COMMUNITY-BASED ENVIRONMENTAL MONITORING (CBEM) FOR MEANINGFUL INCORPORATION OF INDIGENOUS AND LOCAL KNOWLEDGE WITHIN THE CONTEXT OF THE CANADIAN NORTHERN CORRIDOR PROGRAM

Evgeniia (Jen) Sidorova and Luis D. Virla

KEY MESSAGES

- The Canadian Northern Corridor (CNC) extends over various provinces in the Canadian North and near-North and would cross the areas mostly classified as treaty land (historical and modern) on which the rights, needs and priorities of Indigenous and local communities touched by the CNC must be respected and exercised.
- Indigenous and local knowledge (ILK) is a cornerstone for the co-production of sustainable strategies for planning and developing infrastructure across middle and northern Canada. Meaningful incorporation of ILK during planning, execution and monitoring of infrastructure development and operation within the CNC concept must be done to consider the rights, expectations and priorities of the Indigenous and local communities impacted by the development of this concept.
- Community-based environmental monitoring (CBEM) could serve as a powerful strategy to incorporate ILK within the CNC concept because CBEM provides an opportunity for communities to meaningfully engage in identifying existing and potential environmental impacts of infrastructure development. CBEM consists of the gathering and overseeing of environmental, cultural, linguistic and social impacts led and conducted by Indigenous and local community members with or without the involvement of external agencies such as researchers and government agencies. CBEM involving Indigenous Peoples supports commitments made under the *United Nations Declaration on the Rights of Indigenous Peoples Act.*
- Indigenous leadership, technology usage, equal partnership with Indigenous and local communities and availability of institutional guidelines were identified as elements required for the success of CBEM programs within the CNC concept. In addition, technical, organizational, financial and environmental issues were recognized as potential challenges to meeting the goals and objectives of CBEM within the CNC concept.

- The study identified the codes and subcodes that were incorporated into a framework for the assessment of successes and challenges in the implementation of CBEM programs in Canada. The CBEM implementation framework (CBEM-IF) was tested with real-life CBEM case studies conducted in provinces across middle and northern Canada relevant to the CNC: berry pollution monitoring (AB), water quality monitoring (AB, BC, NWT, NT, SK and YT) and caribou monitoring (QC and NL). The resulting analysis indicated that CBEM supports the development of climate change adaptation programs that incorporated ILK. CBEM offers enhanced community relationships between the government and the private sector. CBEM also brings an opportunity to strengthen action plans through the incorporation of non-quantitative elements of ILK such as holistic and spiritual components, otherwise neglected by conventional Western scientific approaches.

- Experiences of the evaluated case studies also emphasized expected challenges associated with lack of adequate administrative and legal structures at the provincial, territorial and federal levels, high reliance on volunteers, lack of standardized methods, focus on specific types of the landscape and general issues with ILK incorporation into science and policy issues due to the incommensurability of Western science and the ILK epistemologies. CBEM implementation strategies for the CNC should include mitigation strategies for these challenges to reduce implementation barriers and negative impacts from CBEM deployment.

- Indigenous-led CBEM projects could help to facilitate reconciliation between Canada and Indigenous Peoples as they provide genuine representations of environmental monitoring, which are deeply rooted in ILK and language, traditional values, legal traditions and practices of environmental management associated with the meaningful exercise of Section 35 rights. This study also identified the other factors that are crucial for the meaningful incorporation of ILK into CBEM programs such as the presence of sufficient short- and long-term funding opportunities for CBEM projects, partnership with bridging organizations, the recognition of ILK as intellectual property and building a legal space for CBEM programs in national and provincial/territorial legislations.

- Further research is required to design the specific CBEM programs that could be adjusted to specific locations and types of infrastructure projects related to the CNC concept.