



Background Paper 1

Potential Framework for Integrating Indigenous Knowledge / Experience with Science, Technology, and Innovation

1. Overview:

Several initiatives have been underway within the UN system including the multistakeholder Science, Technology Forum to help bridge the gap with technological inequalities amongst the Indigenous communities worldwide. However, to-date, Indigenous Peoples are treated only as "observers" and not contributors / co-creators / participants. We have an opportunity to change it through this STI Forum with their inclusion as stakeholders.

Indigenous Knowledge has a valuable role to play in disaster risk reduction and it should be recognized and protected accordingly. All too often, mainstream disaster management institutions have ignored Indigenous knowledge, and many successful local practices have disappeared because of non-Indigenous influence. However, Indigenous Peoples have adapted to changing environments and Indigenous communities hold time-tested knowledge and coping practices developed through their intimate connection with their natural surroundings that make them resilient to climate-related natural hazards and disasters. This knowledge is a living practice, which can adapt in response to changing circumstances.

2. Vision and Mission:

Indigenous Peoples want sustainable solutions from the perspective of their Indigenous science and knowledge, possibly through their own institutional and organizational mechanisms. The global STI community needs to involve and platform Indigenous knowledge in the process of knowledge production. At the same time, Indigenous Peoples need to adapt emerging frontier technologies by educating a skilled workforce, building innovative tools and markets, and establishing informed decision- and policy-making.

3. Objectives:

The use of Indigenous Knowledge alongside scientific knowledge is increasingly advocated but there is yet no clearly developed framework demonstrating how the two may be integrated to address the Sustainable Development Goals (SDGs)..

Based on past work from <https://doi.org/10.1111/j.1467-7717.2009.01126.x> the objective here is to formulate a framework, using a participatory approach in which relevant indigenous and scientific knowledges may be integrated for achieving the SDGs.



4. Scope:

Intended uses of the framework / model of change.

The proposed framework is an important first step for the UN STI community and the global Indigenous communities in identifying how Indigenous Knowledge and science may be integrated to meet the SDGs.

5. Issues:

Understanding the issues and processes

- The challenges of incorporating and not exploiting or diminishing Indigenous Knowledges: the process of integrating knowledge types can lead to the extraction, erosion and depoliticisation of Indigenous Knowledge.
- Conflicts may arise between knowledge types during processes that seek to integrate Indigenous Knowledge and science. These conflicts should not be ignored or avoided but used as an opportunity for learning.
- Performance indicators which are respectful to different knowledges, and do not default to scientific or Western approaches to measurement and quantification.
- Ensuring non-Indigenous peoples accept and respect Indigenous knowledges.
- Depoliticization of Indigenous Knowledge and Indigenous concerns -- There is a need to acknowledge and address unequal power dynamics in the process of integrating knowledge types, and avoiding replicating colonial power structures. There is a global discourse that views Indigenous peoples as custodians of the environment. Without diminishing the efforts of Indigenous peoples in terms of environmental management, this dominant means of framing Indigenous peoples can erase their political concerns (e.g., issues around self-determination). Therefore, when integrating Indigenous Knowledge and Western science, it is important to consider for what purpose Indigenous Knowledge is being used and how it is incorporated. Within disaster risk reduction specifically, there is a tendency to view of disasters as 'natural' when there are social and political drivers that create them, such as colonisation.
- Discourses implying a dichotomy of 'experts' and Indigenous Peoples: This dichotomous thinking is harmful and in practice is being broken down. This work needs to ensure that this dichotomy is not further entrenched. Expert discourses (e.g., scientific, legal) possess strong legitimising potential and can lead to further marginalisation of local knowledges, including Indigenous Knowledge (<https://doi.org/10.1016/j.geoforum.2017.03.027> and <https://doi.org/10.1016/j.geoforum.2021.02.007>)
- Need to combine flexibility with avoiding vague notions of participation. There should be recognition of the nature of participation, the degree of participation, and the power imbalances that will impact participation. - e.g., thinking about on whose term's participation happens.
- There is a need to platform knowledge production led by Indigenous Peoples that has been done historically and continues to be carried out across the globe. This work may not be initiated, supported or funded through major institutions, but has great value to inform STI knowledge.



6. Framework structure

- Overall ethos of the framework integrating Indigenous and scientific knowledge
- Specific steps within the framework
- Emulating how it works in practice, learning from its implementation in Papua New Guinea <http://islandvulnerability.org/png.html>
- Ensuring transferability to and adjustment in other contexts, especially for application and for documenting (i) what is and is not transferable and (ii) how to adjust adequately. Case study: <https://www.isfmi.org/>

Global frameworks	National frameworks (examples)	The framework being developed – as a bridge between global/national frameworks and local action	Indigenous community frameworks (examples)
SDGs	Truth and Reconciliation Commission (Canada)		Mattagami First Nation (Canada): The Harmony Movement: <ul style="list-style-type: none"> • Tradition and Culture • Land and Infrastructure • Economic Development • Inclusivity and Advisory • Financial Excellence • Policies and Codes • Capacity Development



			Inupiat, Alaska: Inupiaq learning framework
UNDRIP			
Sendai Framework			
The Convention on Biological Diversity (CBD)			
UNFCCC	Local Communities and Indigenous Peoples Platform (LCIPP)		

7. Expected outcomes

- Respect for different knowledge types and methods for integrating them
- Recognition on integrating in different ways and when integration might not be suitable
- An attention to power relations as being inherent to the process of integrating Indigenous Knowledge and science

8. Scalability and flexibility

- Scaling might be up (generalizing) or down (contextualizing)
- Indigenous sustainability's: Indigenous peoples are not a homogenous group and there are significant discrepancies in their levels of political autonomy globally. Framework needs to be flexible to allow differences to be accommodated.
- Ensuring that different approaches for adjusting and connecting are adopted.
- At each stage, it is important that action is relevant and flexible to Indigenous concerns and priorities. While the framework outlined here is important, it needs to be guided by Indigenous peoples and Indigenous Knowledge holders for implementation.