Report

First Indigenous and local knowledge dialogue workshop

on the

IPBES assessment on monitoring biodiversity

Framing the assessment

30 November to 1 December 2024, Montreal, Canada

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Disclaimer

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Acknowledgements

We wish to thank the participants who travelled from across Canada and from across the world to share their time and knowledge with us during the workshop. This first workshop for the monitoring assessment would not have been possible without your openness and commitment.

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1 Introduction

This is the report of the first Indigenous and local knowledge (ILK) dialogue workshop for the assessment on monitoring biodiversity and nature's contributions to people (the "monitoring assessment") that is being developed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems Services (IPBES).

The dialogue workshop was held in Montreal, Canada from 30 November to 1 December 2024. It aimed to provide a platform for discussion between Indigenous Peoples and local communities and assessment authors, with a focus on key ILK concepts, themes, questions, challenges, opportunities, resources and other issues relating to the assessment.

This report aims to provide a written record of the dialogue workshop, which can be used by assessment authors to inform their work on the assessment, and by all dialogue participants who may wish to review and contribute to the work of the assessment moving forward, as well as others who may be interested in subjects relating to the monitoring of biodiversity and ILK.

The report is not intended to be comprehensive or to provide definitive resolution to the many engaging discussions that emerged during the workshop. Rather, it serves as a written record of those discussions, which will continue to develop and evolve in the months and years ahead. For this reason, clear points of agreement are discussed, but also, if there were diverging views among participants, these are also presented for further attention and discussion.

The text in section 3 represents an attempt to reflect solely the views and contributions of the participants in the dialogue. As such, it does not represent the views of IPBES or UNESCO or reflect upon their official positions.

The agenda and participants' list for the dialogue are provided in annexes 1 and 3.

2 Background

2.1 The IPBES monitoring assessment

2.1.1 Structure and process

The monitoring assessment commenced in 2024 and will be considered by the Plenary[1] at its thirteenth session expected to be held in 2026. The assessment report will consist of a summary for policymakers and four chapters. The chapters are as follows:

- Chapter 1: Setting the scene
- Chapter 2: Assessing the data needs
- Chapter 3: Assessing the challenges in biodiversity monitoring to meet needs
- Chapter 4: Options for strengthening the capacity to monitor biodiversity worldwide

The assessment will also identify key gaps in knowledge, data, methodologies and reporting standards.

2.1.2 Scope and rationale

The assessment is a *methodological assessment*, which means that it assesses available methodologies for addressing a specific theme.

As set out in the assessment's scoping report (available here), the aim of the monitoring assessment is to support national and global efforts to:

- monitor biodiversity, nature's contributions to people and the direct and underlying causes of the observed changes; and
- monitor progress towards the goals and targets of the Kunming-Montreal Global Biodiversity Framework.[2]

[1] The Plenary is the body through which states that are members of IPBES take decisions, which usually meets around once a year.

[2] The Kunming-Montreal Global Biodiversity Framework was adopted during the fifteenth meeting of the Conference of the Parties (COP 15) of the CBD. This framework sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030.

The assessment will take into account different knowledge and value systems.

It will assess the current capacity, capability and resources to collect and analyze data at national and global scales. It will assess gaps in data availability and access and challenges and barriers related to the capacities and means of implementation. The assessment will also identify opportunities to further develop national and regional biodiversity monitoring capacities, and community, Indigenous and citizen-science biodiversity monitoring. The assessment will look at options to enhance cooperation, to promote resource-sharing and reporting.

The full scoping report for the assessment is available here.

2.2 Context for the dialogue workshop

2.2.1 IPBES and ILK

IPBES is an independent intergovernmental body established to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.

Since its inception in 2012, IPBES has recognized that Indigenous Peoples and local communities possess detailed knowledge of biodiversity and ecosystem trends. In its first work programme (2014-2018), IPBES built on this recognition through deliverable 1 (c), *Procedures, approaches, and participatory processes for working with Indigenous and local knowledge systems.* The IPBES rolling work programme up to 2030 includes objective 3 (b), *Enhanced recognition of and work with Indigenous and local knowledge systems*, which aims to further this work. The IPBES conceptual framework also contains explicit recognition of diverse knowledge and value systems.

Recognizing the importance of ILK to the conservation and sustainable use of ecosystems as a cross-cutting issue relevant to all of its activities, and noting also that approaches and methods for working with ILK and Indigenous Peoples and local communities in global and regional scale assessments would need to be developed, the IPBES Plenary established a task force on ILK systems and agreed on terms of reference guiding its operations towards implementing this deliverable. IPBES' work with Indigenous Peoples and local communities and on ILK is supported by a technical support unit for ILK, hosted by UNESCO.

Key activities and deliverables of the task force and technical support unit on ILK so far include:

- Progress in the development of approaches and methodologies for working with ILK was made during previous IPBES assessments (Pollination, Pollinators and Food Production, Land Degradation and Restoration, four Regional Assessments and a Global Assessment of Biodiversity and Ecosystem Services, Sustainable Use of Wild Species, Diverse Values

and Valuation of Nature, Invasive Alien Species, the Interlinkages among Biodiversity, Water, Food and Health, and Transformative Change);

- The development and implementation of the "approach to recognizing and working with ILK in IPBES", which was formally approved by the Plenary at its fifth session in 2017 in decision IPBES-5/1, which sets out principles and approaches for IPBES's work with ILK;
- Development and implementation of methodological guidance for recognizing and working with ILK in IPBES, which aims to provide further detail and guidelines on how to work with ILK within the IPBES context; and
- Development and implementation of a "participatory mechanism", a series of activities and pathways to facilitate the participation of Indigenous Peoples and local communities in IPBES assessments and other activities, which includes organizing ILK dialogue workshops for the IPBES assessments.

2.2.2 Working with ILK in the assessment process

IPBES recognizes that the participation of Indigenous Peoples and local communities is essential to the process of developing the monitoring assessment. As shown by previous IPBES assessments, ILK systems include in-depth knowledge of nature, such as changes over long timescales, across large areas of the planet. Indigenous Peoples and local communities may however perceive and understand nature and human-nature relationships in diverse ways. They may also learn, hold, share and represent their knowledge in ways that differ from academic science. Imbalances in power dynamics and governance systems can significantly impact the ways that Indigenous Peoples and local communities can meaningfully engage in research and environmental management. These factors can limit participation, marginalize ILK and undermine trust, ultimately shaping the outcomes of such efforts. To ensure that biodiversity monitoring systems are effective, culturally appropriate and supportive of community aspirations, needs and goals, it is crucial to explore and address such issues.

Following the IPBES approach to ILK and as part of the participatory mechanism, dialogue workshops are being held during the cycle of the monitoring assessment, as follows:

- Discussing key ILK themes and framing of the assessment (30 November to 1 December 2024, Montreal, Canada – the workshop discussed in this report); and
- Reviewing the first draft of the chapters and summary for policymakers (TBC, 2025).

These workshops bring together members of Indigenous Peoples and local communities, Indigenous and non-indigenous scientists, and authors of the assessment to discuss key themes relating to the assessment. They are part of a series of complementary activities for working with

ILK and enhancing participation by Indigenous Peoples and local communities throughout the assessment process.

Other activities during an assessment include an online call for contributions, invitations to contributing authors and review of diverse literature and materials (see figure 1).

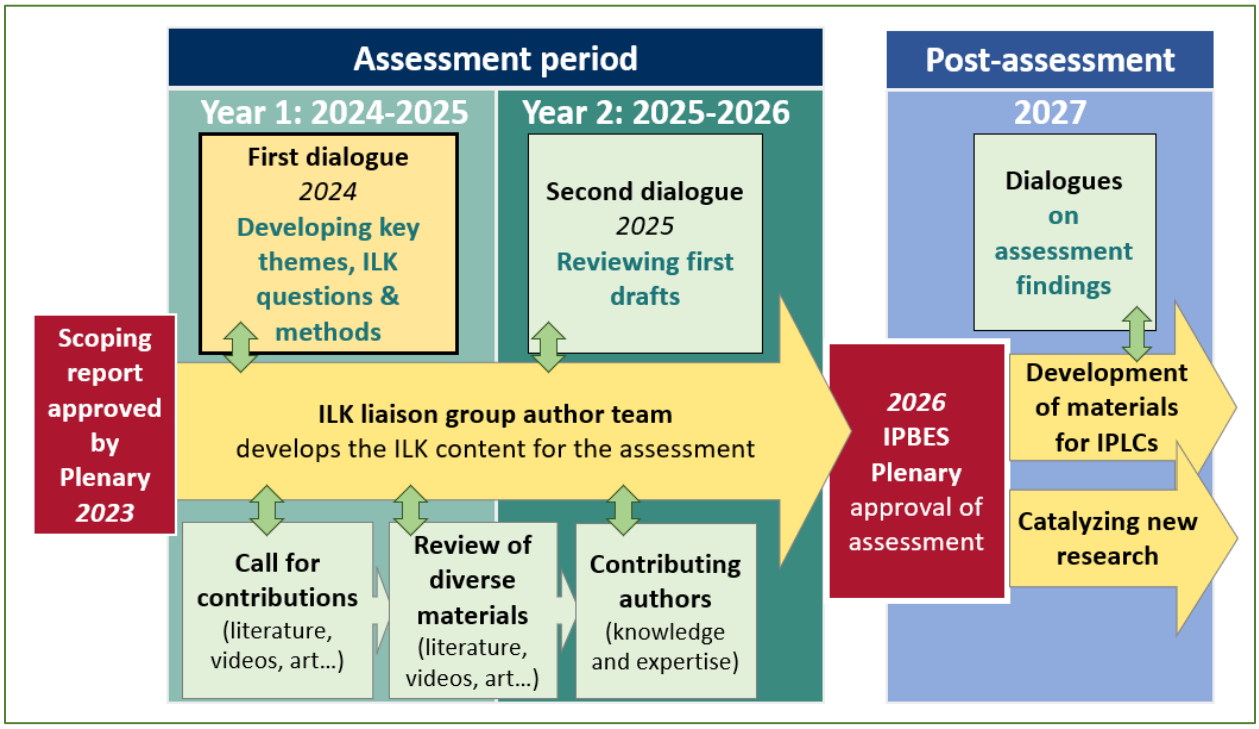

Figure 1: Timeline of work with ILK in the monitoring assessment, following the IPBES approach to ILK.

2.3 Objectives of the ILK dialogue workshop

The first ILK dialogue aims to provide a platform for discussion between participants of the workshop about potential key ILK concepts, themes, questions, challenges, opportunities, resources and other issues relating to the IPBES monitoring assessment. Specific aims of the dialogue include:

- Developing recommendations from Indigenous Peoples and local communities for key themes or questions of the assessment, which will help to shape an ILK narrative for the assessment and direct the collection, synthesis and analysis of information;
- Discussing how Indigenous Peoples and local communities conceptualize, undertake and govern monitoring systems and related decision-making;
- Discussing challenges, risks and opportunities related to the assessment from the perspectives of Indigenous Peoples and local communities;
- Beginning to develop case studies of relevance to the assessment;

- Determining key experts who can contribute to the assessment as contributing authors or participants in future dialogue workshops and review processes; and
- Identifying resources and sources of information that could be included in the assessment.

