

Report

Indigenous and local knowledge dialogue workshop for the first order draft of the IPBES assessment of the sustainable use of wild species

8-9 October 2019, Montreal, Canada



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Disclaimer:

The text in sections 2, 3, 4 and 5 represent 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.

Contents

Contents	2
1. Introduction	3
1.1. Background	3
1.2. The dialogue workshop for the first order draft of the sustainable use assessment.....	3
1.3. Objectives of the dialogue workshop	4
1.4. Acknowledgements.....	4
2. Key recommendations and learning from the dialogue	5
2.1. Key recommendations	5
3. Conceptualizing the sustainable use of wild species	8
3.1. Overarching point	8
3.2. Conceptualizations of “wild species”	8
3.3. Definitions of “sustainable use”.....	9
3.4. Characteristics of “good relationships” with nature	10
4. Status and trends, drivers and future scenarios of the sustainable use of wild species	17
4.1. Overarching points.....	17
4.2. Knowledge and observation	18
4.3. IPLC culture and practices in the face of change	19
4.4. Food systems and wild species	21
4.5. Education	23
4.6. Economy.....	25
4.7. Tourism	26
4.8. Human-wildlife relationships.....	27
5. Policy options and responses	28
5.1. Overarching Points.....	28
5.2. International policy.....	28
5.3. National policy making.....	29
5.4. Supporting customary institutions and management	31
5.5. Human rights, land rights and access rights	32
5.6. Gender and inclusivity	34
5.7. NGOs, scientists and technology	36
Annex 1: Recommended resources	37
Annex 2: Agenda	41
Annex 3: Participants list	42



1. Introduction

1.1. Background

The participation of Indigenous peoples and local communities (IPLCs) is essential to the process of developing the IPBES Sustainable Use Assessment, as IPLCs possess significant knowledge on the wild species that surround them. This includes knowledge about their habitat, seasonal availability, species behaviour and other matters, and they often use wild species for subsistence and other purposes. The identities, cultures, and livelihoods of Indigenous and local people are often deeply intertwined with the use of wild species.

1.2. The dialogue workshop for the first order draft of the sustainable use assessment

An Indigenous and local knowledge dialogue workshop was organized in Montreal, Canada on 8-9 October 2019, with the aim of facilitating the input of IPLCs into the review process for the first order drafts of the sustainable use assessment. The workshop brought together Indigenous peoples and local communities (IPLC) and authors of the assessment to discuss the draft and to make comments and recommendations. A participants list can be found at the end of this report.

This was the second in a series of dialogue workshops held for the sustainable use assessment. These dialogues are part of a range of activities aimed at IPLCs participation during the assessment process.

1.3. Objectives of the dialogue workshop

Objectives of the dialogue workshop included:

- Engaging IPLCs in critically reviewing the content of the first order draft of the sustainable use assessment, assessing strengths, gaps, and providing recommendations for additional sources of information and expertise;
- Exploring how the sustainable use assessment could be useful to IPLCs;
- Developing recommendations from IPLCs for specific topics and areas of foci for the assessment;
- Refining a series of key Indigenous and local knowledge (ILK) questions, which will help shape a narrative for the assessment and direct the collection, analysis and synthesis of information;
- Developing 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 can be used to answer the key questions of the sustainable use assessment.

1.4. Acknowledgements

We are very grateful to the participants of the meeting, who travelled to Montreal, Canada to share their knowledge and expertise with us.

The workshop was generously hosted by the Biosphere Museum in Montreal, and we are very grateful to them for their hospitality and enthusiastic support throughout the workshop.

The dialogue workshop was held on traditional lands that have long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge their important role as stewards of the land and waters. We are grateful that a representative from Kahnawà:ke opened and closed the dialogue workshop, as well as sharing her knowledge with us during the two days.

2. Key recommendations and learning from the dialogue¹

2.1. Key recommendations

Participants made the following key recommendations for the assessment:

