





A brief history of science research



- Indigenous science research era
(research *by* Indigenous communities)
- Colonial research era
(research *on/* "for" Indigenous communities)
- Emerging shift in research practice
(research *by/with* Indigenous communities)



Indigenous science research era

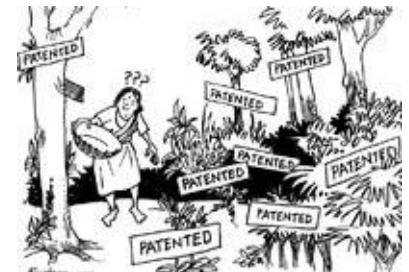
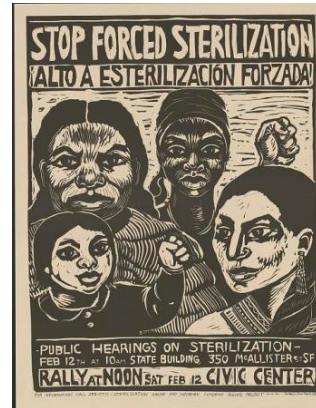
- **Intergenerational** longitudinal studies
- **Place-based** understandings
- **Relational** (*all our relations*)
- **Dynamic** (adapted, tested, refined)
- **Diverse** (thousands of Indigenous languages & ways of knowing)

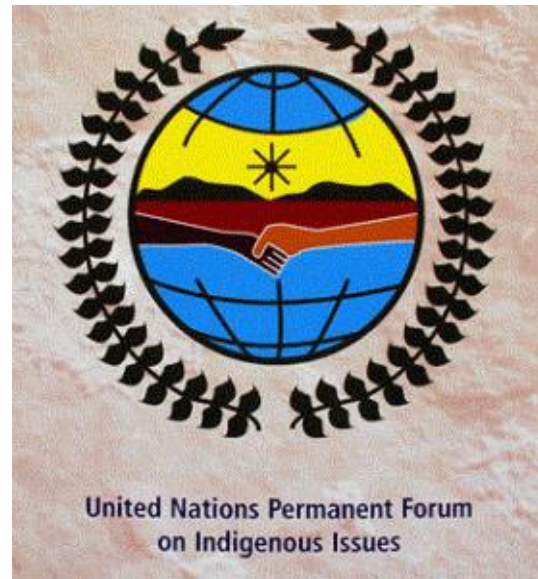
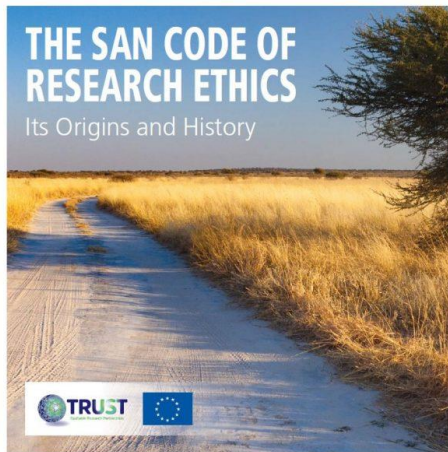
(e.g., Berkes, 2008; Cajete, 2000; Kawagley, 1993)



Colonial research era

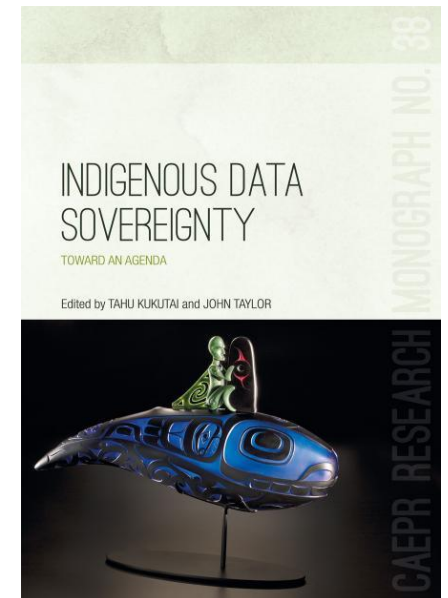
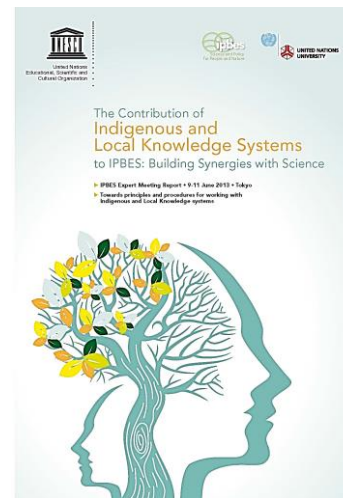
- Disruption in knowledge transmission (genocide, slavery, assimilation policies, language loss)
- Ethical misconduct (eugenics, sterilization, biopiracy)
- Extractive research methods
- “Savior” research





Emerging shift in research

- Recognition and inclusion
- Transdisciplinary research
- Codes of ethics for human rights
- Indigenous data sovereignty





**OUR PEOPLES HAVE ALWAYS
BEEN DATA EXPERTS**

WHAT ARE **INDIGENOUS DATA**?

