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Indigenous Knowledge Systems

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Overview

The Intergovernmental Panel on Climate Change (IPCC) has begun to acknowledge, albeit slowly, the importance of Indigenous knowledge (IK) systems in contributing to understandings of climate change and effective climate action. Yet Indigenous Peoples (IPs) and IK systems remain largely excluded and marginalised from the IPCC global assessment reports. IPCC scientists and leaders have a unique and specific obligation to IK systems that does not extend to other knowledge systems. IK is the knowledge of rights holders and therefore acknowledging and respecting the self-determination of IPs over their knowledge – including how it is used, interpreted and synthesized – is imperative. There are examples of IPs organising themselves in other international spaces that could inform how the IPCC can approach a stronger, more durable engagement with IPs. Perhaps the ultimate challenge for the IPCC is that when bringing IK systems together with other knowledge systems, the framing of evidence must reflect the diversity of these distinct and discrete ways of knowing. Examples from the lived experience of the Inuit Circumpolar Council (ICC) in engaging with the IPCC demonstrate diverse channels for engagement, yet significant limitations persist.

13.1 Introduction

As it stands, the IPCC ‘knowledge base’ consists largely of peer-reviewed and internationally available academic literature with some selected non-peer reviewed – so-called ‘grey’ – literature (see **Chapter 12**). Given the nature and scope of the peer-review publication process, this translates into assessing evidence predominantly through a Western scientific lens. Widening the knowledge base is not just about including more diverse peer-reviewed literature. It is about engaging with diverse knowledge systems and forms of evidence

originating outside a scientific system of understanding, crucial among these being IK systems.

Excluding or failing to adequately and appropriately engage with IK systems results in a failure to capture in-depth and extensive evidence that could (i) significantly enhance the understanding of environmental, biophysical and climatic systems; (ii) provide crucial information about the interconnections between humans, more-than-humans and the environment, and (iii) strengthen the knowledge base in such a way that could help to advance evidence-based climate policy and create better-informed rigorous climate action responsive to all, including IPs. This chapter makes a case for widening the IPCC's knowledge base to include IK systems. But it also outlines how this might be done by discussing what it means to ethically and equitably engage with IK systems.¹ To do this we draw both from published academic literature and from lived experience of the IPCC's exclusive processes and limitations to its knowledge base.

13.2 IK Systems

IK systems have been largely excluded from IPCC reports to date and from climate research broadly (Ford et al., 2012; Smith & Sharp, 2012; Ford et al., 2016; van Bavel, 2021). However, IK systems have been recognised as essential to understanding the environment and human-environment relationships, and to developing solutions to mitigate and adapt to the climate crisis (e.g. Laidler et al., 2011; Nalau et al., 2018; IPCC, 2019g; Sawatzky et al., 2020). Furthermore, IPs live in environments and ecosystems that are often heavily impacted by climate change and therefore have extensive lived experience and an intimate knowledge of climate change (Maldonado et al., 2016; Savo et al., 2016; Forest Peoples Programme et al., 2020). Indeed, the profound relationship that IPs have with their lands, territories and resources – and their collective rights to their lands, territories and resources – is a unique and unparalleled connection. It is therefore essential for the IPCC to make linkages between IK systems and impacts of climate change on Indigenous lands.

IPs own, protect, manage or have tenure rights to more than a quarter of the Earth's land territory, comprising 40 per cent of all protected land and ecologically conserved landscapes with high biodiversity and carbon storage (Garnett et al., 2018; Forest Peoples Programme et al., 2020). This intimate knowledge and stewardship expands the understanding of the impacts of climate change, and how to respond to them. IK has been defined in many ways and will not be defined in one way here; rather, it is essential to recognise the various definitions of IK, such as that offered by the ICC² (see Box 13.1). We note that IPs have the right to define IK as they understand and engage with their own knowledge.