2.4 Methods for the dialogue workshop

The workshop was held in-person over two days. Time was also set aside at the beginning of the workshop to allow participants to discuss the issues they wished to address at the workshop, and how these issues should be approached. The agenda is presented in annex 1 of this report. The process for the dialogue workshop included:

- Initial presentations and discussions on:
    - IPBES and its goals and methods;
    - Workshop aims, methods, and free, prior and informed consent (FPIC); and
    - The monitoring assessment, its goals and proposed methods;
- Presentations on community-based monitoring and information systems (CBMIS), including from Canada, Colombia, Kenya and the Philippines.
- Discussions around the draft key ILK questions and themes that had been developed by authors of each chapter of the assessment. Participants were asked to reflect on whether these questions and themes were appropriate, and whether any changes needed to be made, as well as responding to the questions and themes as they saw appropriate; and
- An Indigenous and local community caucus, an informal group composed of Indigenous and local community representatives, with ad hoc rules of engagement in certain intergovernmental and UN fora, to give participants a space to discuss any questions, concerns or issues in relation to IPBES, the assessment and the workshop.

2.5 Free, prior and informed consent

Free, prior and informed consent (FPIC) principles are central to IPBES work with Indigenous Peoples and local communities. A series of ethical principles have been developed to ensure that FPIC is followed in IPBES activities. These principles were agreed upon by the participants from Indigenous Peoples and local communities and IPBES authors in the dialogue, recognizing that participants, authors and the IPBES technical support units have different responsibilities within the process. The principles will be followed by participants from Indigenous Peoples and local communities, the assessment authors group and the IPBES technical support units. The full

agreed-upon text and the names of those agreeing to these principles are provided in annexes 2 and 3 to this report.

2.6 Benefits to Indigenous Peoples and local communities of participating in the assessments and other activities

During previous ILK workshops, participants emphasized the need for clear benefits to Indigenous Peoples and local communities from their involvement and participation in an assessment process. It was noted that IPBES does not benefit financially from its processes or products, and that the main products of IPBES are publicly available materials, including assessment reports, their summaries for policymakers, webinars and other resources, to provide free and reliable information for policymakers and decision-makers and actors at all levels, including Indigenous Peoples and local communities. Key benefits discussed for Indigenous Peoples and local communities from participating in dialogue workshops and the overall assessment process include:

- The opportunity to enhance relationships, and share experiences, examples and cases among Indigenous Peoples and local communities around the world;
- The opportunity for Indigenous Peoples and local communities to engage in dialogue around experiences and knowledge with IPBES assessment authors;
- The opportunity to bring ILK and the concerns and visions of Indigenous Peoples and local communities to the attention of policymakers and decision-makers; and
- Use of the final assessments as tools to support Indigenous Peoples and local communities when engaging with policymakers, decision-makers and scientists. Part of the planning for the final assessment includes the development of an accessible summary specifically for Indigenous Peoples and local communities, as well as webinars that present the results to Indigenous Peoples and local communities.

3 Key recommendations and learning from the dialogue workshop[3]

Throughout the workshop, participants engaged in comprehensive discussions about various aspects of the monitoring assessment. This section highlights the key messages, recommendations and examples shared by Indigenous Peoples and local communities during the workshop. To preserve authenticity, the content presented here closely reflects the participant´s statements and comments during the workshop, with only minor editorial adjustments for clarity.

3.1 Comments on methods and process for the assessment

Participants highlighted that the assessment should aim to weave knowledge systems, and that within this, aiming for co-creation of knowledge and partnerships is crucial. However, they also noted that in some cases it may not be possible to weave or combine different paradigms and epistemologies, and so other ways may need to be found to work with different knowledge systems, for example using concepts such as "bringing" knowledge systems together. They noted that participation by Indigenous Peoples and local communities is key, including through the dialogue workshops and as contributing authors. However, they noted that contributing authors, like other IPBES assessment authors, are not remunerated for their contributions to the assessments. They therefore recommended that ways are sought to compensate contributing authors for their time. They highlighted that building trusting relationships is key when working with Indigenous Peoples and local communities. Communication with participants in the process about roles and progress is essential to build and maintain this.

Participants emphasized the need to recognize the vast diversity of Indigenous Peoples and local communities in the world, including communities that may not often receive much attention, or are not recognized by the State, for example afro-descendant communities in Latin America or off-reserve or non-'status' Indigenous Peoples in North America. They noted that while it is not possible to work with all communities in the world, it is important to highlight diversity, and provide a regionally balanced range of examples and perspectives. Overall, it is important to avoid inferring that all communities think and act in the same ways, while some general

[3] Disclaimer: The text in section 3 represents an attempt to reflect solely the views and contributions of the participants in the dialogue. As such, it does not represent the views of IPBES or UNESCO or reflect upon their official positions.

similarities (for example around relationships with nature) can also be highlighted. A case study database might be one way of exploring this diversity, potentially including a proposed inventory of community-based monitoring and information systems (CBMIS) for the assessment.[4]

Participants noted that much knowledge is transmitted exclusively in Indigenous and local languages, and many materials about ILK systems are only available in languages other than English. Assessment authors should therefore seek to access a variety of materials and information, either through authors of the assessment who speak other languages or by working with contributing authors who speak other languages, including Indigenous and local languages. Additionally, including examples of concepts and terms from other languages in the assessment can showcase and highlight linguistic diversity, without attempting to cover every language globally.

Participants highlighted that the assessment should acknowledge the existence of oral concepts and traditions, and account for these in the methods for collecting evidence and representing findings. This can be achieved through dialogue workshops, evaluating diverse materials, including videos, and collaborating with contributing authors. They also suggested that some contributions could be made as voice recordings, which could then be transcribed.

Participants highlighted the need to address the challenges related to diversity and language described above in the assessment. They however acknowledged that, given the timelines and budgets and the scope of a global report, many of these issues cannot be fully resolved, and this should be transparently stated in Chapter 1. Furthermore, participants noted that it is important to view the assessment as the beginning of an ongoing process or conversation. It is not intended to solve all problems at a global scale, but rather to provide a foundation for continued, long-term work. Its aim is therefore to encourage and guide readers, including governments and researchers, to engage more closely and appropriately with Indigenous Peoples and local communities in their respective countries or areas of work. Participants therefore agreed on the importance of adopting a strategic approach that includes clearly identifying the essential information needed to effectively develop and communicate the key messages of the assessment, rather than trying to include all of the global diversity of Indigenous Peoples and local communities, and their cultures, knowledge systems, strengths and challenges.

Participants also noted that FPIC should be a key principle to underpin the work in the assessment. They noted that work was done to define how consent should take place through FPIC during the development of UNDRIP, and as such this is an Indigenous governance framework. The current IPBES FPIC process was developed through attention to this framework,

[4] A participant suggested the Geo Indigenous Alliance from Australia as a potential CMBIS network that could be considered (https://www.geoindigenousalliance.com/).

during rounds of discussions over several years with workshop participants and the ILK task force. However, it is only one example of FPIC, and other good examples exist that authors could consider.[5]

Participants also highlighted that data sovereignty should also be a key concern in the assessment. Authors should be careful to properly cite and acknowledge contributions from ILK systems and contributors, and to explore issues relating to FPIC and data sovereignty in terms of the findings of the assessment. The IPBES data management policy also includes the CARE principles on Indigenous data governance (collective benefit, authority to control, responsibility, ethics),[6] and is a key resource for authors.

Participants also noted the need to ensure benefits and accessibility of the results for Indigenous Peoples and local communities, noting that some of the main aims of IPBES assessments are to encourage governments and others to work more closely with Indigenous Peoples and local communities. IPBES produces summaries for Indigenous Peoples and local communities from the finished assessments in different official UN languages (e.g., English, French and Spanish). The IPBES task force and technical support unit on ILK are keen to engage with other organizations that produce materials from assessments, including community organizations or networks who wish to translate materials into local and Indigenous languages.

Participants emphasized the critical importance of ensuring that the assessment, both in its process and findings, does not perpetuate or reinforce colonial structures, processes or power imbalances.

3.2 Concepts and definitions

Participants discussed key concepts in relation to the assessment, noting that these could be discussed in chapter 1 of the assessment.

For example, participants discussed the concept of "**Indigenous and local knowledge systems**",[7] noting that this includes practices, worldviews, values, philosophies, tools, frameworks, methods, innovations and technologies, and that these can be specified along with the core concept where needed. Participants noted that in the Convention on Biological Biodiversity (CBD) the term

[5] Participants also noted that FAO has good resources on the definitions of free, prior and informed consent:

- https://www.fao.org/indigenous-peoples/pillars-of-work/free--prior-and-informed-consent/en
- https://elearning.fao.org/course/view.php?id=500

[6] For more on the CARE principles, please see: https://www.gida-global.org/care

[7] Defined in the IPBES glossary here. These definitions are for reference, and can be adapted.

"traditional knowledge" is used, which can be seen as meaning broadly the same as Indigenous and local knowledge. Some participants also suggested the concept of "Indigenous science" noting that a key aim of this concept is to demonstrate that ILK systems should be considered to be equally as rigorous and valid as academic scientific processes. Participants noted that this terminology is still being discussed amongst Indigenous groups, and is perhaps most accepted in Canada and Australia. For other groups, Indigenous science could be considered as one aspect of broader ILK systems, as the concept of Indigenous science may not be understood to include the full diversity of values, worldviews and spiritual systems that are seen with ILK systems.

Participants discussed the concept of "**community-based monitoring and information systems**"[8] noting that these may use some formal scientific methods, but that the aim is to represent or document ILK systems, and they will generally be underpinned by ILK values and worldviews, rather than the values and worldviews of formal science. An author noted that in Colombia, communities decided not to use the terminology of "community-based monitoring and information systems", and instead used "Indigenous geographic information system". There may therefore be a diversity of ways of expressing similar concepts, which is important to consider in terms of analysis and representation within the assessment.

Participants discussed the concept of "**citizen science**",[9] noting that this should be considered to be different from ILK systems or CBMIS. Citizen science implies teaching methods from formal science to members of the public so they can participate in science research processes. Meanwhile, CBMIS may use some formal scientific methods, but the aim is to represent or document ILK systems, and they will generally be underpinned by ILK values and worldviews, rather than the values and worldviews of science, as discussed above. ILK systems may also differ from citizen science in their process and goals. ILK is often held by individuals and there may be community verification processes that do not focus on the "data" produced, but on the trustworthiness of the knowledge-holder, for example considering if the community raised this person and taught them about life, the interconnectedness of the environment and the ecology of that area. There is often an innate trust in individual experiences because of the relationship of trust within the community.

Participants also discussed the terminology of "**Indigenous Peoples and local communities**". They highlighted growing concerns among Indigenous Peoples about the terminology, including that it can obscure the distinctive collective rights held by Indigenous Peoples under UNDRIP, by seeming to merge Indigenous Peoples with local communities. For example, they noted that some non-Indigenous communities are using the term "local communities" to claim land rights

[8] Also defined in the IPBES glossary here. These definitions are for reference and can be adapted.