Data, information and knowledge, in any format, that impacts Indigenous peoples, nations, and communities at the collective and individual levels:

Data about our Resources and Environments

Land, water, geology, titles, air, soil, sacred sites, territories, plants, animals, etc.

Data about Us as Individuals

Administrative, legal, health, social, commercial, corporate, services, etc.

Data about Us as Collectives – Nations and Peoples

Traditional and cultural information, archives, oral histories, literature, ancestral and clan knowledge, stories, belongings, etc.

Informed by British Columbia First Nations Data Governance Institute - BCFNDGI.COM

USINDIGENOUSDATA.ORG | @USIDSN

INDIGENOUS DATA SOVEREIGNTY

The *right* of Indigenous peoples and nations to govern the collection, ownership, and application of their data.

1

Rights to govern peoples, lands, and resources.

2

Genesis in traditions, roles, and responsibilities.

3

Human rights framework and court cases, treaties, and/or recognition.

4

Collective rights:

- Data for governance
- Governance of data.

For more information see the US Indigenous Data Sovereignty web site usindigenousdata.arizona.edu.

Definition from Rodríguez-Lonebear, D., and Rainie, S.C. (2016). US Indigenous Data Sovereignty founding documents.

Much of the language regarding rights and framing comes from the charter of Te Mana Rauunga, the Maori Data Sovereignty Network in Aotearoa/New Zealand. Available at www.temanarauunga.maori.nz.

See also, Kukutai T & Taylor J. (Eds). (2016). Indigenous Data Sovereignty. Canberra: Australian National University Press.

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**INVOLVEMENT OF LOCAL PEOPLE
AND THEIR LOCAL, TRADITIONAL, OR INDIGENOUS
FORMS OF KNOWLEDGE IN DECISION MAKING IS
CRITICAL FOR ENSURING THEIR SECURITY**

Adger et al., 2014, IPCC Working Group II

**INDIGENOUS, LOCAL, AND TRADITIONAL
KNOWLEDGE SYSTEMS AND PRACTICES ... ARE A
MAJOR RESOURCE FOR ADAPTING TO CLIMATE CHANGE**
(ROBUST EVIDENCE, HIGH AGREEMENT)

Field et al., 2014, IPCC Working Group II

”



“

**EFFORTS AIMED AT THE TRANSLATION OF CLIMATE
INFORMATION AND ASSESSMENTS
INTO MEANINGFUL ACTIONS
SHOULD SUPPORT INTEGRATION OF INDIGENOUS
PERSPECTIVES IN A SUSTAINED WAY THAT
BUILDS RESPECTFUL RELATIONSHIPS AND
EFFECTIVELY ENGAGES INDIGENOUS COMMUNITIES**

Maldonado et al., 2015, Indigenous Peoples Climate Change Working Group

”


THE BIG QUESTION

HOW ARE CLIMATE RESEARCH STUDIES ENGAGING INDIGENOUS KNOWLEDGE SYSTEMS AND COMMUNITIES WHO HOLD THEM?