Box 13.1

One of many definitions of Indigenous knowledge

Inuit Circumpolar Council (2013)

Indigenous knowledge is a systematic way of thinking applied to phenomena across biological, physical, cultural and spiritual systems. It includes insights based on evidence acquired through direct and long-term experiences and extensive and multigenerational observations, lessons and skills. It has developed over millennia and is still developing in a living process, including knowledge acquired today and in the future, and it is passed on from generation to generation. Under this definition, IK goes beyond observations and ecological knowledge, offering a unique 'way of knowing'. This knowledge can identify research needs and be applied to them, which will ultimately inform decision makers. There is a need to utilise both Indigenous and scientific Knowledge. Both ways of knowing will benefit the people, land, water, air, and animals within the Arctic.

Regardless of the term or definition, IK is the knowledge of rights holders. IK systems are therefore tied to Indigenous rights and any engagement with IK systems requires a rights framework or rights-based approach. IK systems cannot be taken out of the specific cultural context from which they emerge. It is also crucial to recognise that IK systems and Indigenous languages are inextricably connected. Serious rights safeguards are imperative in relation to IK systems³ and such safeguards must be recognised and respected. Article 31 of the UN Declaration on the Rights of Indigenous Peoples affirms 'the right to maintain, *control*, protect and develop their intellectual property' (emphasis added). This must be understood as directly linked to exercising the elements of the right to free, prior and informed consent – here, the term 'control' in its plain meaning suggests that the peoples concerned have power over, to influence, manage, restrain, limit or prevent something from taking place (United Nations, 2007). Article 31 must also be read in the context of the whole of the instrument and all the interrelated rights affirmed therein. A rights-based approach means acknowledging and respecting the self-determination of IPs, their governance systems, their right to define their knowledge systems and to be equal partners in knowledge translation and mobilisation. It also means understanding IPs' rights to represent their people in regional, national and international processes, whether this be knowledge production, knowledge assessments or policy development. In applying an Indigenous worldview, knowledge cannot be separated from governance. To capture the richness and depth that IK systems can offer, Western models of

knowledge production, synthesis and decision-making should welcome IPs and recognise them as fellow experts, decision-makers and distinct knowledge holders.

Lastly, it is important to understand that IPs are well organised in international climate spaces. IPs have self-organised to effectively and directly participate in various international systems including the International Union for the Conservation of Nature (IUCN), the Convention on Biological Diversity (CBD), and the UN Framework Convention on Climate Change (UNFCCC). While the organisation of IPs around each system varies in operation and membership, the structural framework and core principles remain consistent. In dealing with such international bodies, IPs are formally recognised within the UN system and are engaged and organised into seven UN socio-cultural regions – Africa, Asia, Latin America and the Caribbean, Russia, the Arctic, the Pacific, and North America. IPs in these regions coordinate regionally to discuss and determine shared interests and priorities. They then come together under one Indigenous body – for example, for the UNFCCC, IPs gather under the International Indigenous Peoples Forum on Climate Change (IIPFCC), also referred to as the IP caucus⁴ – to build consensus around shared Indigenous positions and messages.

These bodies and organisational structures have been in place for decades and are well recognised. They uphold principles of diversity, inclusivity, collaboration, fluidity, and respect for local and regional governance structures. IPs can engage with the Indigenous body while at the same time engage with advocacy and actions specific to their organisation, country, priorities, strategies or region. Recognising the centuries-old debates concerning the status, rights and roles of IPs and the historical antecedents of IPs as objects and subjects of international law, the world community has embraced IPs. Yet, challenges such as the engagement of IK remain. It is therefore important to recognise these structures because they demonstrate IPs' in-depth knowledge and experience in engaging with international climate processes and are exemplary in respecting self-determination. There is extensive expertise within and readiness from IPs to engage with the IPCC and examples of how to facilitate this (see Section 13.7).