[9] Also defined in the IPBES glossary here. These definitions are for reference and can be adapted.

or other entitlements. These claims can sometimes conflict with or undermine the rights of Indigenous Peoples living in the same areas. This has led many Indigenous Peoples to advocate for a clearer distinction between these two groups, by separating the terms. They noted that the lack of a clear definition of what is meant by "local communities" is one cause of this uncertainty, and recommended that the term should not be used until a clear definition is developed. However, some participants also noted that in some parts of the world, particularly in Africa and Asia, Indigenous Peoples may not be recognized by their governments, so a broader concept that allows inclusion of these groups can be important at the international level. The IPBES task force on ILK undertook a process of conceptualizing what is meant by "local communities" in IPBES, to give a more narrow concept that is more in line with Indigenous Peoples who are not recognized by their governments, as well as other groups with distinctive knowledge, values, worldviews, languages and long-term relationships with the environment, for example afro-descendent communities, while emphasizing that only Indigenous Peoples have a specific collective rights framework at the international level. This conceptualization can be found in section 2 of the IPBES methodological guidance for recognizing and working Indigenous and local knowledge.[10]

3.3 Monitoring within ILK systems

Participants highlighted that it is important to understand how Indigenous Peoples and local communities monitor within their own communities, cultures and knowledge systems, before exploring how they have, or could, become involved in other monitoring processes.

Participants emphasized the depth of knowledge in many communities, for example in Nunavut, Canada where community members know the physical and behavioural changes in mammals, fish and water over many years, and other communities where people know their environment so well that they notice changes. Participants also noted that Indigenous Peoples and local communities have always engaged in earth observations and monitoring, and that other scientific ways of monitoring are relatively recent. They noted that sometimes these important points can become lost amongst efforts to engage Indigenous Peoples and local communities in monitoring programmes using formalised scientific methods, and they emphasized that other monitoring programmes engaging Indigenous Peoples and local communities and their knowledge should always aim to remain grounded in the ways of knowing and monitoring found in ILK systems.

Participants discussed how Indigenous Peoples and local communities monitor within their own communities, cultures and knowledge systems. They emphasized that such monitoring is often

[10] The IPBES methodological guidance for recognizing and working Indigenous and local knowledge is available here.

holistic, simultaneously observing multiple aspects of nature, including animals, plants, water and rivers, weather, skies, spirits, and, crucially, the relationships of humans with all of these interconnected aspects. For example, in western Kenya, if a certain species of plant is flowering in plenty, then people know there is going to be a good harvest of honey, and that this will be good for the community.

Participants also explained that the monitoring practices of Indigenous Peoples and local communities are often embedded in their day-to-day lives, as part of their livelihoods, management of their natural resources and relationships within nature. This includes observations, collecting information for natural resource management such as differences in abundances, texture or taste, and making adjustments to their activities accordingly. A participant emphasized that instinct can be an essential part of monitoring, which comes into play in response to what is seen. Monitoring may also involve rituals to connect to cultural and spiritual aspects of the environment, or to help in understanding some aspects of it.

Often, everyone in the community may be involved in monitoring, for example monitoring may often be learnt by children in the company of their elders, as they learn how to provide themselves with food and shelter, and use resources sustainably, or monitoring can take place as children play and observe their surroundings. In many cases, for example among Inuit, people talk to one another and share their observations, discussing what they saw, what changes have happened, and their insights into causes of changes or what may happen next, so people build up a much broader picture of what is happening across their lands and waters than through personal observation alone. Each member holds a part of the knowledge, and the group must be together to share the whole picture.

In some communities, some aspects of knowledge and monitoring may however also be more limited or controlled. For example, some medicinal knowledge may be known only by a small group of people, or some roles in rituals may be held by certain people.

Participants noted that often the collective memory of the elders holds knowledge from the community over long timescales. Oral histories passed down through generations can also be part of the dynamic monitoring process, enhancing timescales over which observations are made and over which nature is known. For example, in Nunavut Inuit hunters know about 50-year cycles of caribou movements based on food abundance through oral history passed on by elders. Places named after species, or after the activities people carried out there, can also provide information about the past, and can show where there are changes. Overall, participants noted that linking observations to timeframes and to cycles in nature is a central aspect of many ILK systems.

Participants also noted that the monitoring systems of Indigenous Peoples and local communities are usually not separated out from the knowledge and governance systems that they use to guide

their livelihoods and survival. For many sciences, monitoring may be seen as a discrete, separate stage in a process, for example followed by analysis and action. Meanwhile, for many Indigenous Peoples and local communities, monitoring, analysing, acting, managing and governing are not necessarily separate activities.

Participants noted that it is therefore important to understand broader ILK systems in which monitoring systems are embedded, including governance, and also the values, worldviews and philosophies of life that underpin them. For example, they noted that many Indigenous Peoples and local communities see humans as part of nature, rather than as separate from it, and that landscapes, rocks and rivers may be understood as sentient beings. They noted that much of this knowledge is embedded in Indigenous and local languages, and cannot be accurately translated into English or other languages.

Examples of monitoring, concepts and terminology

New Zealand

Nick Roskruge

A participant from New Zealand (*Aotearoa* in the Māori language) explained that humans need to be considered in their correct place and that there is more to the world than the physical realm. For Māori, the world was in chaos until the spiritual world put it into order. Once that order was achieved, the spiritual world had the responsibility to create a future – things were able to evolve. Stones and other elements are alive, and they all existed before humankind. Māori acknowledge that they do not have control of a higher realm, which is not visible. For living beings, there is a spiritual element (*taha wairua*), an intellectual element (*taha hinengaro*), a social element (*taha whanaunga*) and a physical element (*taha tinana*) that make them a whole, and which they are accountable for. There is no individuality, or it becomes a selfish space. There is also a system for resource management and guardianship of sky, sea and land, enshrined in the concept of *kaitiakitanga*. People are considered the guardians (*kaitiaki*) of nature, and there is a recognized system of responsibility, in which animals and trees can also be considered as guardians. Not everyone has the same responsibilities, for example some people may be designated to produce medicines, and these responsibilities are selected before birth – they are not learned from textbooks but are lessons that flow across generations. It is important to understand this link across generations and with ancestors, and that each person is part of this link. This is embedded in the concept of *Whakapapa*.

Within this, there are *tohunga*, who are people, similar to priests, who can read environmental cues or signs (*tohu*). Nonetheless, the responsibility to be an observer, and to monitor, is held by everyone. Often in a traditional monitoring process there is a traditional baseline. Any natural resource has certain qualities (the *mauri* or life essence – the origin of the word *mauri* is tied to the concept of descent, as everything has a descent process). The person charged with being the

observer knows what to observe and what the qualities are expected to be, and can see if there are changes. Some of these qualities may be unspoken or unseen things tied to spirituality, which that may be difficult to include in a formal monitoring programme.

Suriname

Hugo Jabini

A participant explained that for the Saamaka people in Suriname, "we are nature and nature is us". There are key concepts that underpin their relationships with the forest, for example, *Tjubi di Matu da dee baka mii*, "protect the forest for the next generation" and *Njang Tide Meni Amanja,* "eat today, think of tomorrow". Since the communities are one with the nature, they have to think in this way. For example, rivers are important water resources, as they do not have tap water, and there are unwritten rules that people cannot pollute them. Use of the forest is also managed – some areas are set aside for palms that they use for their roofs, some spaces are set aside for cooking or art. There are also sacred places, that everyone knows have to be protected, though they do not have formal boundaries. They do not have a written culture, so in their imaginations they know that some things are sacred, for example big stones or big trees. If someone goes against these rules, restrictions are imposed by the community. That is how they monitor their existence.

Turtle Island (Canada)

Melanie Bateman

A participant from Mi'kma'ki (lands and territory of the Mi'kmaw in present day Atlantic Canada), explained Mi'kmaw terms that conceptualize connections to and responsibilities around nature, including *netukulimk*, which implies achieving adequate standards of community nutrition and wellbeing without jeopardizing the integrity, diversity or productivity of the environment.

Turtle Island (Canada)

Myrle Ballard

A participant explained that Anishinaabe terms can be linked to monitoring, for instance, the directions north *keewatinong*, east *wabanaong,* west *negabonong,* and south *shawanong*, have at their root meaning knowledge of bird migrations, wind patterns, weather and growth of vegetation, among other elements, which are tied to monitoring through the seasons.

Indonesia

Andika Saputra

Monitoring, governance and spirituality

The Jambi Malay community, in Sumatra, Indonesia, is an Indigenous People that has close relationships to its forests, with its own monitoring, decision-making and governance systems. This may be especially true of the Huluan Malay community, and the Sungai Tenang Clan. This

community has been monitoring the forests independently, but feels that it may need additional support to monitor and manage its forests in the modern world.

The community believes in the closeness between humans and the forest, and that people should take care of the forest, because they live beside the forest and it is their source of livelihood and life. Forests also grew before humans existed, and they believe that people are only borrowing the forests from God. As a result, people protect the forest, with an awareness that "when you protect the forest, the forest will provide benefits." This is a value system that has been passed down from the ancestors. Traditional culture in the area is closely related to forest conservation efforts, especially in the Penghulu area (where the Sungai Tenang Clan live). This is proven by the fact that customary regulations regarding forests are still being implemented. People also still have strong spiritual beliefs, including:

Belief in mountains

There is a volcano called *Mount Masurai*, and three hills called *Bukit Tongkat*, *Bukit Sedingin* and *Bukit Gedang*, each of which has a guard called *diwo*. *Diwo* will not disturb humans when humans enter the forest with good intentions. If a human gets lost in the forest, the *diwo* will transform into a black bird that will jump between the branches of the trees and walk on the ground to lead the human to the village.

Trust in the relationship between humans and tigers (Datuk)

As guardians and leaders of life in the forest who value the relationship with the forest, the community believes that if a human meets a tiger and the tiger attacks the human, then the human is guilty because he has entered the territory of the tiger (*datuk*). The tiger will not eat or drink for 40 days after meeting the human. Tigers are also a natural indicator or sign for the community, and when a tiger enters a village settlement, this is a sign that a disaster will occur in the village or region, such as disease or land grabbing by outside actors.

Protection of big trees

The community protects and believes in big trees that are home to many species and spirit creatures. This is shown by the expression "*kayu gedang di Tengah padang, batang gedang tempat belindung, daun nan banyak tempat betedoh, aka nan rumpak tempat punyanggo, dahan nan rimbun tempat bugayut"* which means "Large wood in the middle of the field, a big tree for shelter, lots of leaves for protection, strong roots for support, thick branches to depend on". In other words, trees provide benefits to humans in many ways. So, as good humans, community members are prohibited from cutting down trees without good reasons.

Trust in rivers

The river has a guardian named *Si Bugau*. The *bugau* is a supernatural creature that inhabits every river around the area. The *bugau* does not like rivers that are polluted with trees cut down by humans, rubbish, or other things that pollute it. It is also believed that the *bugau* will come once

a year, and he will sweep away everything in the river, including humans who are active at that time. Cases of humans disappearing in rivers are the work of *Si Bugau*, and if humans are lost in the river, *Si Bugau* will return their bodies within three or four days after they disappear.

Rules around land clearing

There are also customary rules regarding land clearing for the community, so that people are not allowed to cut down forests carelessly. In this regulation, people are only allowed to clear two hectares of land per family for plantation purposes. If somebody requires more than this, they have to go through the *Ninik Deliberation* (village leadership council) to be given new land clearing regulations.

There are several traditional forest regulations that people follow today, namely:

a. Prohibition of land clearing in water source areas, as this will bring pain and harm to the perpetrators, because water sources have inhabitants other than humans;

b. It is prohibited to cut *Rimba Penghulu/Rimba Ninik Mamak* (forest belonging to the leader), and this forest will only be given to people who have just started families, and even then there are certain limits;

c. Prohibition of throwing rubbish and cutting down trees upstream of the river which could make *Si Bugau* angry;

d. It is prohibited to sell land in forest areas to parties outside the village. Even if a sale and purchase occurs, the seller and buyer will be summoned by the *ninik mamak* to make a statement and find the identity of the buyer. This aims to save forests from claims by irresponsible people, prevent intrusions into village areas, and minimize other crimes.