Environmental Research Letters

TOPICAL REVIEW • OPEN ACCESS

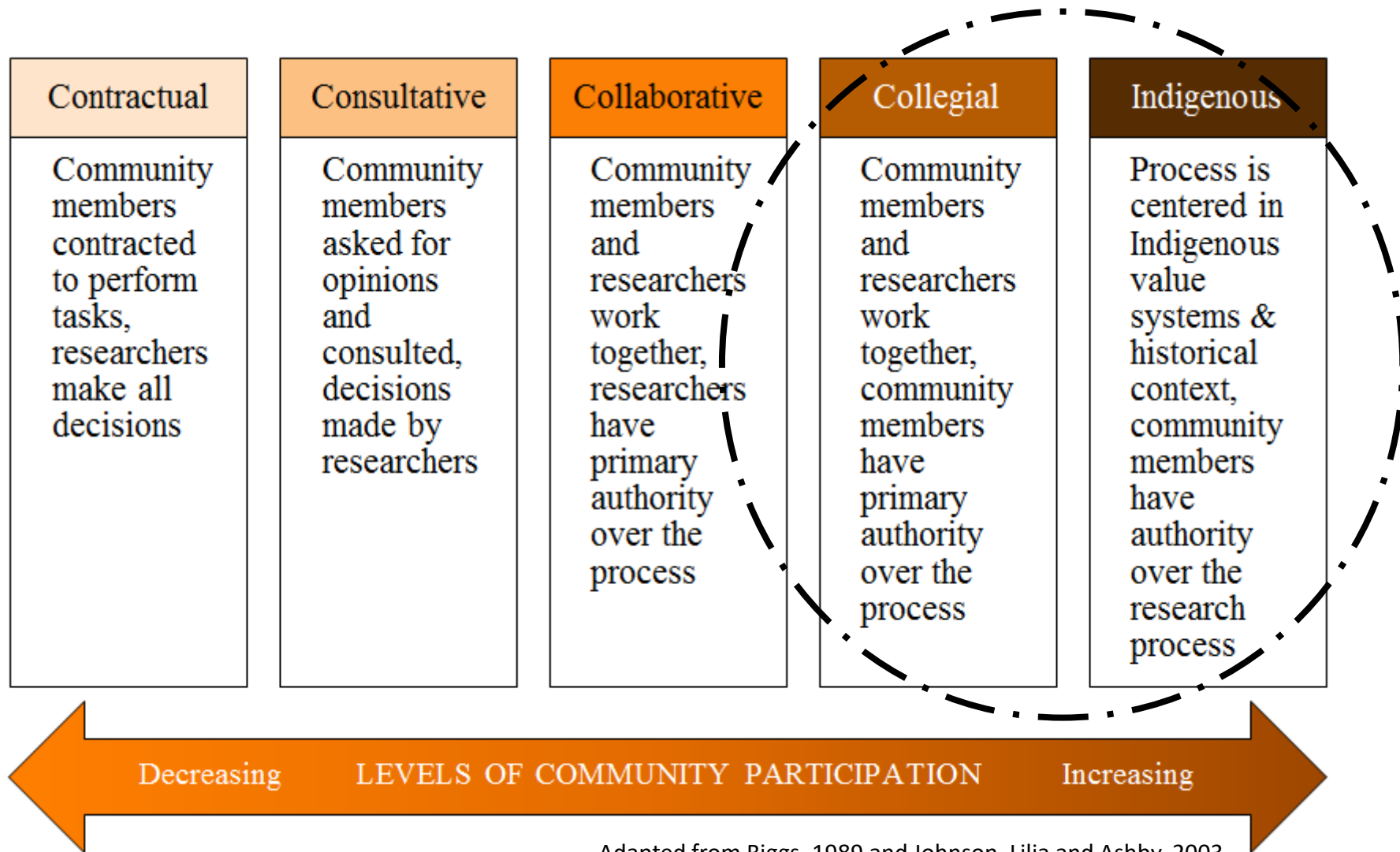
A global assessment of Indigenous community engagement in climate research

Dominique M David-Chavez¹  and Michael C Gavin^{1,2}

