



CIOOS Atlantic's Literature Review Overview:

The Canadian Integrated Ocean Observing System (CIOOS) is dedicated to building partnerships with researchers, scientists and centres of expertise in ocean sciences. Building these relationships involves recognizing that Indigenous peoples play a special role in the area of ocean stewardship and care, as they have held an innate relationship with the natural environment since time immemorial. CIOOS Atlantic is exploring ways to build relationships with Indigenous communities in Atlantic Canada, including through developing an understanding of how Indigenous Traditional Ecological Knowledge (TEK) can be successfully coordinated or utilized alongside western scientific systems. In support of this exploration, a Literature Review was conducted to look at case studies where Indigenous knowledge was digitized, in addition to the factors that enabled successful outcomes in digitization, and the inherent risks and limitations involved in the digitization of TEK. Alternative approaches for collaboration were researched including Participatory Mapping, Community-Based Research, and Structured Decision Making.

Literature Review Objectives

1. To reveal cases where TEK has been collected, digitized and the meta(data) made open under some or all of the FAIR data principles (Findable, Accessible, Interoperable, and Re-Useable)
2. To identify the important enabling factors that notably contributed to successful outcomes in digitization
3. To identify and explore any risks and limitations with the digitization of TEK and provide recommendations for CIOOS Atlantic to consider based on the resources investigated

Key Findings and Recommendations

- There are **many successful digitization projects** that have used both western technology and Indigenous knowledge systems.
- As CIOOS Atlantic continues to build more partnerships with Indigenous communities in Atlantic Canada, **careful consideration should be taken to ensure local protocols and guidelines are followed.**
- CIOOS Atlantic should carefully consider research methods employed to engage with Indigenous peoples, paying close attention to historical trauma and Eurocentric tendencies of the past.
- The **risks of digitizing TEK need to be fully understood**, paying close care and attention to Intellectual Property ownership and decontextualization. Mitigation measures should be put in place to avoid the exploitation of TEK. Further, **the digitization of TEK should be initiated by or with Indigenous communities.**
- CIOOS Atlantic should **hold engagement meetings to better understand Indigenous communities' ocean observing needs** on the Atlantic coast. Similarly, **relationships should be reciprocal and benefit the communities involved.**
- Care should be taken to **ensure that the data CIOOS houses has been collected ethically and appropriately** with any Indigenous communities involved.
- **Recommendations for CIOOS Atlantic are primarily value and process based, rather than action based.** Future actions will be determined by interested communities and groups who want to work with CIOOS.