These rules are not stated in a document, but they have been followed by the people for a long time.

Dubalang

A *Dubalang* (a young traditional leader) is a selected young person who will become an inter-regional diplomat, guard of the *Parit diambang* Kuto (Village Area) and village territory guard. A *Dubalang* will be equipped with *Lit* (knowledge of how to negotiate with other tribes or other clans or settle disputes as delegates in external meetings), taught to be humble, and equipped with *Silek Langkah Empat* (the name of silat) which is a martial art studied for one year as a condition for becoming a *Dubalang* who is ready to lead his members in all situations. *Silek Langkah Empat* was adopted from the movements of the Sumatran tiger (like scratching and incapacitating) which the *Dubalang* uses to survive in the forest and defend their territory from external threats. A *Dubalang* cannot attack someone who does not have martial arts knowledge, because a warrior must fight in the *Gelanggang* (fighting arena).

Challenges for Indigenous Peoples

In terms of defending territory, the Indigenous Peoples have challenges such as:

- Currently *Silek Langkah Empat* is less popular with young people, so concern for the environment and forests is also reduced. As a result, the *dubalang*'s arena (the place to practice and fight) is no longer used by the younger generation for learning.
- Many people live by modern rules and forget the old culture. As a result, there are many rules of life regulated in customary laws that are starting to diminish and may be forgotten in the future.
- There are threats from companies, corporations and forestry programmes performing activities that do not involve the communities, and which will have a negative impact on nature and communities who are connected to the rivers, trees and mountains, including through their spiritual connections.

Participants also noted that communities may pay particular attention to monitoring when community members see changes in nature, or when there are challenges to livelihoods due to changing resources and environments. For example, in Nunavut community members are seeing impacts of climate change, including new species such as killer whales, changes in habits of some animals such as polar bears, ice forming later and the sun rising differently. Such changes generate discussion in the community, and questions as to what is causing them, and how people and animals can adapt. Monitoring may also become a particular focus when there are changing resource needs, for example in the Philippines, where more wood was needed for houses in some communities and they began to monitor and plan how to manage this. Conflicts around resources, including the need to prove their knowledge to governments, scientists or others, for example around polar bear numbers in Nunavut, or to negotiate around resource use or rights, can also enhance explicit attention to monitoring.

Case study: Monitoring of new plants and animals by the *Bukusu* community in western Kenya and the *Bagisu* in Uganda

Wycliffe Wanzala

Background

Among the Bukusu community in western Kenya and the Bagisu in Uganda, each ethnic group has a cultural governance system managed by a council of elders. The council of elders for a given region monitors and evaluates the entire ecosystem's situation and gives reports during their larger meetings. The council of elders works in harmony with the people's culture, taboos, norms and customs. Surveillance of the ecosystem takes place during hunting and gathering, and communities encourage reporting of new biological species emerging in the environment. Monitoring and evaluation through observations and comparing and contrasting the current and

past environments help determine hotspots for enhanced focus. Visions and foretelling are also critical in monitoring biodiversity and the ecosystem.

New plant species

For a new species of plant identified in the environment, it was a rule that an elder was notified, who then convened a meeting of the council of elders to confirm the new species of plant, quarantine it and set a date for a ritual ceremony to be performed to determine its destiny. On the set date, a sheep is slaughtered at the site of the new plant. The stomach contents of the sheep are mixed in water with the aerial parts of a plant called *Kumwandata* in their language, and another plant called *Lufufu* (plural: *Chifufu*). This is sprinkled on a branch taken from *Kumwandata* by a chosen elder. The elder also puts them on the new plant species and around it while saying the oathing statement of the Indigenous community.

On the third day, they come back to check on the leaves of *Kumwandata* and *Lufufu*. If they are dry or termites have eaten them, then the plant is culturally bad, with a bad omen. It is then uprooted and completely burnt. However, if they come back on the third day and find that the leaves have not dried up and have not been eaten by termites, then the plant is good for the native ecosystem and it is then given a local name and its uses and applications are determined by the association with those of a similar local plant species in the environment. However, in certain special circumstances, the council of elders could take seven days before going back to check if the leaves of *Kumwandata* and *Lufufu* had been affected or not.

The council of elders gave direction on the use of plant species in the ecosystem, and people in the community were prohibited from using certain plant species, with respect to their sex, age and what the target plant species are used for in the society. This was a robust cultural strategy for sustainable utilisation of plant species. This requires a detailed research programme to build relevant frameworks, mechanisms and processes.

Frequently used plant species for culture (such as *Kumusola*, *Kumukomosi, Lusunu, Kumukimila, Kumulaa, Kumukhonge, Entang'uni, Kumululusia* or *Lusitati*) and ethnomedicines, were monitored with respect to their accessibility and availability. Again, their frequencies were reported during meetings convened by the council of elders and appropriate actions were taken. Actions taken varied including planting more species, halting use, announcing alternative species, or the creation of shrines, among others.

New animal species

If a new animal species (whether *Esang'i*- the eaten wild animal species with hooves or *Esolo*-non-eaten wild animal species with claws) is seen in the area, the council of elders identifies its footprints for a detailed study. If the study shows that the animal had claws instead of hooves, a child is given a concoction of the *Kulandula* plant to put in the footprints, and the elders curse the animal never to come back again, since claws indicate that the animal's effects on the native

ecosystem, economy and livelihoods would be bad. Even if the new animal had hooves, if it collapses on its right-hand side when killed for the first time, it is not eaten. Also if the leaves of the plant dried up following a ceremony similar to that done for new plants, described above, then it is concluded that:

- The animal is bad, not to be used at all in any way as food or ethnomedicines;
- The animal came into the ecosystem with a bad omen; and
- That particular place where the animal has appeared is bad, and as a result people would migrate from the site to a new place for settlement.

The direction from which the animal emerged is also critical and strategic in future monitoring.

Managing new species

The communities have control measures such as restrictions and taboos on bringing species into their environment. These species could be either new (not known to that community) and/or prohibited and therefore considered evil. Such newly identified biological species are not used in their cultural practices and customs in any ways, as a quarantine measure. Amongst the community members, barter trade is strictly conducted with only known species or minerals, but not new or foreign ones. This follows education, public awareness and capacity-building by older men and women in the society targeting the young generation as a way of passing on knowledge from one generation to the next by word of mouth. Such programmes are particularly conducted during festivals and ceremonies, for example those that take place at the end of the year, including transboundary customs between groups in Kenya and Uganda.

Participants also noted that their knowledge and the monitoring embedded within in it changes over time, and adapts to new situations. For example, in Eastern Canada new types of sands were moved onto Indigenous lands that changed the ecosystem. The communities observed this, and also had to build new knowledge because the ecosystem had changed following this event.

Overall, participants highlighted that monitoring by Indigenous Peoples and local communities, and the systems of knowledge, management and governance that are tied to this, make significant contributions to global biodiversity conservation and human wellbeing. These significant contributions should be recognized and supported, even where knowledge from these systems is not easily understandable or useable by scientific systems, or at national or global levels.

Participants emphasized that understanding ILK and the monitoring systems embedded therein should be a first step towards building monitoring programmes with Indigenous Peoples and local communities. Participants noted that usually their ways of monitoring can only really be understood through spending time in communities, and observing the ways in which they live. As one participant explained, you have to have your feet in the creek to understand what

fishermen are doing. Especially for the elders, much of their knowledge is tied to the land, and can only be shared through spending time on the land in their company.

3.4 Monitoring programmes and projects by Indigenous Peoples and local communities

Participants discussed the ways in which Indigenous Peoples and local communities have engaged in monitoring programmes or developed community-based monitoring and information systems (CBMIS).

3.4.1 Why do communities engage in monitoring programmes?

Participants explained that the motivations for engaging in monitoring programmes or creating CBMIS are often due to external pressures, rather than what communities might choose for themselves. Such external pressures may include the need to prove the effectiveness or validity of their knowledge systems and land management, including their monitoring systems, to external actors such as scientists or governments. Conflicts or pressures, including the need to advocate for their human rights and Indigenous rights, or negotiate or prove land tenure and land rights, are also reasons why communities may choose or feel forced to engage in different forms of research and monitoring. For example, in Suriname, communities have developed CBMIS to respond to threats including illegal logging and mining. They have an aspiration to be able to manage their territory in a sustainable way, and to do this they have to prove that they have existed in the forest for 300 years and to prove that they have the needed knowledge and skills. In Nunavut, some CBMIS have been developed in response to increased shipping and industrial development due to climate change, and the consequent potential impacts on sea ice and marine life.

Participants also noted that CBMIS can be used to enhance community relationships with the land, and can be tools for strengthening knowledge transmission, including in cases where knowledge systems and connections with the land have been weakened due to external pressures.

Participants also noted that in some instances, Indigenous Peoples and local communities are using monitoring programmes to coordinate their knowledge, observations and governance across vast territories. This is the case in regions like Nunavut, where large areas are governed collectively (see box below in section 3.4.3), and in Colombia, where national Indigenous organizations aim to unify and understand the diverse knowledge systems of Indigenous Peoples throughout the country (see box below in section 3.6).

Participants highlighted that ultimately, many communities are trying to find ways to protect their human rights, often in the face of violence or hardship. Enhancing the power of, and

recognition for, their own governance systems can be another crucial consideration, as well as building more equal partnerships with governments and others.

Many communities also want to ensure that their knowledge is influencing decision-making at different levels, recognising that often not much decision-making power rests in their communities. Participants also explained that in many cases communities are applying CMBIS as well as other research methods to translate information for decision-makers, ensuring it is both understandable and culturally appropriate for the communities. They emphasized that this translation should be done strategically and carefully, as not all information can or needs to be shared.

Participants also emphasized that in many cases, the final goal is to ensure that nature is protected, not only to benefit humans, but because of the intrinsic value and importance of nature in itself. This coincides with calls to recognize the rights of Mother Earth.

3.4.2 Weaving ILK systems and scientific methods

Participants noted that often CBMIS partially use methods and tools from science. They can therefore demonstrate ways in which ILK can be woven with different degrees of formal scientific methods to achieve diverse goals, for example ILK systems working with mapping using GPS and geographic information systems (GIS). Participants highlighted that scientific techniques are often not a threat to ILK systems in themselves; instead, they can be complementary and beneficial to some communities. They emphasized that viewing ILK systems and science methods as oppositional is unhelpful, as many communities successfully combine both.

The term, *etuaptmumk*, "two-eyed seeing" developed by Mik'maw Indigenous elders Albert and Murdena Marshall, conveys the importance of understanding diverse perspectives and knowledge systems, in particular Indigenous ways of knowing and academic scientific ways of knowing, recognizing that many Indigenous communities now need to do both.

Participants however also noted the importance of balance, warning that in some cases if scientific principles and methods dominate too much, CBMIS could lose their connections to ILK systems, elders and their relationship with the land. There is also a risk that technical experts may begin to analyze, interpret and speak on behalf of communities without their input. To mitigate this, monitoring methods may need to be grounded in community practices and ways of monitoring, rather than becoming detached or removed from local knowledge and experiences. Participants highlighted that the balance for each community may be different, depending on their knowledge systems and governance structures, the threats or challenges the communities are facing, the processes they are trying to influence or audiences they are trying to reach, and the consequent aims of the CBMIS. To manage this, it can be important to have ongoing discussions between elders and youth, and to decide on key principles and goals.