Published 13 December 2018 • © 2018 The Author(s). Published by IOP Publishing Ltd

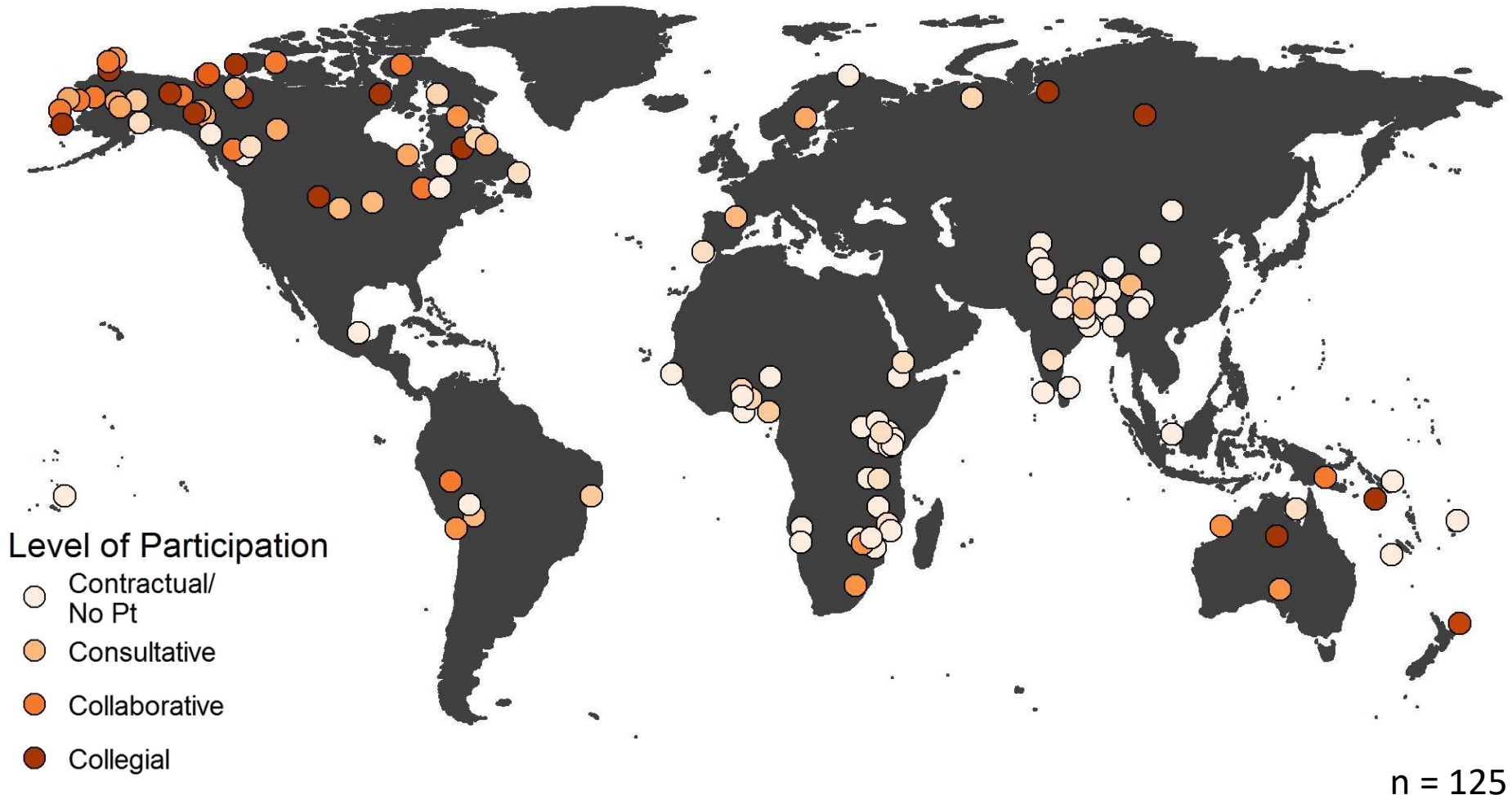
[Environmental Research Letters](#), Volume 13, Number 12

