privacy. Big Data Open Data Taskforce Report (A/73/45712)

“Data are a **cultural, strategic, and economic resource** for indigenous peoples”

“Existing data and data infrastructure **fail to recognise or privilege indigenous knowledge and worldviews** and do not meet indigenous peoples’ current and future data needs’.

“The Special Rapporteur encourages Governments and corporations to **recognise the inherent sovereignty of indigenous peoples over data** about them or collected from them, and which pertain to indigenous peoples’ knowledge systems, customs or territories”

# A COMMITMENT TO INDIGENOUS DATA SOVEREIGNTY (IDS) SPANS THE GLOBE

NATION-STATE BASED, INDIGENOUS LED COMMUNITIES OF PRACTICE

- TE MANA RARAUNGA MAORI DATA SOVEREIGNTY NETWORK in Aotearoa/New Zealand
- UNITED STATES INDIGENOUS DATA SOVEREIGNTY NETWORK
- MAIAM NAYRI WINGARA ABORIGINAL AND TORRES STRAIT ISLANDER DATA SOVEREIGNTY COLLECTIVE in Australia
- FIRST NATIONS INDIGENOUS GOVERNANCE CENTRE in Canada
- NASCENT: SAMI/SÁPMI in Sweden, Mexico, FIRST NATIONS, INUIT & METIS in Canada

RDA INTERNATIONAL INDIGENOUS DATA SOVEREIGNTY INTEREST GROUP



*Maiam nayri Wingara*






**CODATA**  
Committee on Data of the  
International Council of Science

Promoting Open  
Data Principles &  
Practices

Advancing the  
Frontiers  
of Data Science

Mobilising Capacity  
for Open Data &  
Open Science

[www.codata.org](http://www.codata.org)




**INTERNATIONAL  
DATA WEEK 2018**

0000  
0100  
0000  
1001  
1000

**DIGITAL  
FRONTIERS  
OF GLOBAL  
SCIENCE**

**5-8 NOVEMBER 2018  
GABORONE, BOTSWANA  
#IDW2018**

**INTERNATIONAL  
DATA WEEK 2018**

**Be FAIR and CARE  
Draft Principles of Indigenous Data**

**Collective Benefit.** Data ecosystems shall be designed and function in ways that enable Indigenous Peoples to derive individual and collective benefit.

**Authority and Control.** Indigenous Peoples have inherent rights to exercise control over Indigenous data and to make decisions that enhance control for current and future generations.

**Responsibility and Accountability.** Those working with Indigenous data have a responsibility to work with Indigenous Peoples to create meaningful evidence that supports self-determination.

**Ethics.** Indigenous ethical considerations should be a primary concern at all stages of the data life cycle.

International Indigenous Data Sovereignty Interest Group

"DIGITAL FRONTIERS OF GLOBAL SCIENCE"




Be  
FAIR & CARE

**C.A.R.E**  
**Principles for**  
**Indigenous**  
**Data**  
**Governance**

- **Collective Benefit.** Data ecosystems shall be designed and function in ways that enable Indigenous Peoples to derive benefit from the data.
- **Authority to Control.** Indigenous Peoples rights and interests in Indigenous data must be recognised and their authority to control such data respected. Indigenous data governance enables Indigenous Peoples and governing bodies to accurately determine how Indigenous Peoples are represented within data.
- **Responsibility.** Those working with Indigenous data have a responsibility to share how that data are used to support Indigenous Peoples' self-determination and community benefit. Accountability requires meaningful and openly available evidence of these efforts and the benefits accruing to Indigenous Peoples.
- **Ethics.** Indigenous Peoples' rights and wellbeing should be the primary concern at all stages of the data life cycle and data ecosystem.