Participants noted that, whichever balance communities find, it is crucial that communities control the research process, including setting the goals and choosing which methods they will use from ILK or other sciences. The broader context of the knowledge, values, relationships (both among people and with the land) and governance systems in which the research or monitoring systems are based is also crucial (for example the Inuit principles in the box below). Moreover, other essential elements include who has the power to make decisions based on the information produced, and the decisions taken. For instance, in the Philippines, communities use mapping and transects in the forest to showcase and strengthen their governance systems (see case study in section 3.6 below).

Example of value systems and principles

Nunavut, Canada

Kathy Padluq

Inuit have created a set of eight core principles developed through their Indigenous Knowledge (or *Inuit Qaujimajatuqangit)* that inform their governance, research and other collective actions:

- *Inuuqatigiitsiarniq*: Respecting others, relationships and caring for people.
- *Tunnganarniq*: Fostering good spirits by being open, welcoming and inclusive.
- *Pijitsirniq*: Serving and providing for family and/or community.
- *Aajiiqatigiinniq*: Decision-making through discussion and consensus.
- *Pilimmaksarniq/Pijariuqsarniq*: Development of skills through observation, mentoring, practice and effort.
- *Piliriqatigiinniq/Ikajuqtigiinniq*: Working together for a common cause.
- *Qanuqtuurniq*: Being innovative and resourceful.
- *Avatittinnik Kamatsiarniq*: Respect and care for the land, animals and the environment.

3.4.3 Methods for monitoring

Participants discussed the different methods that communities have adopted for monitoring and other forms of research.

Participants noted that many communities have decided to document their knowledge, often through youth collaborating with elders. This effort is driven by concerns about losing their knowledge, or the need to demonstrate its validity to external audiences, as they know that written knowledge is often deemed more credible by scientists or governments. Some communities are also formalizing their governance systems by writing down rules or guidelines, often in response to pressure from national governments or external actors. However, participants emphasized that much of their knowledge, monitoring systems and governance cannot be easily documented. Therefore, it is crucial that monitoring programmes and other

forms of research find ways to work with oral or experiential knowledge, including by engaging directly with communities, including during time on the land.

Participants also shared a number of case studies, which show the different ways that communities are connecting methods from ILK systems and science (see case study boxes below).

Case study: Community-based monitoring in Mt. Elgon, Chepkitale, Kenya
Phoebe Ndiema

Background information on Mt. Elgon Forest

Mt. Elgon Forest is the home of the Ogiek Indigenous People. It is recognised as a significant water tower. It is also a UNESCO transboundary biosphere reserve, recognized for its richness in biodiversity.

Goals of the community-based monitoring

The goals of the community-based monitoring include:

- Restoration of biodiversity: Understanding the current state of plant and animal species to guide restoration efforts;
- Sustainable use of biodiversity planning: Community-led monitoring to help the community collectively discuss and finetune customary resource use without compromising the long-term availability of resources;
- Conservation of biodiversity: Protecting endangered species and their habitats to maintain the ecological balance and preserve the cultural heritage of the Ogiek community;
- Demonstrating the biodiversity on Mt. Elgon to national and international conservation policymakers;
- Further strengthen the ongoing legal cases on land rights; and
- Demonstrate stewardship by Ogiek in coexistence with nature.

Methods

The team working on the monitoring held several meetings with each Ogiek village, to explain in their own language why they were starting the monitoring programme and to explain and propose how the information would be shared. Each village nominated their own monitors (three men and one woman) to monitor their village's land.

The community tried different mapping tools and methods over many years, as it took time to find methods that suited the community interests. The use of some technologies started in 2020 under a mapping project called The Wealth of Our Lands. Currently, the community is monitoring their biodiversity under the Transformative Pathways project.

Methods now used include:

- Traditional approaches, i.e., monitoring embedded in Ogiek ways of life;

- Documenting community by-laws;
- Ogiek Spatial plan;
- Camera traps;
- Line transects;
- Quadrats; and
- Mapping resources in the community using Mapeo (a free digital toolset for documenting, monitoring and mapping many types of data).

Community engagement and communication

Everyone plays a key role. For example, elders have formed a validation committee. Individuals engaged in the monitoring know the land and its history. Women also provide specific knowledge on plants, including vegetable and firewood gathering locations and some medicinal plants. An important task is to make sure that women, many of whom do not know how to read, fully engage in these types of community activities, as often they do not participate in community engagement meetings due to conflicting roles in the household. They have now created an association of women, and have formed the East Africa Women Led Assemblies to discuss these challenges and issues.

The community collaborated with Forest Peoples Programme and Digital Democracy (now called Awana Digital) to produce maps. They have also engaged the Interdisciplinary Centre for Conservation Science from Oxford University to build their capacity on how to use monitoring tools and how to analyse data while others can be learnt through practice. This learning is a continuous process.

Outcomes

Community members have gained a clearer understanding of the boundaries of their lands, and what they contain. This has allowed them to negotiate and push for access to resources more confidently and effectively. They have been granted some lands back, using the evidence that they have been able to collect.

The process has fostered inter-generational transmission of knowledge from elders to youths

Challenges

There are a number of challenges faced by the communities and their monitoring, including:

- Tenure rights challenges, as communities do not have recognized tenure over their lands;
- Political will outside the community does not seem to support of the overall goals and aims, or the communities themselves;
- Conservation policies that prioritise nature over people, and assume people are a threat to nature; and

- Insufficient resources, e.g., for camera traps, or to support monitors in their work, and a dependence on fundraising.

Case study: Monitoring by the Manitoba Métis Federation, Canada

Colin Gisiger

Background

The Red River Métis is an Indigenous collectivity and Aboriginal People within the meaning of section 35 of the Canadian Constitution Act, 1982. The Red River Métis hold rights, claims and interests throughout and beyond the Province of Manitoba that are recognized and affirmed in the Canadian Constitution. The Manitoba Métis Federation is the National Government of the Red River Métis and provides democratic, responsible and accountable governance on behalf of the Red River Métis, utilizing constitutional authorities delegated by its citizens. The Manitoba Métis Federation and the Canadian government signed the historic Red River Métis Self-Government Recognition and Implementation Treaty on 30 November 2024, cementing its role as the only officially recognized Métis Government in Canada. The Manitoba Métis Federation represents the rights, claims and interests of the Red River Métis, not only within Manitoba but beyond borders across the National Homeland of the Red River Métis.

Monitoring and stewardship programmes

The Manitoba Métis Federation has developed a network of Red River Métis-Led environmental monitoring programmes, including:

- The *Red River Métis Stewards of the Homeland Programme*, including community-driven monitoring and stewardship initiatives across the National Homeland of the Red River Métis;
- The *Métis Community-Based Climate Monitoring Programme*, including citizen-led monitoring initiatives which track real-time climate and environmental data across the National Homeland of the Red River Métis; and
- The *Indigenous Protected and Conserved Area (IPCA) Programme*, demonstrating an Indigenous-initiated long-term commitment to conservation.

For example, the Manitoba Métis Federation's proposed Kettle Hills Blueberry Patch IPCA aims to protect and revitalize the Red River Métis "breadbasket" by guiding sustainable land use, economic development and conservation planning under a shared Indigenous governance structure. The Kettle Hills Blueberry Patch is a critical habitat for species of cultural and ecological significance to the Red River Métis, and supports Red River Métis cultural practices and traditional economies.

Kettle Hills Monitoring Plans have methodologies that include weaving formal science metrics with Red River Métis traditional knowledge. Its goals and objectives include gathering baseline data for species of cultural and ecological importance to the Red River Métis, including moose, migratory birds, blueberries, traditional medicines and species at risk, to inform conservation planning and stewardship initiatives. Such plans include:

- A moose monitoring plan, with trail camera data collection guided by Red River Métis knowledge in moose habitat, to inform big game management planning;
- A bird monitoring plan, with autonomous recording unit deployment paired with visual habitat assessments, to understand migratory bird and species at risk prevalence; and
- A flora and fauna monitoring plan, including vegetation quadrat sampling in post-burn sites, with the aim of supporting long-term analysis of blueberries and traditional medicines.

Next steps include the development of a Kettle Hills Stewardship Plan, aiming to integrate monitoring data into a comprehensive stewardship framework.

Methods

These monitoring programmes and stewardship plans have taken an approach to weaving Indigenous knowledge and formal science. The Manitoba Métis Federation's methodologies for gathering information include engaging citizens through community meetings to gather Red River Métis insights and perspectives, interactive mapping exercises to document Red River Métis traditional knowledge and land use practices, and on-the-land field workshops to facilitate direct engagement in cultural and environmental initiatives.

Case study: Inuit Marine Monitoring Programme, Nunavut, Canada

Daniel Taukie

Background

Nunavut covers 1,836,994 km^2 of land and 160,930 km^2 of ocean and water, with a total area of 2,038,722 km^2. It is the largest Territory or Province in Canada, and home to the longest coastline in Canada with over 36,000 Islands across the Territory. Nunavut is the 3rd and newest Territory in Canada, of its 13 sub-national administrative divisions.

It was separated officially from the Northwest Territories on 1 April 1999, through the *Nunavut Act* and the *Nunavut Land Claims Agreement Act*, which passes the territory to the Inuit for possible self-government approaches in the future.

Nunavut Tunngavik Incorporated (NTI) is the legal representative of the Inuit of Nunavut for the purposes of native treaty rights and treaty negotiation. In October 2016, an NTI Board resolution called on the Government of Canada and Nunavut to strengthen monitoring and management

efforts on marine shipping traffic in Nunavut waters and directed NTI and Regional Inuit Associations to establish, on a pilot basis, an Inuit-led monitoring system in 2017.

Aims and needs from the marine vessel tracking monitoring programme

Due to climate change and the reduction of ice in seaways, including the Northwest Passage, shipping is increasing in Nunavut. Communities have many concerns, including:

- Small vessels transiting near community harvesting areas;
- Potential for accidents, pollution, oil spills; and
- Wildlife disturbance, interference with hunting and traditional practices, and the well-being of marine mammals and their habitat.

There was a need to support Nunavut communities to implement policy and guidelines for the Northwest Passage in the future, and Nunavut communities needed more information on vessel activities near their communities, and to have a greater role in shipping management and monitoring. The Inuit Marine Monitors Programme was set up in 2017 to support these needs. NTI also created a Marine Department in July 2024.

Methods for the marine vessel tracking monitoring programme

Methods for the Inuit Marine Monitors Programme include:

- Inuit marine monitors – Community Based-Monitoring, 2017 to 2020; and
- Real-time vessel tracking technology (Automated Identification Systems), 2017 to Present.

Community collaboration with local Hunters and Trappers Organizations and Associations is key to successful installations of the equipment. Training local capacity has been essential for the operations and maintenance of Automated Identification System equipment and units for NTI.

The Nunavut Trichinella Detection Programme

Under the Inuit Marine Monitors Programme, the Nunavut *Trichinella* Detection Programme was also established in 2017 to provide faster test results for *Trichinella* parasites in land foods to enhance Inuit health and confidence in traditional foods. The program coordinator for the Inuit Marine Monitors Programme is a trained *Trichinella* analyst (by the Canadian Food Inspection Agency) and has been a part of the Iqaluit team since 2017.