Indigenous data governance

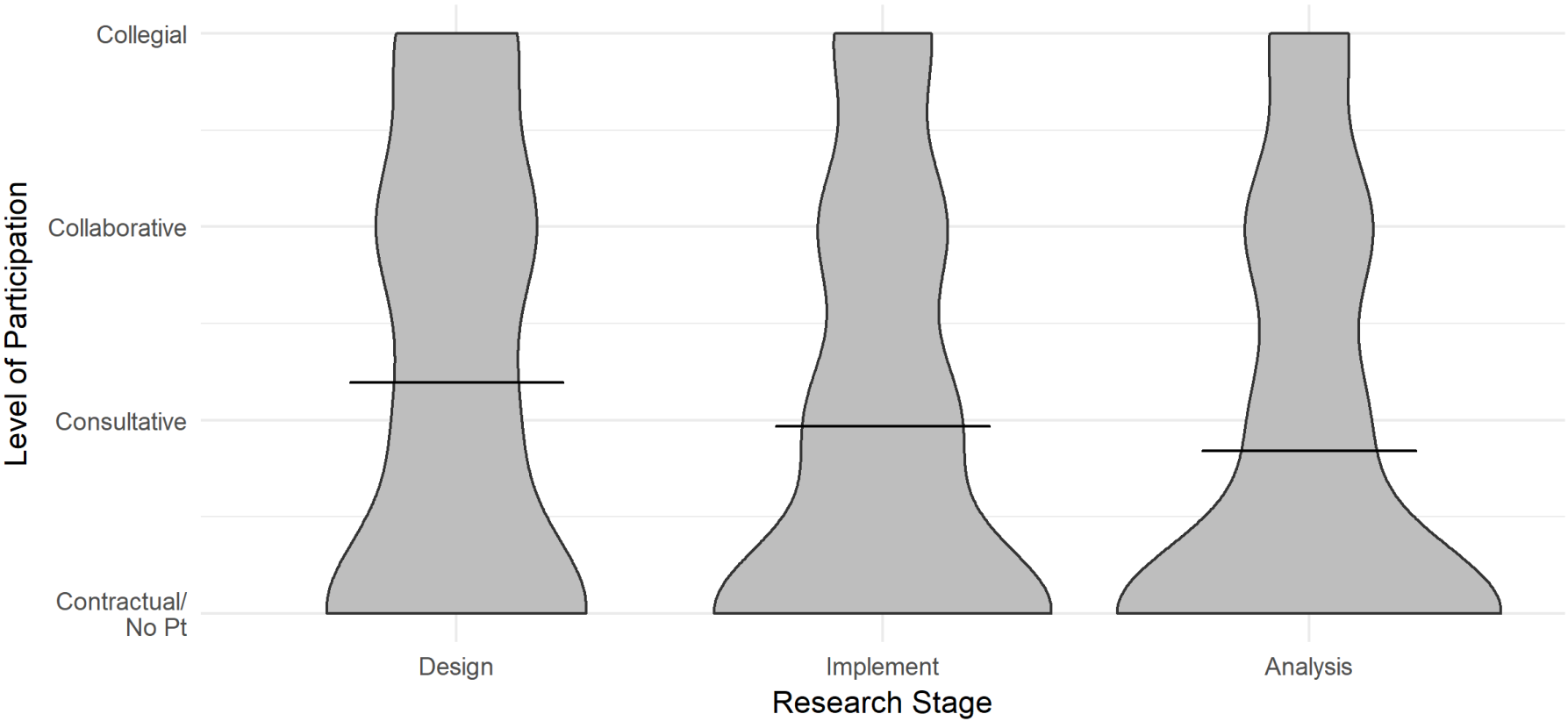


Adapted from Biggs, 1989 and Johnson, Lilja and Ashby, 2003

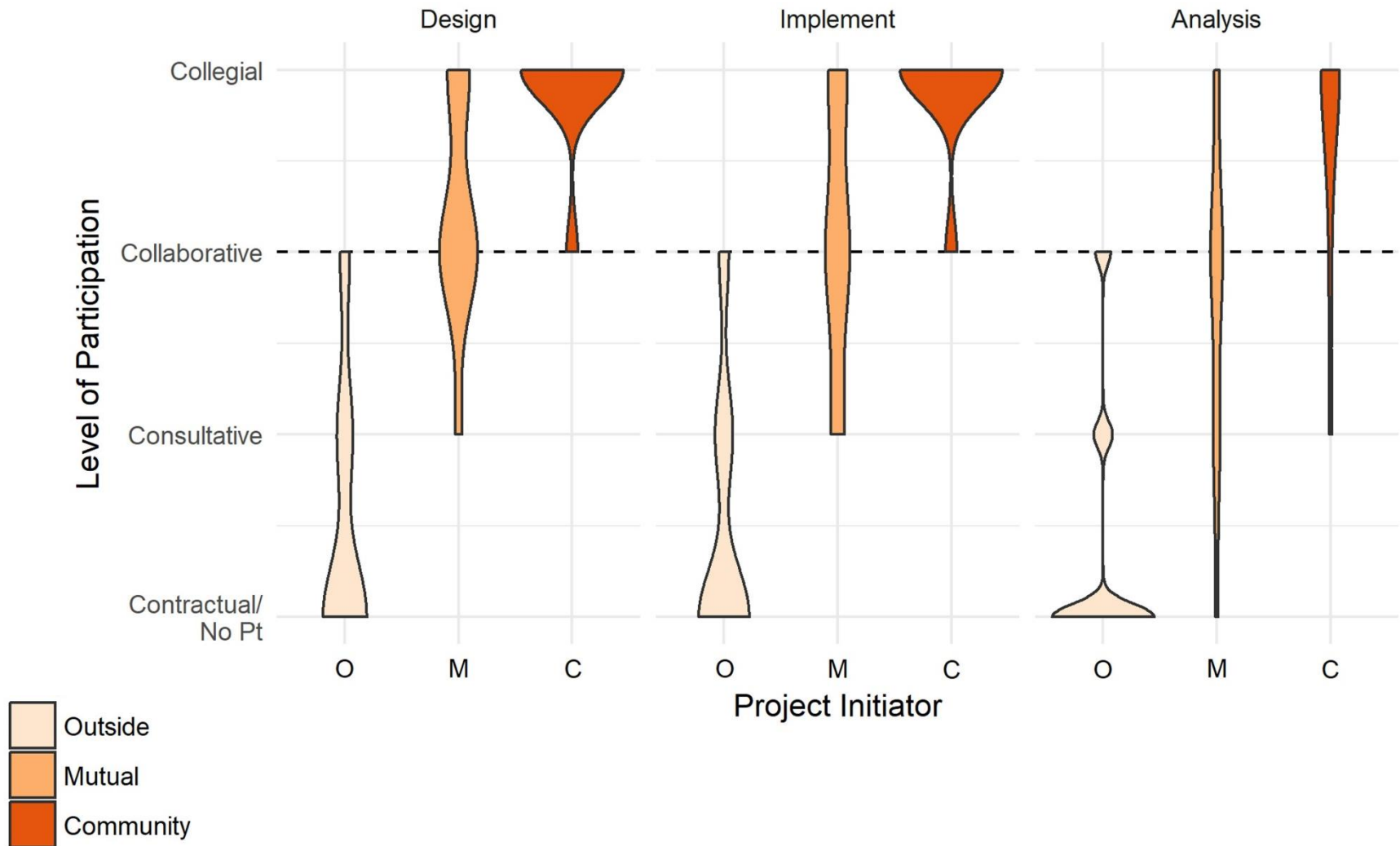
The vast majority (87%) of climate studies practice an extractive model in which **researchers use Indigenous knowledge systems with minimal participation or decision-making authority from communities who hold them**