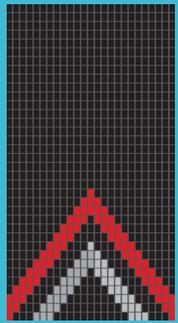


# National Context

Maori Data Sovereignty

# Maori Data Sovereignty:

## Key Players

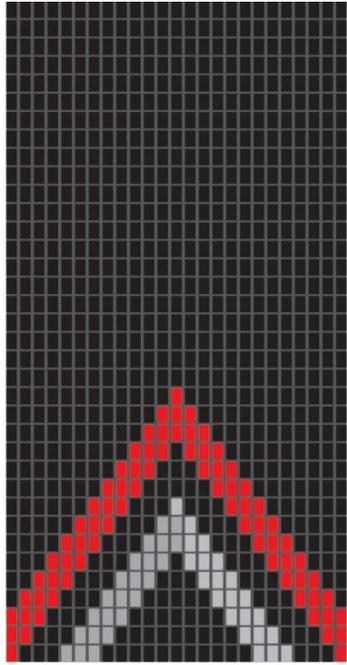


### Mana (Governance)

- **Data Iwi Leaders Group**
- Leading co-design of Māori data governance approach across the official data system

### Mahi (governance)

- **Te Mana Raraunga**
- Developing principles
- Developing frameworks for data access and control



# TE MANA RARAUNGA

Māori Data Sovereignty Network

**Advocating for the development of capacity and capability across the Māori data ecosystem including:**

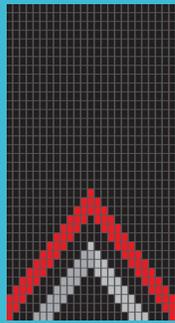
- Data rights and interests
- Data governance
- Data storage and security
- Data access and control



@MaoriDSov

<http://www.temanararaunga.maori.nz/>

# What are Māori Data?



**Māori data** refers to information or knowledge in a digital or digitisable form that is about or from Māori peoples and our environments, regardless of who controls it.

## **Data from Māori (self-generated)**

- Eg. Māori/iwi organisations and businesses

## **Data about Māori (generated by others)**

- Eg. Integrated Data Infrastructure; Research

## **Data about Māori resources (self and/or others)**

- Eg. Māori land

The ethical use of data to enhance collective, holistic wellbeing

# Principles of Māori Data Sovereignty



Brief #1 | October 2018

This Te Mana Raraunga (TMR) Brief provides a general overview of key Māori Data Sovereignty terms and principles.

TMR advocates for the realisation of Māori rights and interests in data<sup>1</sup>, and for the ethical use of data to enhance the wellbeing of our people, language and culture.

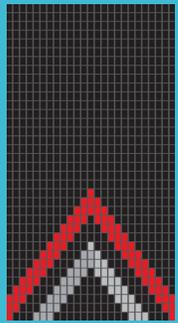
**“He rei ngā niho, he paraoa ngā kauae”**

“One must have the right principles for important endeavours.”

Download from: <http://www.temanararaunga.maori.nz/panui>

# MDSov Principles:

## Rangatiratanga



### 01 Rangatiratanga | Authority

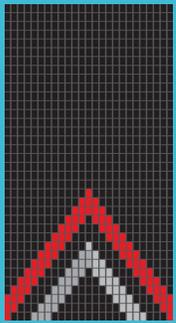
**1.1 Control.** Māori have an inherent right to exercise control over Māori data and Māori data ecosystems. This right includes, but is not limited to, the creation, collection, access, analysis, interpretation, management, security, dissemination, use and reuse of Māori data.

**1.2 Jurisdiction.** Decisions about the physical and virtual storage of Māori data shall enhance control for current and future generations. Whenever possible, Māori data shall be stored in Aotearoa New Zealand.

**1.3 Self-determination.** Māori have the right to data that is relevant and empowers sustainable self-determination and effective self-governance.

# MDSov Principles:

## Whanaungatanga



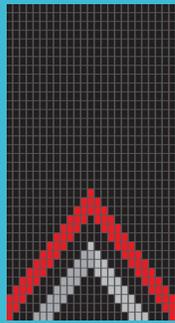
### 03 Whanaungatanga | Obligations

**3.1 Balancing rights.** Individuals' rights (including privacy rights), risks and benefits in relation to data need to be balanced with those of the groups of which they are a part. In some contexts, collective Māori rights will prevail over those of individuals.

**3.2 Accountabilities.** Individuals and organisations responsible for the creation, collection, analysis, management, access, security or dissemination of Māori data are accountable to the communities, groups and individuals from whom the data derive.