Challenges and lessons learnt

Challenges and lessons learnt from the Inuit Marine Monitors Programme include:

- The need for more long-term sustainable funding for the programme;
- The need for and importance of capacity-building on a regional and community level;
- The need for more capacity within NTI's new Marine Department;
- The need to ensure that traditional and Indigenous knowledge systems are included and implemented into decision-making on fieldwork or data analysis;

- Infrastructure for data hosting and data sovereignty are key; and
- The need to educate youth on NTI programs for community engagements and future opportunities on self-determination.

3.5 Scientific monitoring

Participants also discussed monitoring programmes that are grounded in science, noting that they can clash with the worldviews and values of Indigenous Peoples and local communities. They noted that scientific research and projects often disrupts ILK systems by imposing external methods, goals and worldviews. Furthermore, an overreliance on technology can undermine the efforts of local observers who are doing monitoring on the ground. They also noted that technology may not work well in places like Nunavut, due to the intense cold, so people monitoring on the ground can give more accurate information.

Participants also noted that certain monitoring techniques, such as tranquillizing and tagging bears and tagging caribou, can be disrespectful and distress or hurt the animals. These practices may also alter the animals´ behavior, leading to inaccurate data. In contrast, Inuit hunting is conducted out of necessity and with a deep respect for the animals.

Overall, participants highlighted that monitoring systems should respect the underlying values and worldviews of Indigenous Peoples and local communities, if the goal is to build collaborations between knowledge systems and trust between communities and researchers.

3.6 Connections to national and global levels

Participants discussed the ways that ILK systems and CBMIS can connect to national and international levels. They noted that often, including in the examples above from Kenya and Canada, it is not clear how to connect the monitoring taking place at the community or territory level to national processes, or beyond to the global level. A lack of trust or connection to governments, or unclear processes, were highlighted as key challenges.

Following a presentation on the Kunming-Montreal Global Biodiversity Framework (summary in the box below) participants noted that this new framework offers opportunities for Indigenous Peoples and local communities to contribute their knowledge and monitoring processes at a global level, and also to receive more recognition and support for their efforts and contributions.

Presentation: The Kunming-Montreal Global Biodiversity Framework and Indigenous Peoples and local communities

Maurizio Farhan Ferrari

Background

In December 2022, in Montreal, Canada, the Conference of Parties to the CBD at its 15th meeting (CBD COP 15) adopted the Kunming-Montreal Global Biodiversity Framework (KMGBF). This follows the mixed results and insufficient progress of the Aichi Biodiversity Targets (Strategic Plan 2011-2020). The KMGBF builds in part on the IPBES Global Assessment. It includes the 2050 Vision for Biodiversity (with 4 Goals) and a Mission for 2030 (with 23 targets to achieve the 2050 goals).

The KMGBF is significant as it goes beyond considering and protecting biodiversity in isolation, to also emphasize:

- Interlinked social-ecological systems;
- Human rights and Indigenous rights;
- Diverse values of nature;
- The crucial role of Indigenous Peoples and local communities and their traditional knowledge in achieving biodiversity conservation and sustainable use goals, with FPIC; and
- The full and effective participation of Indigenous Peoples and local communities in biodiversity governance.

Section C: Considerations for the implementation of the KMGBF

The KMGBF also includes, in Section C,[11] considerations for its implementation, including its Vision, Mission, Goals and Targets, noting that they should be understood, acted upon, implemented, reported and evaluated consistent with the following (only one selected point is given below):

a) Contribution and rights of Indigenous Peoples and local communities:

The Framework acknowledges the important roles and contributions of Indigenous Peoples and local communities as custodians of biodiversity and as partners in its conservation, restoration and sustainable use. The Framework's implementation must ensure that the rights, knowledge, including traditional knowledge[12] associated with biodiversity, innovations, worldviews, values and practices of Indigenous Peoples and local communities are respected, and documented and preserved with their free, prior and informed consent, including through their full and effective participation in decision-making, in accordance with relevant national legislation, international

[11] See: https://www.cbd.int/gbf/introduction

[12] The CBD uses "traditional knowledge" while IPBES uses "Indigenous and local knowledge" to refer to the same bodies of knowledge.

instruments, including the United Nations Declaration on the Rights of Indigenous Peoples and human rights law. In this regard, nothing in this framework may be construed as diminishing or extinguishing the rights that indigenous peoples currently have or may acquire in the future;

Monitoring the implementation of the KMGBF

At CBD COP 15, decisions on the following items were adopted in addition to the KMGBF:

- The monitoring framework for the KMGBF; and
- Planning, monitoring, reporting and reviewing (National Biodiversity Strategies and Action Plans (NBSAPs) and national reports)

The monitoring framework includes a set of indicators to use in NBSAPs and national reports and encourages the use of national and sub-national indicators. It also urges Parties to recognise and support CBMIS in monitoring the implementation of the KMGBF. An Ad hoc technical expert group was set up to further develop the monitoring framework, for final adoption at COP16.

These monitoring framework and planning and reporting systems will need to reflect:

- Interlinked social-ecological systems;
- Human rights and Indigenous rights;
- Indigenous Peoples and local communities and their knowledge;
- Diverse values; and
- Linkages between local, national and global levels.

They therefore present a significant role for ILK and CBMIS.

Indicators on traditional knowledge

Related to the KMGBF, there are also four traditional knowledge indicators that have been developed by the CBD as part of its Article 8(j)[13] process:

- Status and trends of linguistic diversity and numbers of speakers of Indigenous languages;
- Status and trends in the practice of traditional occupations (which has been included as a headline indicator for KMGBF Target 9: *Manage Wild Species Sustainably To Benefit People*);
- Status and trends in land-use change and land tenure in the traditional territories of Indigenous and local communities (which has been included as a headline indicator for target 22: *Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all*); and

[13] Article 8(j) of the CBD: Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

- Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of Indigenous and local communities in the national implementation of the Strategic Plan.

Following this presentation, participants noted that a focus on the monitoring of rights and participation is also needed within the KMGBF.

A participant also shared an example from the Philippines of how communities have used the opportunity presented by the KMGBF to develop their own framework and process from which monitoring can take place.

Case study: Facilitating the formulation of the Indigenous Peoples Biodiversity Strategic Action Plan

Dave de Vera

Background

With the adoption of the KMGBF, the Philippines underwent a process of aligning the Philippine Biodiversity Strategy and Action Plan (PBSAP) with the new global framework.

Need and aims

Indigenous Peoples and support groups, who were not visible in the formulation of the previous PBSAP, saw this as an opportunity to collectively contribute to effective and inclusive biodiversity policies and actions, to ensure the recognition of the rights, commitments and contributions of Indigenous Peoples to biodiversity conservation, sustainable use and benefit sharing.

Process

Indigenous groups and communities participated in the formal Philippine Biodiversity Strategy and Action Plan process facilitated by the government, and also convened and facilitated their own independent process in formulating an Indigenous Peoples' Biodiversity Strategy and Action Plan (IPBSAP).

This was done during a series of national and inter-regional roundtable discussions. In November 2023, 44 delegates from 26 organizations gathered in Diliman, Quezon City for a national roundtable discussion to jumpstart a capacity-building and consensus-building process towards articulating and formulating Indigenous Peoples' perspectives, concerns, issues, targets, contributions and commitments to biodiversity conservation, sustainable use and benefit sharing.

This was followed by an inter-regional roundtable discussion in Baguio City, Northern Luzon, in January 2024, with 43 delegates including Indigenous representatives, Indigenous Peoples Mandatory Representatives and representatives from the National Commission on Indigenous Peoples Cordillera Administrative Region. A second national roundtable on Indigenous Peoples

and Biodiversity was held in May 2024 in Quezon City, with more than 50 delegates from 34 organizations/communities from around the country.

Indigenous representatives formally presented their key messages and guidance for PBSAP Implementation to representatives from the Department of the Environment and Natural Resources Biodiversity Management Bureau, and the National Commission on Indigenous Peoples.

Overall, thirty Indigenous Peoples Organizations representing Indigenous communities all over the Philippines were involved, along with NGOs and some government representatives.

The Indigenous Peoples' Biodiversity Strategy and Action Plan

One key result of this process was the IPBSAP. The IPBSAP is a document that serves as a collective commitment by Indigenous Peoples about their roles and responsibilities, traditional knowledge, values, rights and interrelationships with their territories and biodiversity. It is the first of its kind in the world.

Objectives

The IPBSAP is seen as a way forward:

- It provides an overview of the status and context of biodiversity in Indigenous Peoples' lands and territories in the Philippines;
- It communicates to the Philippine government and to the public the key contributions and commitments by Indigenous Peoples to biodiversity conservation and sustainable use in the Philippines;
- It puts forward key issues and recommendations on biodiversity from the perspectives of Indigenous Peoples;
- It serves as a guiding document for Indigenous Peoples in carrying out biodiversity actions; and
- It highlights examples of key contributions and good practices by Indigenous Peoples on conservation, sustainable use and benefit-sharing.

Outline of the IPBSAP

1. Preface: Background, Rationale, Objectives & Process of Formulating the IPBSAP
2. Introduction
    a. Status of biodiversity in Indigenous Peoples' territories in the Philippines
    b. Indigenous Peoples' Worldviews on Biodiversity & Development
3. Policy, Governance and Financing Landscape on Indigenous Peoples & Biodiversity in the Philippines
4. Threats & Challenges

5. Action Plan: Indigenous Peoples' biodiversity targets, initiatives, contributions and commitments to biodiversity conservation & sustainable use in the Philippines
6. Case Stories of Indigenous Peoples' Contributions to Biodiversity
7. Guidance for Biodiversity Implementation in the Philippines

Outcomes

As a recognition of this work, the head of the Philippine Delegation to CBD COP16, made the following statement in May 2024: "*The Philippines appreciates the work and contributions of Indigenous Peoples and local communities, as well as the women and youth, recognizing that their full and active participation is essential for the implementation of the KMGBF, especially in the development of the NBSAP* (National Biodiversity Strategy and Action Plan). *The recently conducted Second National Roundtable Discussion of Indigenous Peoples and Biodiversity that Indigenous Peoples groups organized last May 5 - 7, 2024 demonstrates a strong dedication to maintaining the roles and contributions of Indigenous Peoples in the Philippines. There is a prevailing belief that Indigenous knowledge systems and customs will strengthen and enhance the NBSAP, particularly as national governments begin to support the Convention on Biological Diversity*."

There was subsequently a ceremonial handover of the IPBSAP during the National Consultation on the updating of the Philippine Biodiversity Strategy and Action Plan in line with the Kunming-Montreal Global Biodiversity Framework, on 6 August 2024.

Next steps

Next steps include localization and target setting for the actions in the IPBSAP. Indigenous Peoples were very enthusiastic to contribute to the targets and iron out commitments. Indigenous Peoples hope that the Philippine government will engage and respond to this IPBSAP to provide funding and support to continue to drive the process.

The next immediate step is the compilation of reports on the implementation of NBSAPs, which is done by the government. Indigenous Peoples in the Philippines have received an invitation to participate in the national report process.

Inspired by the IPBSAP, farmers and fishers in the Philippines will also develop their own Biodiversity Strategy and Action Plan.