13.3 Engaging with IK Systems in Equitable and Ethical Ways

Widening the knowledge base to ethically and equitably include IK systems in the IPCC is two pronged. The first important element is to engage with IPs directly and to provide opportunities for partnership and direct participation in the IPCC process. Responsible engagement includes processes of partnership and participation that are initiated in mutual agreement with or by IPs (David-Chavez & Gavin, 2018). This is contrary to the extractive models of engagement often applied when attempting to access IK systems externally from Western scientific contexts of

research and evidence assessment. Developing relationships with IPs and organisations is one initial effort that will aim to ensure IK systems are present in IPCC assessments.

The other crucial element is ensuring that the ongoing machine of knowledge production that feeds into the IPCC prioritises the co-production of knowledge. Knowledge co-production is a process in which multiple distinct and separate paradigms are applied simultaneously at all stages of knowledge generation (Tengö et al., 2014; Johnson et al., 2016; Berkes, 2018; Hill et al., 2020). While being considered together in this generative process of co-production, the integrity and quality of each knowledge system is still valued as it continues to engage in its independent production processes (IPCC, 2019f; their Fig. CB4.1). According to a recent report produced by the ICC, aiming for genuine co-production of knowledge is a crucial part of ethically and equitably engaging with IK systems. It requires essential elements of trust, respect and relationship, as well as full acceptance of agreed values (ICC, 2021). Further guidance towards genuine co-production processes involves acknowledging IK ‘as a unique knowledge system that comes with its own evaluation and validation processes’ (ICC, 2021: 20). This guidance extends to the IPCC assessment process and its synthesis of a diverse knowledge base and highlights the existing tensions between fundamentally different knowledge-handling processes that must be recognised and resolved for new knowledge to be co-produced.

Research assessing how IK has been used as evidence to shape IPCC assessments – from the Fourth (AR4) to the Sixth Assessment Report (AR6) – has demonstrated that, despite an increase in Indigenous-focused content over time, the IPCC process has no established procedures or guidance for ethically and equitably engaging with IK systems, especially where it is highly relevant (Ford et al., 2012, 2016; Smith & Sharp, 2012; van Bavel, 2021). Furthermore, the underlying principles and procedures that guide IPCC assessments have been shown to actively restrict the knowledge base from equitably and ethically engaging with IK systems (van Bavel, 2021). Here, an excerpt taken from publicly available IPCC expert reviewer comments also reveals some of the challenges encountered when working within the existing IPCC assessment process:

It is somewhat difficult to use ‘published’ IK – first of all because very little is published, second, because it can easily be taken out of context and be misinterpreted, since it is very complex. The context/analysis should ideally always be confirmed by the knowledge holders – Expert Reviewer 22590 SROCC

IPs highlight protocols and methodologies that belong to the worldviews and paradigms of IK systems (e.g. Kovach, 2009; Inuit Tapiriit Kanatami, 2018; Whyte, 2018; ICC, 2021). They can offer a process, outside of Western scientific

forms of validation, for widening the knowledge base through knowledge co-production (e.g. Tengö et al., 2014; Parsons et al., 2016). Multiple, distinct and separate knowledges coming together requires a framing of evidence that reflects such diversity – including fundamental differences in epistemology, ontology, methodology and axiology (see **Chapter 18**). Critically, this need for reforming the assessment process to widen the knowledge base has been echoed by Indigenous persons and organisations navigating their own engagement with the IPCC. One such organisation is the ICC, which has called for and exemplified the importance of a two-pronged approach to widening the knowledge base. This is through direct participation, engagement and partnership of IPs in the IPCC process, and through prioritising the co-production of knowledge. ICC has shared this message and embodied this approach in various ways including as an expert reviewer, as a contributing author, as a member of a government's delegation to plenary sessions, and most recently as an official observer.