- Wild species uses are central to identities, cultures, and livelihoods of Indigenous peoples and local communities around the world. In many cases, these uses and the practices associated with them are essential to the health and wellbeing of humans *and* wild species.
- From an IPLC perspective, humans are an integral part of nature. Relationships between IPLCs and other non-human beings often closely resemble family relationships and are, or should be, characterized by reciprocity.
- Because reciprocity is fundamental to sustainable relationships between humans and non-human beings, participants agreed it is crucial that the assessment considers “people’s contributions to nature” along with “nature’s contributions to people”.
- Many IPLCs have traditional norms and practices to ensure appropriate, or sustainable, relationships with wild species. These norms and practices are based in ILK and frequently are central to spiritual practices. Often, they include significant sanctions or punishments when violated.
- Recognition (or non-recognition) of IPLCs’ rights to lands and waters, resources, and traditional practices greatly influences the sustainability of wild species uses, and this should be highlighted throughout the assessment.
- Waters and aquatic animals and plants are highly important for many IPLCs and should be a focus of the assessment, as well as land. “Waters” includes liquid and frozen oceans, coastal waters, brackish / anchialine pool & ponds, and freshwater (moving and still).
- ILK is underrepresented in the literature. This underrepresentation results from several factors. ILK has often been undervalued and the literature on it dismissed as lacking legitimacy. In other instances, it has been appropriated into western knowledge systems without recognition of its source. Also see: <http://iportal.usask.ca/purl/IKC-2001-Simpson.pdf>. Another limitation is the cases of literature in Indigenous or national languages that are rarely translated into English. Finally, much ILK is oral and, thus, remains outside the literature (both scientific and grey).
- Strategies are available to address the underrepresentation of ILK in the literature. During the ILK dialogue workshop, IPLC members provided potential new sources of information in the scientific literature, grey literature (including in Indigenous languages), websites, and other sources that unveil the relationships IPLCs have with other species and the natural environment. It was also

¹ The text in section 2 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.

noted that in an increasing number of contexts (e.g. Hawai'i), there is a new commitment to seek out, translate, and integrate primary texts in Indigenous languages into contemporary, multi-disciplinary research. These sources of information should be further explored and incorporated into the assessment. A plan should also be made for working with non-English literature, with a minimum goal of working with the 6 UN languages.

- Documented cases of bridging ILK and science-based knowledge are limited. This limitation can be observed both in scholarship and practice (i.e., evidence-base for policy advice, policy and the decision-making process, environmental development, etc.). During the workshop a number of examples of such bridges were given, as discussed below, and these should be considered and brought into the assessment.
- Participants noted that “two-eyed seeing”, a collaborative approach to weaving together the best of Indigenous knowledge and mainstream science, should be a guiding principle for the assessment. For more on this approach, authors could consult the work of Mi'kmaw Elder Albert Marshall with Debbie Martin, Cheryl Bartlett, and others (see, for example, <http://cjr.archive.mcgill.ca/article/viewFile/2348/2342>, Bartlett et al. 2015).
- Participants highlighted that the final assessment should be useful for IPLC, for example in supporting co-management.
- The IPBES values assessment is also working with visions of IPLC, and there should be good communication between the two assessments, as well as with other IPBES assessments relevant to Indigenous peoples and the visions and culture-nature values of IPLC.
- Participants noted the need to implement the recommendations and utilise the sources and examples given in the report from the first ILK dialogue workshop for the sustainable use assessment.



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This graphic shows some of the key messages and issues emerging from the dialogue workshop for the sustainable use assessment. The labels on the turtle's legs represent aspects of culture and practice that participants identified as central to sustainable use of wild species by IPLC. The swirls in the water around the turtle represent the external forces or conditions identified as supporting or impeding sustainable use of wild species by IPLC. The imagery of the turtle comes from the Haudenosaunee (Iroquois) creation story (<https://www.oneidaindiannation.com/the-haudenosaunee-creation-story/>). The dialogue workshop was held in their territory, and many northeastern North American tribes refer to their home as Turtle Island. The turtle species in the graphic is the painted turtle (*Chrysemas picta*), which is native and broadly distributed in North America, including the territory in which the meeting was held.

3. Conceptualizing the sustainable use of wild species²

The main questions posed to the participants were the following:

- Would you define or conceptualize a “wild species” in your language and culture? If so, how?
- Would you define or conceptualize “sustainable use” in your language and culture? If so, how?
- Can you give examples of what it means to live well with nature?

3.1. Overarching point

Participants made the following overarching point:

- There are remarkable commonalities, as well as divergences, in indigenous peoples and local communities’ world views and perceptions of wild species and their sustainable uses. These should frame discussions on IPLCs within chapters 1 and 2 and indeed the assessment as a whole.