Monitoring for the IPBSAP

Indigenous Peoples are also looking into models to put forward a monitoring framework. They will discuss this further at a meeting in March 2025. The IPBSAP process developed indicators for all 23 KMGBF targets, with different communities showing more interest in some targets than others, depending what was most relevant to their circumstances and contexts. They did not diverge too much from what the government had started, and instead reinterpreted this from

the Indigenous perspective, for example by bringing knowledge and aspirations for Indigenous ancestral domains to targets for protected areas.

Monitoring becomes highly important as the KMGBF has provided an opportunity to prove that Indigenous Peoples can contribute to national and global targets, and prove that they are indeed managing and conserving life on this planet.

Lessons learnt

To engage in this level of research, coordination and engagement can be a long process. The IPBSAP process took about a year, but documenting and mapping had taken place over around 30 years. This meant the communities already had a lot of data, information and maps that could be used. This was also a very long process of developing evidence to convince the government of the contributions of Indigenous Peoples, for example proving that biodiversity is preserved in Indigenous lands, often as islands of life in the landscape, and that water use in many districts relies on headwaters in Indigenous ancestral domains.

It was also useful to appeal to interests of the government, for example around carbon sequestration, and fortunately carbon stocks are easily comparable with ancestral domains as these have high forest cover. Demonstrating to the government that Indigenous ancestral domains could be useful in meeting protected area requirements for Target 3 of the KMGBF was also beneficial, as was demonstrating that many of the other targets of the KMGBF will rely on lands managed by Indigenous Peoples. Inspiring the government to be part of a pioneering process in developing and welcoming an IPBSAP was also important.

Communities may also need to be inspired and encouraged to work together, including by highlighting how the process could be useful for defending against current threats, for example those posed by mining companies and the prospect of new national parks being put in place due to the KMGBF Target 3, which has the potential to limit Indigenous ownership, use and access in these areas. The idea that communities can push for accountability and have a voice in governance was also important. Young women from the communities served an important role in bringing together groups who traditionally may have limited trust for each other.

Participants expressed admiration for the case study from the Philippines, highlighting the leadership, determination and coordination demonstrated by the communities, and the connections that they built with their government through the KMGBF, supported by years of research and advocacy. However, they noted that replicating this success in other countries may be challenging if governments are not ready to allow or welcome such a process from Indigenous Peoples and local communities.

An assessment author also shared an example from Colombia of an Indigenous information system functioning at the national level (see box below). While this system does not seem to

include community-level observations, it is nonetheless situated within the broader knowledge systems and values of Indigenous communities, in that its aim is to support nature and human well-being.

Example: the Indigenous Geographic Information System, Colombia

Pablo De La Cruz

An assessment author shared an example from Colombia, of the Indigenous Geographic Information System, or SIG-I, of the National Commission for Indigenous Territories (CNTI), developed in collaboration with the Agustín Codazzi Geographic Institute. This is a national-scale database created by a national-scale Indigenous organization. It is conceived as a tool to consult and analyse spatial data from the country's Indigenous territories. It brings together the geographical information relevant to Indigenous Peoples, and facilitates the consultation and analysis of spatial data in a simple, reliable and up-to-date way, integrating information from both Indigenous Peoples and government agencies. It contains information on formalised Indigenous reservations and formalisation applications for reservations, communities and census data, cartography, areas of special regulation, environmental protection zones and details of territorial planning, public policies and extractive projects in mining, hydrocarbons, investment and infrastructure.

The system allows the Indigenous Technical Secretariat, together with the Indigenous Territorial Rights Observatory, to establish baselines and strategic actions for the enforcement of Indigenous territorial rights.

There are also modules of SIG-I which are not of public access:

An Agreement Monitoring System (SIMA), which is not of public access because it contains sensitive information that can put Indigenous leaders at risk. SIMA is an Indigenous information tool that allows the storage and visualisation of agreements, as well as the attachment of official documents that validate and justify each agreement, for example government resolutions, land titles, historical records, environmental studies, community endorsements, and other forms of evidence. It also includes the corresponding follow-up and monitoring of compliance with the different agreements generated in the CNTI sessions and agreed with the national government.

Monitoring System for Formalization Requests (SIMOSOF), which improves management and ensures compliance with Decree 1397 of 1996 (which created the CNTI) in its function of monitoring territorial processes related to Indigenous Peoples.

The *Information System on Sociopolitical Violence against Indigenous Peoples (SIVOSPI)*, which was established by the Indigenous Territorial Rights Observatory to systematically and rigorously document and analyze incidents of sociopolitical violence against Indigenous Peoples following the signing of the Final Peace Agreement. Its purpose is to monitor these events, alert Indigenous

organizations, and highlight the lack of protective measures from state entities responsible for guaranteeing the human and territorial rights of Indigenous Peoples.

This information can be consulted at: https://www.cntindigena.org/el-observatorio/sistemas-de-informacion/.

Participants highlighted that such efforts to monitor agreements and rights at the national level could be highly relevant for similar efforts within the KMGBF, where respect for rights is a key principle. They also noted that it is rare for community mapping and Indigenous territories to be aggregated in this way at the national level. This can be useful to support, influence or verify efforts by governments to demarcate "other effective area-based conservation measures" (OECMs) to meet Target 3 of the KMGBF on protected areas.

3.7 Challenges and ways forward

Through the discussions and case studies, participants highlighted a number of key challenges and ways forward in relations to monitoring by Indigenous Peoples and local communities.

A first challenge is **the need for recognition and respect for ILK systems**, and the monitoring systems embedded within them, and for their contributions to biodiversity conservation, sustainable use of resources and human wellbeing. This includes not only observations and data collection, but also worldviews, values and spiritual aspects that may not be easily understandable for people from outside of communities, but which nonetheless underpin many CBMIS. Participants also noted that in many cases, governments do not seem ready to engage with communities' knowledge and concerns, and that enhancing respect for ILK systems is therefore key.

Participants emphasized the need to **recognize multiple types of evidence** and explore what constitutes evidence, particularly for ILK systems, which often include oral knowledge. Validation of ILK systems should occur within the knowledge system itself rather than being imposed by outside scientists. When there are diverging conclusions, ILK systems should be considered to be equally valid as other scientific systems. They also highlighted the importance of acknowledging and addressing current power imbalances (including access to resources and funding). This can include a recognition that academic science is not the only way to know and understand the world, particularly in remote locations where scientific research may be limited.

They also noted the **vast diversity of Indigenous Peoples and local communities** and that the diversity of their knowledge, values and governance systems needs to be central to considerations of how to work with Indigenous Peoples and local communities within monitoring systems.

Participants noted that much knowledge is embedded in **Indigenous and local languages**, and that in many cases it is crucial to find ways to navigate multiple linguistic systems, as many terms and concepts may not have direct translations, and there is a risk of inaccurate or distorted documentation and knowledge transmission.

Participants noted that **many of these ILK systems, and the communities who hold them, are experiencing multiple threats and pressures** including from changing environments, industrial development, reduced access to lands, territories and resources, forced relocation, migration to urban centres, and social changes brought by external education and value systems.

Supporting knowledge systems, including by protecting the lands and waters they depend upon, and finding ways to support knowledge revitalization where needed, should therefore be central considerations in efforts to work with community monitoring systems. Participants noted that this could include laws within the frameworks of national constitutions that recognize, protect, preserve and conserve ILK systems. The introduction of ILK systems into curricula in schools, colleges and universities, could also enhance the continued practice and application of ILK systems. However, participants also noted that much of ILK cannot be documented and taught within formal education curricula, so maintaining practice and experiential learning is also key. They noted that worldwide research into ILK systems should be given a priority by donors.

Participants also noted that in many cases, communities need support and protections. They highlighted that respect for **human rights and Indigenous rights** should be central to any approaches involving Indigenous Peoples and local communities. Monitoring these rights, and assessing how they are respected or violated, could also be a crucial component of monitoring systems at both local to global scales, especially given the focus on rights in the KMGBF. Participants suggested that such efforts should consider UNDRIP as the minimum standard for the dignity, wellbeing and survival of Indigenous Peoples.

Participants emphasized the importance of **finding a balance between technology and formal scientific techniques and ILK systems**, including spirituality and other aspects, noting that the balance will be different for every community. They also noted that an important factor, regardless of methods used, is that monitoring programmes should be grounded in the values, worldviews, goals and control of the community.

Participants observed that **many existing processes, indicators and frameworks, especially at national and global levels, do not align with holistic ILK systems or many CBMIS**. They highlighted a significant gap between the goals and methods used for monitoring at the community level compared to those at national and international levels. Systems and frameworks may therefore need to be developed so that they can accommodate diverse types of information beyond only quantitative data, while also delivering the actions and benefits that communities require. Participants also noted an incompatibility with short term projects and

goals and the longer timescales within which ILK systems function, for example the imposition of targets for 2030 in the KMGBF.

Participants emphasized that a key factor in the success of monitoring programmes is **community control of the projects, methods and data**. In situations where external actors impose goals and methods, or remove knowledge and data with no benefits to communities, monitoring programmes will be unlikely to succeed, and may even harm and damage ILK systems and the communities themselves. Therefore, it is essential that communities develop their own monitoring systems according to their needs. External support can be valuable in the form of capacity-building, technical support or funding, but it should be provided only as requested by communities.

Data sovereignty is also key, and many communities wish to control how their knowledge is accessed and shared, as well as the narratives around it and how it is credited and acknowledged.

FPIC is also a key principle, and a right for Indigenous Peoples under UNDRIP, and is especially significant where communities are being encouraged to engage in monitoring programmes, or are considering sharing their knowledge with others.

Overall, participants highlighted that **power imbalances and governance** are critical issues for many communities. They expressed concern that monitoring programmes could diminish or remove a community's power, by increasing external control over their lands, as decisions based on the data and information they produce are made elsewhere. Instead, communities may prefer monitoring programmes that support their own lands, knowledge systems and governance, rather than simply providing information for external systems.

Participants highlighted that many external monitoring programmes do not **bring clear benefits to communities**. It is therefore essential to discuss and agree on the benefits with communities from the beginning. Reciprocity should be a fundamental principle in monitoring systems that engage Indigenous Peoples and local communities. Benefits for communities could be financial, or take other forms, such as capacity-building or solutions to specific challenges they face. Participants emphasized that, in many cases, the primary beneficiary should be nature, and that should be clearly demonstrated to the communities involved.

Participants also noted that many communities may need **capacity-building** to become strong partners or leaders in monitoring programmes. While communities may have in-depth knowledge of their environment, they may need capacity-building in terms of understanding how to use technologies, and their rights around FPIC and data sovereignty. Additionally, peer-to-peer learning between communities who are developing monitoring systems can be crucial for sharing experiences and best practices. Support on financing, internet connectivity and other aspects may also be needed. Participants noted that a key difference between ILK systems and other

sciences is that ILK systems have not received the same levels of funding and other support and there have been no opportunities to create academic institutions.

Participants highlighted that in many cases, **funding and financing are key issues**. There can be assumptions that communities can autonomously create monitoring systems within their knowledge systems. However, some communities are spread over vast areas, requiring travel. They may need technology or other infrastructure that is not currently in place. They may also need to nominate designated programme leaders who will do the work needed, including coordination and data processing. This requires funding.

Capacity-building, including training, may also be needed for others working with Indigenous Peoples and local communities and their knowledge, including governments and researchers. This may include how to respectfully work with communities and their knowledge and governance systems, and how to ensure and support data sovereignty, FPIC and benefit sharing.