# MDSov Principles:

## Manaakitanga



### 05 Manaakitanga | Reciprocity

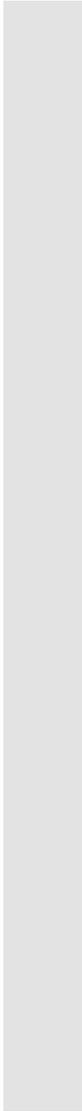
**5.1 Respect.** The collection, use and interpretation of data shall uphold the dignity of Māori communities, groups and individuals. Data analysis that stigmatises or blames Māori can result in collective and individual harm and should be actively avoided.

**5.2 Consent.** Free, prior and informed consent (FPIC)<sup>2</sup> shall underpin the collection and use of all data from or about Māori. Less defined types of consent shall be balanced by stronger governance arrangements.

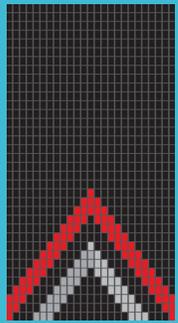


# Challenges & Opportunities

Maori Data Sovereignty / Indigenous Data Sovereignty

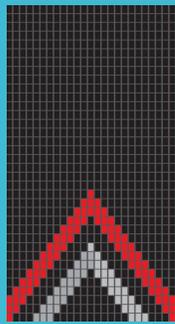


# Control serves Rights



- **Maori/Indigenous Data Sovereignty is a discourse about rights and interests**
- Indigenous / Treaty rights
- Cultural Intellectual Property rights
- Ownership – Exclusive or Shared
  
- **Control serves Rights**
- Infrastructure influences ownership and possession
- Data Governance controls access and use
- Information influences relevance and usefulness

# Challenges & Opportunities



- The priorities and values shaping the evolution of data ecosystems rarely reflect MDSov principles although there are some positive developments ....
- Still a fixation on personal data protection, privacy and consent – only partial solutions to the challenges raised by big data, surveillance technologies and AI
- Weak regulatory mechanisms and private corporate players more powerful than governments
- **Data Governance:** via participation in the governance of Indigenous data in data repositories
- **Data Access:** via integration of Indigenous values into data access processes
- **Data Analysis:** via analysis of data through an Indigenous lens.