3.2. Conceptualizations of “wild species”

Key points expressed by participants

- Some participants highlighted that “wild” and conversely “domesticated” imply separation between humans and the natural world, which is not how many IPLCs perceive their relationship with nature. This can also lead to problems when considering how to conserve these animals, as it can imply all human interaction is negative.
- Other IPLCs do have some kind of conceptualization that separates wild species from other “domesticated” species. These IPLC definitions or conceptualizations of “wild” can vary, and often are framed in terms of species that are “not in need of human help”, or are “not owned by humans”.
- In some cases, the boundary between wild and domesticated species can be fuzzy. For example, feral domesticates are considered to be wild, and some wild species are recognized as the crop or animal wild relatives of domesticated species, for example with camelids in South America where domestic and wild relatives may share habitat, and even interbreed.
- Understandings of wild species as relatives of humans, with whom humans should have a relationship of respect and reciprocity, is common across cultures, continents and oceans.

Examples

- Africa: Traditionally, Maasai did not eat wild animals and the word “wild” is thus missing in the language. Animals have always served as the primary source of food, and diets have been entirely milk- and meat-based, but wild species were not eaten as they were believed to come directly from God. Men were given permission to kill lions only exceptionally. In some African communities, young boys are also allowed to hunt for small birds before undergoing circumcision.

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They are told by other community members where to hunt. Feathers obtained from birds are used for headgear. Words to describe wild plants are also limited in some African communities. Such plants are usually picked when fetching firewood or looking after livestock.

- Asia: The Karen people use the word “Bga” or “Bgav” for wild and “Auf-Bgav” or “Aw-Bga” for elders – this literally translates as “wild performance”.
- Eastern Europe: In Russia and other eastern European countries, wild species can be thought of or described as “forest gifts” or “products of the forest”, and similar terms may apply in other environments.
- Latin America: The Mixtec in Mexico use the word “cacomani” for wild animals. Some indigenous communities in Oaxaca conceptualize “wild” as “it grows by itself, without external help”.
- North America: Some First Nations communities of Canada have a conception of the term “wild” that is synonymous with “untamed”.
- North America: For the Mohawk community of Kahnawà:ke the word for “wild” literally translates as “their word is good”. This caused a discussion in the community during the workshop, and interpretations are that “wild” species are following the original instructions given by creation, or that they are in charge of what they do. Meanwhile, the word for “natural” literally translates as “going in the same direction”, because these creatures are going in the same direction as creation.
- Oceania: The Hawaiian word for humans is “kānaka” while the word for supernatural beings, including gods, is “ākua”. The geography of the earth is most basically divided into two regions or realms called “wao”, the realm of men, “wao kānaka” and the realm of the gods, “wao ākua”. Wao ākua is one of a few words which refer to wilderness. Other words for wilderness include: wao nahele, ka nahele, makanahale, and ulunahale. The words that include “hele” in them, imply a freedom of movement or growth, a freedom from constraint, and a freedom from kānaka. The wao akua allows for this freedom. All living beings, of the land, sea, or air; of the wao ākua and the wao kānaka alike, are part of the genealogical progression presented in the creation chant, Kumulipo. The chant presents a progression out of darkness and slime into light and day, through which the creatures that grow, swim, crawl, fly, and walk, come into being.

3.3. Definitions of “sustainable use”

Key points expressed by participants

- Sustainability should not only be understood in economic terms. The assessment should thus be very clear that sustainability of natural resources and people, communities and reciprocal relationships between humans and the natural world are all important.
- For Indigenous peoples and local communities, a key measure of the sustainability of a wild species use is whether it contributes to the long-term health and wellbeing of both humans and other-than-humans / nature.

Examples

- Africa: There may not be words for “sustainability”, but it can be defined as the opposite of some concepts. For example, among the Ndau people from eastern Zimbabwe, there is a word that translates as “pillaging” - “kuzhuwa”. In this case, sustainability can be conceptualized as the opposite of this.
- Eastern Europe: In Russia, in the Selkup language, the word for "to steal" does not exist, as well as the words for "take more than necessary". This is due to the peoples’ attitudes towards sustainability and their relationship with nature and wildlife.
- Latin America: In Andean communities, there is often not a word for sustainability, but there is a concept “Hawka Kay”, which means that you are in peace, balance and harmony with nature and other “uywas” (uywas are domestic plants and animals that you can breed and grow with you, building intimate relationships. This can include other humans: family, wife, children, parents, neighbors, as you nurture them and build relations every day). Basic principles for sustainability are sharing with others in your Ayllu (social group), reciprocity-based relations, and taking from nature only what you need.
- North America: Mi'kmaq language is more verb oriented than noun oriented. The word “netukulimk” means providing for your family and community well-being, without jeopardizing the natural environment. It would therefore be closely related to “sustainability”.
- Oceania: While there is no word for sustainability, per se, in the Hawaiian language the concept is contained in the words: “mālama”, which is to care for, preserve, protect, or tend, among other things; hānai, which is to feed; kako’o, which is to uphold, support or prop up, suggesting a structural action; and aloha, which is among other things, love, affection, compassion, mercy, sympathy, pity, kindness, sentiment, grace, charity, as well as a fond salutation or greeting. There is a reciprocal implication and intention with all these action verbs. In line with this, relationships between humans and everything that surrounds them should be reciprocal, repeatable and sustainable. Such reciprocal relationships allow order, rhythm, balance, and aloha to be maintained.