Participants highlighted that it is important to form **collaborations and partnerships with communities**. Aiming to foster good partnerships and mutual support would be important in many cases. They noted that there is often a **lack of trust between communities and national or local governments**. Building this trust takes time, often with researchers or others being present in communities to learn about their knowledge, cultures and aspirations. Building trust also requires ongoing communication, transparency and clear protections and benefits, as discussed above. Understanding these elements is essential for fostering effective collaboration.

Participants emphasized that **leadership within communities needs to be recognized and supported**, including for people who can work through multiple levels as knowledge is scaled up from local to national to global, and who can work on translation to make ILK systems understandable for governments and others, without losing key concepts and underpinning values. Participants also emphasized the important role of women as leaders, convenors and innovators. They also highlighted the crucial role of youth in shaping the futures of communities, stressing the need to engage them from the beginning in all projects, as well as the crucial need to support the intergenerational transmission of knowledge from elders to youth, and youth to elders, and to decision-makers.

4 Next steps

The following next steps will take place after the workshop:

- A report was developed from the dialogue workshop (this report), which was sent to all participants for them to edit, make additions and approve prior to finalization and publication online;
- Using the report as a resource, the authors will continue to develop the draft chapters of the assessment;
- Author teams may reach out to participants from Indigenous Peoples and local communities and other members of Indigenous Peoples and local communities, to invite them to be contributing authors; and
- Another dialogue will be organized in mid-2025 during the external review period for the drafts of the chapters and summary for policymakers.

Annexes

Annex 1: Agenda

Saturday 30 November	
9.00am-9.30am	Opening, introductions
9.30am-9.45am	Introduction to IPBES and its work with Indigenous and local knowledge Aims, methods and agenda of the dialogue
9.45am-10.15am	Introduction to the Global Biodiversity Framework
10.15am-10.45am	Introduction to the monitoring assessment: context, aims, methods, timelines, chapters, final product, ILK in the assessment, progress so far
10.45am-11.00am	Refreshment break
11.00am-12.30pm	Discussion: • How can the assessment be useful for Indigenous Peoples and members of local communities? • What are the aspirations and concerns of Indigenous Peoples and members of local communities in relation to monitoring through local, national and global scales?
12.30pm-2.00pm	*Lunch*
2.00pm-3.00pm	Discussion: • How do Indigenous Peoples and members of local communities conceptualize and engage in monitoring in their own communities and knowledge systems? What do they think it is important to monitor? What is the relationship between monitoring and community decision-making and governance? • How does this differ from scientific methods and priorities?
3.30pm-3.45pm	Refreshment break
3.45pm-5.55pm	Examples of community-based monitoring • Mt. Elgon, Chepkitale - Phoebe Ndiema • Manitoba Métis Federation - Colin Gisiger Discussion: • Are there examples of regional or national monitoring programmes that Indigenous Peoples and members of local communities have participated in or led? What are their needs and goals? • How have Indigenous Peoples and members of local communities participated in these broader monitoring systems or scientific studies? What are the challenges and risks, benefits and opportunities?
5.55pm-6.00pm	Closing of day

Sunday 1 December	
9.00am-9.15am	Updates, review of day 1, plan for day 2
9.15am-10.30am	Presentation on the KMGBF – Maurizio Farhan Ferrari Examples of community-based monitoring • Marine Monitoring in Nunavut – Daniel Taukie • The Indigenous Peoples Biodiversity Strategy and Action Plan, Philippines - Dave De Vera • The Indigenous Geographic Information System, Colombia – Pablo De La Cruz Discussion: • What are the monitoring needs for the new Global Biodiversity Framework? • How have Indigenous Peoples and members of local communities engaged in this so far? What are their aims and needs?
10.30am-11.00am	Refreshment break
11.00am-12.30pm	Discussion: • What are the most important pressures and factors undermining or enhancing monitoring by Indigenous Peoples and members of local communities? • How can Indigenous Peoples and members of local communities and their monitoring systems be better supported? • What are the capacity needs for Indigenous Peoples and members of local communities, scientists, governments and others?
12.30pm-2.00pm	Lunch
2.00pm-2.45pm	Caucus of Indigenous Peoples and local communities
2.45pm-3.30pm	Report back from caucus of Indigenous Peoples and local communities
3.30pm-3.45pm	Refreshment break
3.45pm-4.30pm	Overview discussion: • What should be the main aims of the assessment? • How can it be useful for Indigenous Peoples and local communities? • What the key networks, examples, case studies and resources?
4.30pm-4.45pm	Next steps and participation in the assessment: Timelines for collaboration, communication and dialogue throughout the assessment process
4.45pm-5.00pm	Closing

Annex 2: FPIC document

First Indigenous and local knowledge dialogue on the IPBES monitoring assessment

30 November – 1 December 2024
Montreal, Canada

Free, Prior and Informed Consent

The individuals whose names are listed at the end of this document agreed during the dialogue workshop to follow the principles and steps laid out in this document.

Background

Within the framework of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), principles of Free, Prior and Informed Consent (FPIC) apply to research or knowledge-related interactions between Indigenous Peoples and outsiders (including researchers, scientists, journalists). Given that the dialogue process includes discussion of Indigenous and local knowledge of biodiversity and ecosystems, there may be information which the knowledge holders or their organizations or respective communities consider sensitive, private, or holding value for themselves which they do not want to share in the public domain through publications or other media without formal consent.

Principles

The dialogue will be built on equal sharing and joint learning across knowledge systems and cultures. The aim is to create an environment where people feel comfortable and able to speak on equal terms, which is an important precondition for true dialogue.

To achieve these aims, the following goals are emphasized:

- Equality of all participants and absence of coercive influence
- Listening with empathy and seeking to understand each other's viewpoints
- Accurate and empathetic communication
- Bringing assumptions into the open

If participants feel that the above goals are not being achieved at any point during IPBES activities, participants are asked to bring this to the attention of the organizers of the activity, or the IPBES technical support unit on ILK, at: ilk.tsu.ipbes@unesco.org.

Sharing knowledge and respecting FPIC

To ensure that knowledge is shared in appropriate ways during dialogue workshops and other IPBES activities, and that information and materials produced after these activities are used in ways that respect FPIC, the following was put forward:

1. **Guardianship – participants who represent organizations and communities**

- Principles of guardianship will be discussed with IPLC participants at the beginning of IPBES activities.
- Participants who represent organizations or communities will act as the guardians of the use of the knowledge and materials from their respective organizations or communities that is shared before, during or after the workshop. Any use of their organizations' or communities' knowledge will be discussed and approved by the guardians, as legitimate representatives of their organizations or communities. Guardians are expected to contact their respective organizations and communities when they need advice. Guardians are also expected to seek consent from their organizations or communities when they consider that this is required, keeping in mind that sharing details of their community's knowledge can potentially have negative consequences, for example sharing the locations and uses of medicinal plants.

2. **FPIC rights during dialogue workshops and other activities**

- The FPIC rights of the Indigenous Peoples participating in dialogue workshops or other activities will be discussed prior to the beginning of the activity, until participants feel comfortable and well informed about their rights and the process, including the eventual planned use and distribution of information. This discussion may be revisited during the activity, and will be revisited at the end of dialogue workshops once participants have engaged in the dialogue process.
- Participants do not have to answer any questions that they do not want to answer, and do not need to participate in any part of an activity in which they do not wish to participate.
- At any point, any participant can decide that they do not want particular information to be documented or shared outside of the activity. Participants will inform organizers and other participants of this. Organizers and participants will ensure that the information is not recorded. Participants can also request that the information is only recorded as a general statement attributed to a region or country, rather than to a specific community.
- Permission for photographs must be agreed prior to photos being taken and participants have the right not to be photographed. Organizers will take note of this.

3. **After the activity**

- Permission will be obtained before any photograph of a participant is used or distributed in any form.
- Permission will be obtained before any list of participants is used or distributed in any form.

- Participants maintain intellectual property rights over all information collected from them about themselves or their communities, including photographs. Their intellectual property rights should be protected, pursuant to applicable laws.
- Copies of all information collected will be provided to the participants for approval.
- The information collected during the activity will not be used by IPBES for any purposes other than those for which consent has been granted, unless permission is sought and given by participants. Participants note that IPBES does not have control over how others may use its publicly available materials that may contain ILK.
- Participants can decline to consent or withdraw their knowledge or information from the process at any time, and records of that information will be deleted if requested by the participant. Participants should however be aware that once an assessment is published it cannot be changed, and information incorporated into the assessment cannot therefore be withdrawn from the assessment after this point.
- Participants have the opportunity of reviewing and commenting upon the final product during the draft review period, and a dialogue workshop will be organized to support this, bearing in mind that responsibility for the final product rests exclusively with the authors.

Annex 3: Participants of the dialogue workshop

Indigenous Peoples and local communities		
Myrle Ballard	Canada	University of Calgary
Melanie Bateman	Canada	Climate Policy Analyst, Congress of Aboriginal Peoples (CAP)
Phoenix Combe	Canada	National Government of the Red River Métis
Q"apaj Conde	Bolivia	Secretariat of the Convention on Biological Diversity
Dave De Vera	Philippines	Executive Director of Philippine Association for Intercultural Development
Colin Gisiger	Canada	Lands Technician, National Government of the Red River Métis
Mariaelena Huambachano	Peru	Syracuse University
Hugo Jabini	Suriname	Association of Saamaka Traditional Authorities (VSG)
Yolanda López-Maldonado	Mexico	Human ecologist and geographer specialized in freshwater resources
Phoebe Ndiema	Kenya	Chepkitale Indigenous People Development Project
Kathy Martha Padluq	Canada	Director of Marine Department for Nunavut Tunngavik Incorporated
Nicholas Rahiri Roskruge	New Zealand	Tahuri Whenua Māori horticultural collective
Andika Saputra	Indonesia	Jaringan Pemantau Independen Kehutanan (Independent Forest Monitoring Network)
Daniel Taukie	Canada	Inuit Marine Monitoring Program Coordinator at Nunavut Tunngavik Incorporated

IPBES monitoring assessment		
Álvaro D'Antona	Brazil	Co-chair
Andrew Gonzalez	Canada	Co-chair
Patricia Miloslavich	Australia	Co-chair
Claudia Mónica Campos	Argentina	Chapter 1
Gabriela Lichtenstein	Argentina	Chapter 1
Aysegul Sirakaya	Turkey	Chapter 2
Alice Hughes	United Kingdom	Chapter 3
Maurizio Farhan Ferrari	Italy	Chapter 3
Pablo de la Cruz	Colombia	Chapter 3
Yann Voisin	France	Chapter 3
Cem İskender Aydin	Turkey	Chapter 4
Julia Touza	Spain	Chapter 4
Ivan Ricardo Castro Diaz	Colombia	Chapter 4
Tanara Renard-Truong	France	Technical support unit
Cristina Sciortino	Canada	Technical support unit

IPBES task force on Indigenous and local knowledge		
Myrle Ballard	Canada	Environment and Climate Change Canada
Q”apaj Conde	Bolivia	Secretariat of the Convention on Biological Diversity
Mariaelena Huambachano	Peru	Syracuse University
Nicholas Rahiri Roskruge	New Zealand	Tahuri Whenua Māori horticultural collective
Peter Bates	United Kingdom	Technical support unit