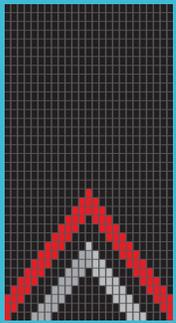
# Example: Data Governance



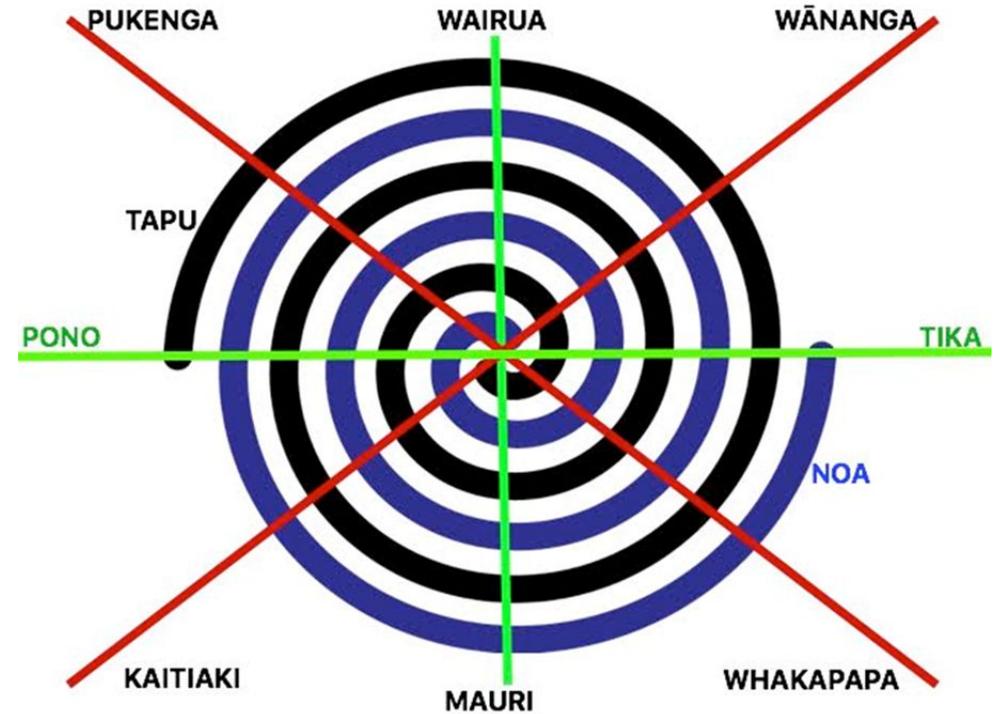
**genomics  
aotearoa**

- Challenge – how to recognise indigenous data sovereignty when publishers (and funders) expect genome sequence data to be made publically available
- Aspiration / solution - Create an indigenous genomics platform
  - Develop a Maori Data Repository
  - Develop Indigenous Origin Label
  - Articulate the “Maori/Indigenous” perspective on open data
  - Engage with publishers

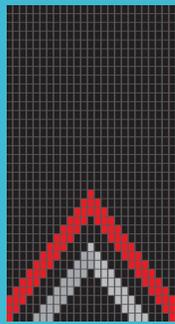
# Example: Data Access



- Uses the Takarangī to reflect the duality that informs Te Ao Māori
- Assessment of the Data
  - Sensitivity - Tapu / Noa
- Assessment of the Data Use
  - Integrity - Tika / Pono
  - Authenticity - Mauri / Wairua
- Assessment of the Data Users
  - Mandate - Whakapapa / Pukenga
  - Stewardship - Kaitiaki / Wānanga



# Adapted to the context of data



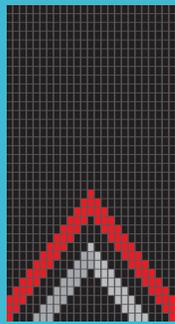
Concept	Characteristic	Assessment Question
Tapu	Level of sensitivity	"How sensitive is the data?"
Noa	Level of accessibility	"How accessible should this data be?"
Tika	Level of value	"How does the use of this data add value to the community?"
Pono	Level of trust	"Will the community support this use of the data?"
Mauri	Level of originality	"How unique is the data?"
Wairua	Nature of the application	"Is the data being used in the same spirit as its original purpose?"
Whakapapa	Level of relationship	"Does the user have an existing relationship with the data?"
Pukenga	Level of expertise	"Does the user have the expertise and experience to use data in a culturally appropriate manner?"
Kaitiaki	Level of authority	"Will the data be protected from inappropriate use?"
Wananga	Level of responsibility	"Does the institution have the necessary infrastructure to ensure the use of the data in a culturally appropriate and ethical manner?"

# ALIGNED TO THE 5SAFES FRAMEW ORK



5Safes	Māori Concept	Characteristic
Safe People	Whakapapa Pukenga	Relationship Expertise / Experience
Safe Projects	Pono Tika	Accountability Value for Community
Safe Settings	Wananga Kaitiaki	Cultural infrastructure Cultural authority
Safe Data	Wairua Mauri	Application Originality
Safe Output	Tapu Noa	Sensitivity Accessibility

# Example: Data Science Platform



- Raraunga Maori – Maori theme in Aotearoa Data Science Platform Proposal
  - undertaking Māori-led data research, upskilling both the research community and the Māori community to make optimal use of Māori data for Māori advancement.
- Research
  - Machine learning for Maori language revitalisation
  - Tikanga in Technology – issues of ethics and collective privacy
  - Maori and Artificial Intelligence – applications with environmental data and social data
- Capacity Building
  - Maori Data Science Internship programme
  - VM workshops for Data Scientists
  - Workshops on Indigenous Data Governance

HOME ABOUT US



ACTIVITIES JOIN US

MĀORI DATA SOVEREIGNTY NETWORK

HOME

# Our Data, Our Sovereignty, Our Future

<https://www.temanararaunga.maori.nz>