3.4. Characteristics of “good relationships” with nature

Key points expressed by participants

- There are striking commonalities among many IPLCs in provisions to ensure and govern good relationships between humans and wild species.
- The relationship between people and wild animals and plants is understood as akin to a family relationship. All actions should assure the long-term wellbeing of that family and community.
- Respect is one of the main guiding principles of appropriate wild species uses. For example, hunters should make sure that animals do not suffer when they are killed. In this conception, hunting for sport or fun is unacceptable. Destroying mushrooms or plants just for ‘fun’ is also not acceptable.

- Reciprocity is also key to good relationships with nature. When people take a wild plant or animal, they should acknowledge it as a gift and perhaps offer something in return. This may be a bit of a special plant, song, and/or a prayer.
- One should not take from nature more than is needed. In some cases, this principle explicitly refers to taking only what is needed for immediate use and prohibits taking enough for consumption at a later time.
- There should be no waste. No wild animal, mushroom, or plant or part thereof should be wasted. Everything that is taken should be used.
- Sharing is essential. Wild animals, mushrooms, and plants should be available for the common well-being of humans and non-humans. Human harvesters must leave enough for other individuals and communities, including animals.
- People should take care of wild animals, mushroom, and plants. Such stewardship is often guided by traditional calendars. These calendars can indicate when it is time to hunt, harvest or let species rest, and where these activities can take place. They can be based on religious rules, moon cycles, or patterns and indicators in the environment.
- Spiritual practices are central to good relationships with wild animals, mushrooms, plants, and landscapes. Ceremonies, including songs and dances, help assure that people act correctly and maintain good relations with nature. They are therefore important in relationships between indigenous peoples and wild species. They are done for example before cutting trees, picking medicines, hunting, fishing or consuming animals.
- For IPLCs, sustainable use and relationships between people and nature are often mediated by customary rules and norms, which have some broad similarities across many communities.
- Taboos and rest periods frequently are important aspects of customary rules and norms. These may include places and times in which hunting, fishing, and gathering should not occur, as well as complete prohibitions. They may apply to individual species and places or groups of species and ecosystem types. Some prohibitions (or allowances) are particular to people on the basis of social identity such as family, age, and/or gender.
- There can be sanctions or punishments for violating customary rules and norms designed to assure good relationships with nature. These sanctions may be enforced by the human community or be considered to come from the spiritual realm in the form of bad fortune for the individual and/or their family.

Examples of relationships between humans, animals and plants

- Africa: African pastoralists can live in harmony with nature. The Masai Mara National Reserve is a good example of people living peacefully with livestock, zebras and other wild animals. The relationship between people and wildlife is based on communication, e.g. people entering lion territories make a certain sound to warn the lions and make sure that they stay away.

