Standards and practices for use of Local and Indigenous Knowledge in BBN models

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Standards and practices for use of Local and Indigenous Knowledge in BBN models should include the following:

- Carefully consider the identification and selection of key knowledge holders, taking into consideration differences in knowledge holding, and determine the level of their representation using purposeful sampling and thematic saturation to define the sample and its size

- Create a respectful collaboration process between scientists and knowledge holders to facilitate mutual learning and empowerment and where LK holders retain ownership of the data and information and control over the knowledge, the validation process, and the application of the knowledge

- Facilitate mobilization of LK. This could also involve using triangulation or other approaches to validate LK quality (but not in comparison to scientific or other knowledge) – i.e. conducting multiple group discussions or consultations and individual interviews to ensure the reliability of both quantitative and qualitative input to the BBN model construction (this involves aspects of negotiation)

- Be transparent and inclusive in framing the scope and objective of the BBN model and use concepts important to local perceptions and understanding (i.e. involves aspects of translating), focusing on problems and solutions of relevance to local communities. Ideally, the information provided by the model output should be interpreted unambiguously by both the analyst and the communities

- Involve knowledge holders in the overall model design and the analyses and interpretations of the findings by presenting to and discussing each step along the way (i.e. negotiation and synthesis) with study participants to avoid misinterpretation

- Produce tools operationalizing technical models accessible to communities (i.e. apply) and be very clear about the risks of misconception if the tool is not used appropriately

- Explore options for making the underlying LIK in the BBN model explicit and viewable to the user acknowledging LIK intellectual property rights

For ethical requirements, the following points must be considered:

- Consult with all relevant regional, local, and/or indigenous institutions about the proposed research, inquire about previous and ongoing community research and priorities, and collaborate appropriately. This includes initiating community contact as early as possible, identifying community representatives and striving to build meaningful relationships based on good faith and partnership.

- Adhere to local and Indigenous traditions, customs, and locally adopted research guidelines, permitting requirements, or specific protocols. This includes learning about the region's history, cultures, languages, community perceptions of past and current

research conducted in the region, and organizational structures, practices, values, and institutions.

- Seek <u>approval</u> from various entities and <u>informed consent</u> from participants. This requires a description of the research in a plain and local language that discloses methods, sponsors, purposes, and objectives.

- Ideally, the research project should be co-developed by determining the objective and boundaries of the BBN model in collaboration with the community, but as a minimum, ensure that it <u>addresses problems significant</u> to the communities and participants.

- Developing and presenting the research plan, make sure to address community concerns and expectations for the project. Provide structures for <u>shared decision-making</u>. Be aware and respectful of indigenous peoples' practices and protocols for accountability.

- Determine and <u>enable the appropriate level of community involvement</u> (to both the community and the project) in all stages of developing and implementing the BBN model – including design, analysis, and interpretation. Make all efforts to provide communities and participants information to make informed choices regarding their involvement and contribution to the research. Keep communities and participants informed about research progress and results throughout the research. Include community involvement in all phases of the research effort.

- Determine and describe clearly and in advance who collects, owns, manages, evaluates, and disseminates the data and the privacy rights in relation to beliefs entering into the creation of the BBN model. A <u>clear understanding of data ownership</u> and how data will be treated, including with regard to the <u>anonymity</u> of respondents, allow projects to proceed with a shared understanding of data governance and ownership. Guarantee and uphold anonymity if desired by respondents. Identify potentially sensitive data and observations with individuals and/or the community and establish measures to reduce the likelihood of any <u>harm</u> to individuals or the community. <u>Time</u> research activities to avoid disturbing participating community members and knowledge holders during peak hunting, fishing, harvesting, gathering or other seasonal activity periods.

- Present research outputs to local communities in plain and, if possible, the local language using <u>appropriate and effective means of communication</u>. Research participants should have the <u>right to review</u> all products to ensure they have been represented correctly before publicly disseminating them. Researchers should inform how they are used and share all products with participants. Indigenous concepts or words should be written, and orthography used in publications with explanations in other languages.

- Include an <u>assessment of the feasibility</u> of implementation and the long-term sustainability of research recommendations within the community. Provide assistance in affecting policy implementation of research recommendations.

- <u>Disseminate</u> research findings while respecting confidentiality and design dissemination strategies involving community partners for both academic and community-level distribution (newsletters, videos, lay publications, TV, and radio). The research participants should be accredited in publications, lectures etc.