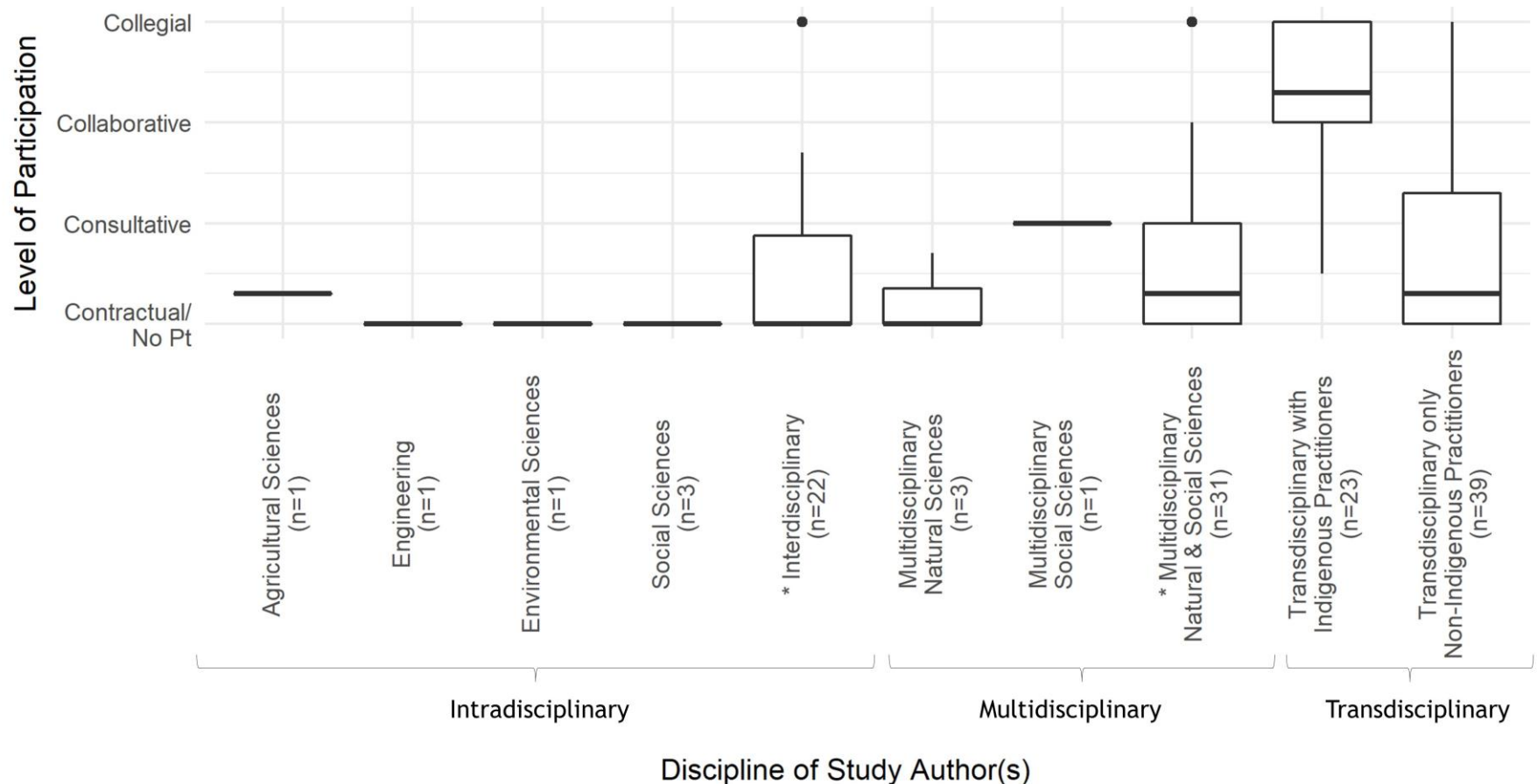
Levels in Indigenous Community Engagement



Climate studies initiated with participation of Indigenous community members maintain **higher levels of engagement** throughout the length of research



Transdisciplinary climate studies authored with Indigenous practitioners demonstrate **higher levels of community engagement in the research**