13.4 IPs and IPs Organisations as Expert Reviewers

The existing IPCC review process plays a significant role in engaging the IPCC's knowledge claims through experts beyond academia, including those from government, non-government and industry (see **Chapters 10** and **11**). As an expert reviewer, the ICC has made substantial comments and fed directly into IPCC assessments during this review process. The extent to which these comments are addressed has varied, but has allowed for the ICC to consistently call for more engagement with IK systems and qualify what that engagement should look like. Despite the significant demand on time and resources that is required to adequately complete the IPCC review process, ICC has continuously provided expert Indigenous-specific input and analysis on how the various reports have used IK systems. It has also provided detailed expert advice on appropriate language, framing, literature and other source materials. For example, it has ensured that when IK is introduced in the Summary for Policymakers it is alongside concepts of Indigenous rights and self-determination within the research and evidence assessment process (Expert Reviewer 3088, SROCC). As an expert reviewer, ICC has flagged the absence of Indigenous authors and emphasised in numerous review processes the importance of partnership and direct participation. It has called for genuine opportunities to contribute co-authored content, especially where the IPCC refers to the work and knowledge of ICC and other IPs:

Ideally, Indigenous knowledge holders should participate in the development of these reports so that they stand as an example of HOW to be engaging with Indigenous knowledge ... there are many communities and individuals from this population whose

voices, knowledge, and experience would have strengthened the writing of this report had they been brought in from the beginning – Expert Reviewer 9604, SR1.5

13.5 Indigenous Authorship

During the most recent IPCC assessment cycle, ICC has worked with an IPCC author who understands what it means to ethically and equitably engage with IK systems. This author has sought to provide more meaningful opportunities to include Indigenous voices and knowledge in IPCC assessments. Through this relationship, ICC has contributed text to the IPCC SROCC and IPCC AR6 WGII Polar Regions Cross-chapter Paper. Ensuring the integrity and robustness of a contribution can be very challenging when facing word limits, restrictions to peer-reviewed sources, requirements to fit into a Western framing, and comments from other authors, expert reviewers or government representatives who do not understand IK systems, IPs or Indigenous rights. In addition, as with the review process, authorship requires allotting staff time and resources to IPCC work, often without having allocated funding for this work. However, this opportunity to contribute has provided ICC greater insight into the process and allowed for a stronger understanding of where to find intersections and common points of convergence that can facilitate the utilisation of IK systems. Including Indigenous authors in the IPCC reports is certainly one step towards meaningful engagement. Continuing to include and support Indigenous authors should be a priority for the IPCC (Ford et al., 2012).

13.6 IPs as Part of a Member Government Delegation

The ICC has also been invited to join the Canadian delegation at Panel's plenary meetings. As part of the Canadian delegation, ICC can participate in the final approval of reports, voice concerns that have not been addressed in the review process, and request changes to wording to ensure respectful and appropriate framing of IK systems and Indigenous perspectives. Support from governments by making space for Indigenous representation on the delegation is a significant step in the right direction. Yet Indigenous participation in this capacity remains limited and ultimately IPs should have their own autonomous and equal seat at the table. A step in this direction occurred in February 2020 when ICC was granted formal observer status to the IPCC (see **Chapter 10**). This is the first time an Indigenous Peoples Organisation (IPO) has been recognised as a formal observer and may provide new opportunities for engagement. ICC can now fully participate in its own right and represent itself at plenary sessions and when interacting with the Panel, the Bureau and the Technical Support Units. Observer status also may be useful for ICC to contribute to training workshops or expert meetings on the topic

of IK systems. The absence of other observer IPOs further points to the lack of examples of IPOs intersecting or engaging with the IPCC.

13.7 Achievements and Challenges

Recognising that there are many ways of knowing – which must be considered together to inform the transformation of our understandings of climate change – is a recent awakening in the IPCC. We can trace the evolution of the treatment of IK systems in IPCC reports. This started with simply the recognition of IK systems as sources of knowledge in their own right, to having representations of IK in reports – albeit sometimes through inappropriate means – to seeing original contributions from an IPO, to having the first IPO accepted as an observer. We recognise that these are fledgling efforts from a regrettably small body of examples. And yet, there is the expertise, will and desire from within IPOs, including the ICC, to effectively and meaningfully engage with the IPCC process to ensure IK systems are included equitably and ethically within the knowledge base.

