

The integration of Indigenous knowledge climate data for effective adaptation strategies: notes from the academic debate

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Thank you, Mr. Chair. Excellencies, distinguished delegates, fellow presenters. My name is Renzo Taddei. I am an associate professor of Anthropology and Social Studies of Science at the Federal University of São Paulo, in Brazil. It is an honor to contribute to this Seventeenth Research Dialogue under SBSTA 62. My talk will complement that of Professors Shipper and Mukherji.

The importance of integrating Indigenous knowledge in climate change research, particularly in adaptation, has gained unprecedented recognition and support over the last decade. The Scoping of IPCC's AR7, produced in Hangzhou, China, in February 2025, for instance, mentions Indigenous peoples 21 times, in items related to all three Working Groups. This is truly remarkable. And it signals tremendous challenges ahead for the IPCC's work and academia in general.

I will list the most pressing gaps in research that I have identified. Given the immense and growing body of literature, this analysis cannot be exhaustive. I will present what I consider to be the most critical absences and gaps, including some aspects of how the debate is framed.

From the perspective of Earth System sciences, attention to Indigenous knowledge systems is primarily driven by demonstrated robust correlations between their traditional modes of life and knowing, and biodiversity conservation (despite the diversity that exists within the world of self-identified Indigenous peoples). The interest is, in general, utilitarian and pragmatic. There is also a growing body of evidence that protecting local biomes is an integral element in most Indigenous communities' adaptation strategies.

The most common elements of Indigenous knowledge systems that attract the attention of the Earth System sciences and multilateral scientific panels are environmental change indicators, as observed by Indigenous individuals in their territories, and secondly, their adaptive strategies, again, on the scale of the territory.

The first research gap identified here refers to geographical and thematic disparity in available data. Scientific research on adaptation, for instance, is mainly fragmentary, illuminating some activities in some regions, like Indigenous agricultural practices in Africa, the sophisticated knowledge and practices related to the ice ecosystem among the Inuit and other Arctic Indigenous groups, the strategies for dealing with sea level rise and flooding in Bangladesh and the Philippines, or the Indigenous water management systems encountered in the Sahel. A more coherent and systematic effort is required to produce comprehensive knowledge about Indigenous adaptation strategies on other themes in these regions and in other areas in general, using quantitative and qualitative approaches.

Additionally, gender, age group, sexual orientation, and religious affiliation are demographic variables for which there are considerable gaps in data on their intersection with climate vulnerability and adaptation. Particularly in what refers to gender, Art. 7.5. of the Paris Agreement establishes a legal duty that adaptation be gender-responsive and participatory. Closing these gaps is essential for advancing the *Global Goal on Adaptation*.

One important detail that needs to be mentioned is the issue of scale. The comprehensiveness of this research agenda does not imply subsuming the specificities of different, context-specific strategies into larger, general categories – or, if that is unavoidable, it must be done with extreme care. Currently, there is no shortage of technological tools that enable working with the specificities of territories; that is, indeed, a common practice in the Earth Systems sciences. But, beyond that, Indigenous intellectuals often point out that the uprooting implied in this process distorts certain knowledge practices that are deeply linked to specific territories. Also, the category system used in the systematizations employed by science imposes a Western (for lack of a better term), non-Indigenous frame that is often incompatible with Indigenous understandings of reality. Collating fragments of Indigenous ideas onto a non-Indigenous, Western structure and presenting it as Indigenous knowledge is something often seen by Indigenous intellectuals as a falsification.

Still, regarding methodological practices and the need for more research on them, many Indigenous authors draw attention to the dangers of expecting perfect commensurability between different knowledge systems. This problem becomes apparent when the issue is presented as one of “translation.” The problem would be one related to translation if all parties involved were referring to the exact same world. This is not the case for, for instance, the Indigenous populations of the Americas, for whom the world is composed, among other things, by entities not recognized by materialistic mainstream science. This is not a minor problem. The IPCC’s AR7 scoping document notes that previous reports have been criticized for the “sidelining of Indigenous knowledge systems” (p. 58). This may have been a result of the attempt to produce syntheses that were, in fact, the translation of Indigenous knowledge into Western scientific ways of thinking (something often referred to as “validation of Indigenous knowledge”), a process in which everything in Indigenous worldviews that exists in excess is tacitly discarded. That is why some Indigenous authors and leaders demand that no fusion of knowledge be attempted, but rather that different knowledge be presented side by side (as advocated by the Inuit and the Māori in Aotearoa/NZ, among other groups).