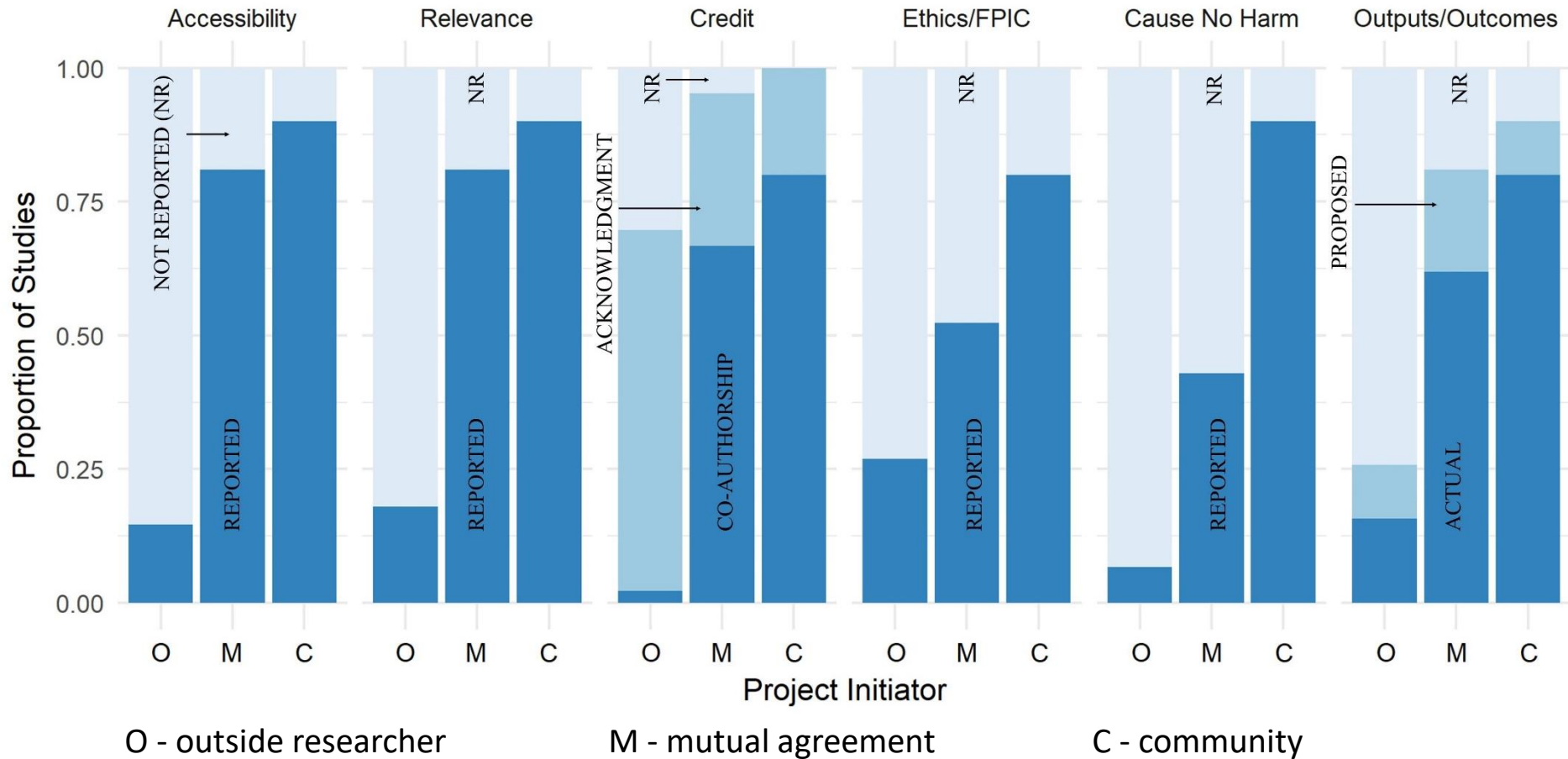
*Outliers represented two Indigenous scientists from the community

Quality indicators for responsible research

1. Are findings **ACCESSIBLE** to Indigenous community members?
2. Are findings reported in the context of **RELEVANT** Indigenous community concerns, issues or interests?
3. How were community members **CREDITED** for knowledge contributions (acknowledgement, co-authorship)?
4. Did the study report **ETHICAL** guidelines followed, such as free prior and informed consent (**FPIC**)?
5. Did the study address intellectual property rights or risks for community (to “**CAUSE NO HARM**”)?
6. Did the study report any **OUTPUTS** or **OUTCOMES** for the community?

QUALITY INDICATORS IDENTIFIED IN STUDIES

1. Community access to findings
2. Relevance of findings to community
3. Credit given to knowledge holders
4. Ethical guidelines/FPIC followed
5. 'Do no harm' (intellectual property risks)
6. Outputs/outcomes for community



10 Questions to Guide Responsible Research Practice with Indigenous Communities

- ① Are Indigenous community members included in the **decision to initiate** the study?
- ② To what level do Indigenous community members have authority in the **research design** (None/Contractual, Consultative, Collaborative, Collegial, Indigenous)?
- ③ To what level do Indigenous community members have authority regarding the **implementation** of the research?
- ④ To what level do Indigenous community members have authority regarding the **analysis** of the research?
- ⑤ Are findings **accessible** to Indigenous community members?
- ⑥ Are findings reported in the **context** of concerns, issues or interests defined by Indigenous community members?
- ⑦ How were Indigenous community members **credited** for their knowledge contributions and efforts (i.e., acknowledgement, co-authorship)?
- ⑧ Did the study report **ethical guidelines** followed, such as Free Prior and Informed Consent?
- ⑨ Did the study address **intellectual property rights** or risks for Indigenous communities?
- ⑩ Did the study report any **outputs or outcomes** for the Indigenous community?

THE TAKE HOME

QUALITY IN RESEARCH PRACTICE
REQUIRES A SHIFT FROM THE
CURRENT EXTRACTIVE MODEL TO
STUDIES BY AND WITH
INDIGENOUS COMMUNITY MEMBERS

CONSIDER HOW RESEARCH DESIGN INFLUENCES
BROADER SOCIAL IMPACTS



US Indigenous Data Sovereignty Network

Hosted by the Native Nations Institute at the University of Arizona

HOME MEMBERSHIP SPOTLIGHT RESOURCES JOIN THE NETWORK ABOUT US CONTACT US

"When tribal nations collect data we are telling our story in our own way. As promoters of data, we information gatherers and information keepers. Just as our ancestors we look at essential information tell the stories. These new stories are being told to sustain our people and forge our future."
- Patricia Riggs

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INTERNATIONAL SOCIETY OF ETHNOBIOLOGY