True transformation towards equitable and ethical engagement of IK systems and IPs requires going beyond fledgling practices of engagement. It requires changing the current paradigm, framing of evidence, and developing processes of the IPCC to reflect the diversity between and within knowledge systems and co-produce the transformative understandings of climate change needed today. Starting points would be having IPOs as full members of the IPCC and Indigenous representation in the Bureau; supporting Indigenous authorship/leadership early and often in the assessment cycle; recognising Indigenous peer-reviewed processes; and citing Indigenous-led materials in reports. There are many challenges and tensions, especially within the academic world, that restrict such transformation, some of which have been characterised in this chapter. It is not an easy task and the IPCC remains in the infancy of this uncharted territory. Yet engaging and mainstreaming IK systems in assessments like the IPCC perhaps offers a way forward for their adoption of new processes, paradigms and understandings. Certainly IPOs such as the ICC deem their engagement efforts worthwhile, despite the challenges and the glacier-paced change. Indeed, the benefits of being involved in the IPCC process and championing knowledge co-production and transformation, to the extent possible, will always outweigh the costs of time and resources because Indigenous lives, cultural integrity, ways of life and knowledge systems are at stake.

The extraordinary developments in favour of IPs within the field of international human rights law at the UN, Organisation of American States (OAS), International Labour Organisation (ILO), and elsewhere, suggests that the IPCC may have a responsibility to prioritise and value the ethical and equitable engagement of IK

systems that does not extend to other knowledge systems. Here, we refer to the unique and specific set of obligations to understand Indigenous perspectives and worldviews, engage with IK systems and rights holders, and co-produce knowledge. This includes IPCC scientists and leaders questioning their assumptions, perspectives and approaches to knowledge production. To date, the burden of furthering increased understanding between IK systems and science has largely fallen on the shoulders of IPs and Indigenous academics. Such individuals understand the distinct cultural context of the Indigenous world, but they have been trained in the Western or non-Indigenous academic realm and understand both systems. These individuals who can act as bridges are rare, but have been essential in making these important connections (cf. multi-positional thematic bridges described in **Chapter 18**).

Beyond the IPCC, there are various bodies and mechanisms that offer opportunities from which the IPCC can learn about facilitating equitable and ethical engagement with IK holders and IK systems. Again, this is being done through Indigenous partnership and direct participation as well as prioritising the co-production of knowledge. For example: the Facilitative Working Group of the Local Communities and Indigenous Peoples Platform (LCIPP)⁵ under the UNFCCC, the UN Permanent Forum on Indigenous Issues (UNPFII)⁶, the Arctic Council⁷, as well as the IIPFCC (see Section 13.2). These are examples to learn from, but these bodies also continue to be challenged with fully embodying the equitable and ethical engagement of IK systems and co-production of knowledge in its fullest and truest form. IPOs like the ICC continue to work in these spaces to encourage and cultivate an understanding of IK systems. An expansive understanding of IPs based on their relationship with their lands, territories and resources can never be captured by Western science. The IPCC must strive to make its assessment processes ethical and equitable in a way that has relevance and validity for IPs, in Indigenous contexts. This could have resounding reciprocal benefits for climate research, policy and practice, as well as enhancing the recognition of IPs and implementation of their distinct rights globally.