All this highlights the need for more scholarly research on the *procedural* strategies employed in synthesis work, as well as in subsequent phases, such as the formulation of public policies. Given that the climate governance system requires syntheses, a significant amount of collaborative work is needed between indigenous and non-Indigenous scholars and stakeholders on this front. The same can be said about the socio-political contexts in which public policies for adaptation are formulated. Here, particularly, the specificities of the contexts where decisions are made are essential variables to be taken into consideration if policies are to be seen as legitimate. Large systematizations, even if valuable for many purposes, cannot substitute for the fact that when research is tailored to the specific reality on the ground and done in collaborative ways, the chances of success are greatly enlarged. The challenge, then, is how to expand existing research capacities.

There have been advances in this direction, but much more research is still needed. New procedures and research must be co-produced with Indigenous scholars, leaders, and communities, using methodologies that they identify as legitimate and guaranteeing that Indigenous communities retain sovereignty over research data (using, for instance, the CARE protocol, that establishes that research must be conducted for Collective Benefit, the communities retaining Authority to Control, and with Responsibility, and Ethics. There are many other similar protocols in different countries.) All this has been recognized by important players, such as the IPCC itself and Nature magazine. In terms of the Paris Agreement, embedding CARE and other protocols inside national Adaptation Communications and NAPs would make Indigenous data visible in Article 13 transparency reports, for instance. However, fundamental transformations in entrenched research practices are yet to be observed, as they require time and are challenging to implement.

There is no moral judgment here; instead, this is an identification of another research gap. These are elements that require more intensive research efforts in the fields of the social and behavioral sciences, as well as the social studies of science. Transformations in research paradigms can be informed and facilitated by scientific research on how science works, as well as the adoption of a reflexive attitude by mainstream science.

Another area in which research is lacking or unacknowledged and could make significant contributions to the adaptation debate refers to the elements in traditional Indigenous modes of existence that protect biodiversity. The detailed understanding of the drivers and motivations that guide the interaction between Indigenous communities and the climates and ecosystems in which they are part, as richly documented by both anthropological work and the literary and academic productions of Indigenous intellectuals, is still not fully recognized in the central arenas of the climate and ecological sciences. Many evaluations of the work of both the IPCC and the IPBES identify this aspect as one of the most critical gaps to be addressed in future integrative efforts.

The point here is that, instead of a utilitarian use of Indigenous observations of ecosystems that reduces the relevance of Indigenous knowledge to the local scale, there are elements in the general sociocultural architecture of their traditional modes of life that conserve the environment even when that is not a social goal. The many forms of social organization and the associated cultural elements of diverse Indigenous societies present themselves as relevant counterpoints to aspects of the modern, Western social order. This is something that may prove relevant when a large part of the adaptation and mitigation agendas is related to dramatic social transformations (like, for instance, energy transitions). The relevant research question here, for instance, is what motivates a society to preserve nature in a cultural context where there is no word for “nature” in local Indigenous languages, nor for sustainability, and the concept of protecting nature makes no sense. That is, some forms of organizing the social and cultural order seem to promote biodiversity as a byproduct of that very order, and not as the always uncertain result of a fierce political struggle, as it is in non-Indigenous societies. This fact constitutes a highly relevant research agenda for anthropology, sociology, political science, and the behavioral sciences, and it remains largely unexplored to date.

One reason why this and other gaps mentioned above exist is related to funding and resource disparity. Global climate research funding is heavily skewed toward institutions in developed countries, leaving Indigenous and local research in the Global South under-resourced. And everywhere, while the political or decision-making gridlock is perhaps the most critical problem to be addressed by academic research, the social and behavioral sciences receive a tiny fraction of the funding directed to climate change. Within the behavioral and social sciences, the promising field of “transformative science” is active in just a few research institutions in the Global North.

Finally, one relevant anthropological element in adaptation research that warrants further understanding is the presence of Indigenous knowledge systems, even if partially, in larger cultural, attitudinal, and behavioral patterns in regions with intense cultural syncretism, such as Latin America and Asia. Understanding how Indigenous groups perceive climate and adaptation can help in comprehending larger sociocultural patterns in these regions of the world.

As you are all aware, the Local Communities & Indigenous Peoples Platform (LCIPP) has the official mandate to bring these issues to the discussion and has been doing so effectively. The LCIPP workplan and leadership may provide fundamental support on these matters for SBSTA synthesis work.

I thank the SBSTA Chair, the Secretariat, and my fellow presenters.

Thank you for your attention.