AN ALLIANCE FOR BIOCULTURAL DIVERSITY

Who We Are What We Do Code of Ethics Get Involved Members Forum

Resources

Home » What We Do » Core Programs » ISE Ethics Program » The ISE Code of Ethics

The ISE Code of Ethics

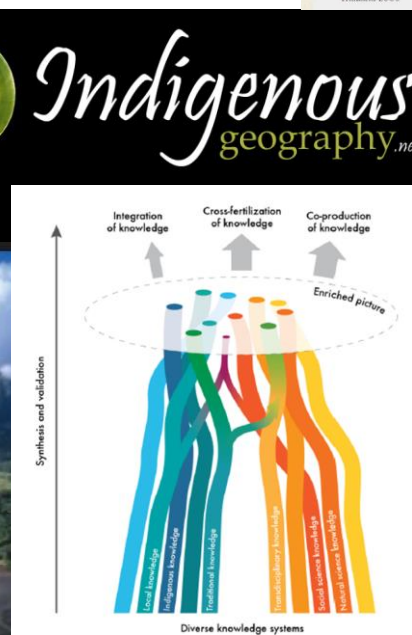
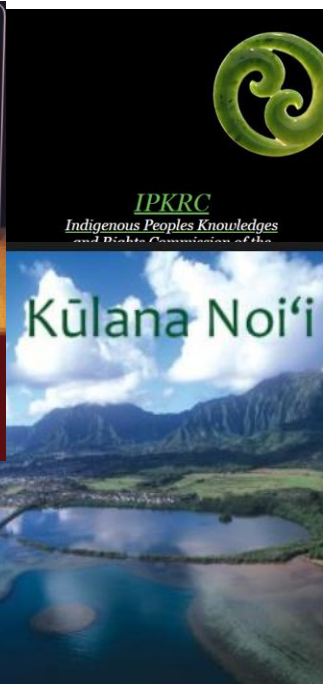
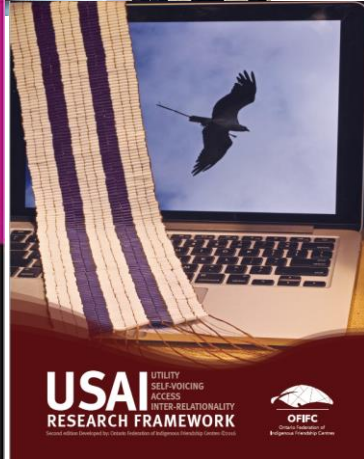
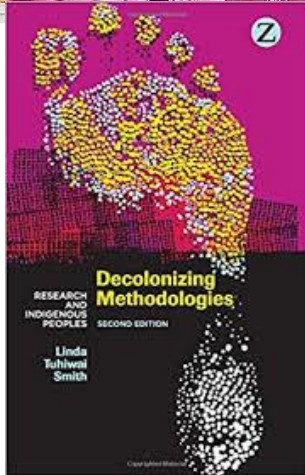


ISE Ethics Workshop, Thailand 2006

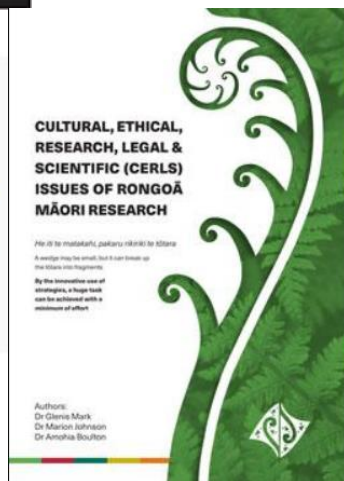
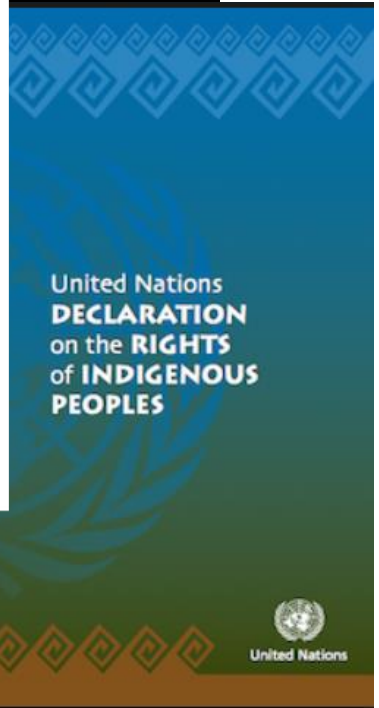
The Code of Ethics of the International Society of Ethnobiology has its origins in the [Declaration of Belém](#), agreed upon in 1988 at the founding of the International Society of Ethnobiology (in Belém, Brazil). The Code of Ethics was initiated in

What We Do

[Core Programs](#)



Tengö et al. 2013




Te Mana Raraunga - Māori Data Sovereignty Network Charter

He whenua hou, Te Ao Raraunga
Te Ao Raraunga, He whenua hou¹



Hahóm – thank you!

dmdchavez@email.arizona.edu

 [@Indiginerd](https://twitter.com/Indiginerd) #DecolonizeScience



Reflection break.

- Reflect on what you've learned in this session with another person sitting near you.
- Feel free to also use this time to peer-review questions you may have for the Q & A discussion.