Notes

- 1 Making Indigenous knowledge systems the focus, this chapter will not engage with questions around local or practitioner knowledges, or any other knowledge systems, since these are distinct from Indigenous knowledge.
- 2 The Inuit Circumpolar Council (ICC) is an Indigenous Peoples Organisation, founded in 1977 to promote and advance the unity of 180,000 Inuit from Alaska, Canada, Greenland, and Chukotka. ICC works to promote Inuit rights, safeguard the Arctic environment, and maintain the Inuit way of life. Working for recognition of and respect for IK systems is a priority of the ICC. <https://www.inuitcircumpolar.com/>
- 3 Such as the American Declaration on the Rights of Indigenous Peoples (2016), a human rights instrument that is complementary to the UNDRIP, which contains more comprehensive provisions addressing “systems of knowledge” and their relationship to identity, land, territory, resources, etc.
- 4 The IIPFCC organises meetings around the UNFCCC COPs and intersessional sessions. Engaging with IPOs through this forum could be one option for the IPCC to consider.

- 5 LCIPP is a new and important space mandated to facilitate knowledge exchange and develop the capacity of state parties for engagement with IK systems and holders. Activities most relevant to the IPCC include training webinars on Indigenous knowledge, seminars on Indigenous climate change curricula, and a co-produced web portal (<https://lcipp.unfccc.int/>) with information about how to engage with Indigenous perspectives and knowledge of climate change.
- 6 UNPFII acts an advisory to the UN Economic and Social Council regarding areas of concern and rights of IPs. Members of the UNPFII have been engaging in research and synthesis reports regarding IK systems, including the treatment of IK within the UNDRIP framework (ECOSOC and Permanent Forum on Indigenous Issues, 2015), analysis of customary laws pertaining to IK (ECOSOC and Permanent Forum on Indigenous Issues, 2007), the resilience and protection of IK systems in African contexts (ECOSOC and Permanent Forum on Indigenous Issues, 2013b, 2014), and connecting IK systems, history, and social circumstances within the education system (ECOSOC and Permanent Forum on Indigenous Issues, 2013a). More information available at <https://www.un.org/development/desa/indigenouspeoples/unpfii-sessions-2.html>.
- 7 The Arctic Council recognises Arctic IPOs as Permanent Participants who share the same table as eight Arctic state party members and who are actively engaged in all aspects of the Council, including its working groups. The fact that the Arctic is the homelands of these respective Indigenous Peoples Organisations, they are accorded equal and direct access to every issue of Arctic Council concern, above and beyond that of non-Arctic nations. <https://arctic-council.org/>

Three Key Readings

Inuit Circumpolar Council (2021). Ethical and Equitable Engagement Synthesis Report: A collection of Inuit rules, guidelines, protocols, and values for the engagement of Inuit Communities and IK from Across Inuit Nunaat. Available at: www.inuitcircumpolar.com/project/icc-ethical-and-equitable-engagement-synthesis-report/

This synthesis report illustrates what it means for Inuit to secure the ethical, equitable, fair and just engagement of Inuit knowledge. It does so by synthesizing Inuit-developed rules, laws, values, guidelines and protocols from across Inuit Nunaat–Inuit homelands and territories. This report is instrumental in the collective development of circumpolar engagement protocols and guidelines that support Inuit sovereignty, self-determination and self-governance.

Inuit Tapiriit Kanatami (2018). National Inuit Strategy on Research. Ottawa. Available at: www.itk.ca.

This strategy presents an Inuit vision for research in Inuit Nunangat, the Inuit homeland and territory in Canada, that can be achieved through the equitable and ethical engagement with Inuit and their knowledge, governance and rights. It emphasizes how ensuring the right to Inuit self-determination in research, and research relationships, is a means for ensuring that Inuit Nunangat research is efficacious, impactful and useful for Inuit.

Whyte, K. (2018). What do Indigenous knowledges do for Indigenous Peoples? In: Nelson, M. K. and Shilling, D. (eds.), *Keepers of the Green World: Traditional Ecological Knowledge and Sustainability*. Cambridge: Cambridge University Press. pp. 57–82. <http://doi.org/10.1017/9781108552998.005>

This book chapter highlights the significance of what IK systems do for IPs. Whyte calls on Western scientists seeking to engage in knowledge exchange and co-production processes to recognize the irreplaceable value of IK systems not only in terms of what they can do for Western science, but what they do for IPs themselves.