- Africa: Among the Shona people from eastern Zimbabwe, there is a strong belief informed by a long-observed behaviour of child and mother, “a baby never suckles from its mother if the mother is weeping.” People cannot be nourished if Mother Nature is weeping from savage abuse. Therefore, sound, responsible management of the forest and its products is required for nature to provide abundantly for its residents.
- Asia: In Thailand, after a period of intensive logging in 1980-1989, an indigenous community was entrusted to take care of a forest located nearby. The community managed to help the forest recover and many species of animals and plants came back. The forest became healthier and richer because the community combined use of resources with conservation. Using forest resources in a balanced way allowed for their revival.
- Asia: For the Karen, human beings are like a forest and the older you get, the more like an old forest you become. Elders are wise and have a lot of knowledge, while an old forest has species variety and richness.
- Eastern Europe: Indigenous communities in Siberia, Russia, perceive their relationship with the forest in terms of health. The forest is understood as the health of the village, its members, as well as the health of the forest itself. The forest covering Siberia is black taiga, abundant in cedar nuts, berries, and mushrooms. These are also the migration routes for moose. Because people stay in the village only briefly, and it is the forest where they spend most of their time, you can often hear them saying “I come back to the forest”, rather than that they “return home (to the village)”. Reindeer are fundamental for many Siberian communities because they are used as food, building material (for houses, tents, clothes) and many others uses. In such communities, the reindeer is a symbol of a good life, prosperity and well-being, and the basis of the existence of the people, culture and their interaction with nature.
- Eastern Europe: In Russia, Siberia, indigenous hunters of the Selkup peoples consider it unacceptable to kill the largest animals in the herd or pack when hunting. It is also not possible (taboo) to kill the pack leader, very young animals and pregnant animals, as well as the guards of the packs - the largest and fastest animals. This applies to deer, moose, wolves, and other large animals.
- North America: Many indigenous communities in Canada believe that good relationships are based on mutual empowerment and alliances between people and non-humans. There are sacred processes that guide relationships, whether human or non-human ones. For example, beavers are considered sacred and their bones should thus go back in water after consumption, rather than being given to dogs.
- North America: Family relationships are a particularly important theme for the Mohawk people. They believe that family relations concern each part of creation, including plants and animals. Greetings and thanks are also important for the Mohawk people, who follow the rule that you never take the first plant you see, because there may be other brothers and sisters (humans and animals) in the forest who may need it. You should rather introduce yourself to the plant, request permission to harvest, and explain who it is picked for. When it comes to animals, one should put

down tobacco, sit down with the animal, ensure that it does not suffer when it is killed, and acknowledge that it sacrifices its life to sustain your family.

- North America: In Inuit lands and culture people use the land and waters to offset high costs of living in the north. They are thus very dependent on surrounding resources and use intergenerational knowledge sharing to use them sustainably. People take only what they need, while saving the rest for the future or youth. There is a lot of teaching by elders, e.g. concerning how to hunt, where to hunt, and how to sustain oneself in a harsh environment.
- Oceania: Indigenous people of Hawai'i believe that the relationship between humans and nature is in accord with the following proverb: "The land is the chief, and the man serves" ("He ali'i ka'āina, he kauwā ke kanaka"). Furthermore, the motto of Hawai'i is: "The life of the land is perpetuated in righteousness" ("Ua mau ke ea o ka 'āina i ka pono"). In other words, "the life of the land" is perpetuated when people behave in righteousness (pono).
- Global: The concept of Biosphere Reserves as places for nature and people could be a good example of sustainable practices of nature resource use and harmony of living IPLCs and nature.

Examples of sharing

- Africa: African pastoralists contribute to biodiversity conservation while cooperating with other communities, for example hunter-gatherers. The relationship is often based on reciprocity between communities. Honey collected by hunter-gatherers is exchanged for milk of pastoralists and vice versa (e.g. in case of Ogiek and Masai). The Ogiek people, as hunter-gatherers, live in forests abundant in fruits that they are also willing to share with others. They also carry a vast knowledge of medicinal plants. Traditional medicine practitioners specialize in different parts of plants, e.g. flowers, roots, or bark.
- Eastern Europe: Mushroom harvesting is also an activity regulated by customary rules and norms. Often you are not allowed to harvest all the mushrooms that you find, as some need to be left for animals or other people. In addition, mushrooms that are harvested but not used cannot be destroyed.
- Oceania: In Hawai'i, traditional sub-divisions of land, called ahupua'a, extend from the near-shore ocean waters to the interior of the islands, often to the mountain peaks or the interior plateaus of the islands. Thus, from the wao ākua (the realm or region of the gods) and through the wao kānaka (the realm or region of humans), in keeping with respectful access protocols, which assure order among the elements and inhabitants, kānaka have access to forest, cultivated, and marine resources. It is a continuing traditional and customary practice for people who garden and hunt and fish to make exchanges with one another, so that they are hānai (fed) both from the domesticated and unconstrained regions.

Examples of ceremonies and spiritual relationships

- Africa: In some pastoralist communities in Africa, cutting wood, e.g. for building houses, needs to be preceded by a special ceremony, which limits excessive cutting. The same applies with fruit and herb harvesting.

- Africa: Traditional spiritual leaders act as intercessors and perform rituals for rapprochement with the spirits of the land if there is abuse of natural resources by some community members.
- Africa: ceremonial dances convey the message about spirits in water bodies and the need to take care of the natural environment.
- Africa: In Zimbabwe, most tribes derive their totems from wild animals and each tribe is not allowed to eat the animal after which it takes its totem. To eat such an animal is taboo and regarded as “eating oneself”. These and other rules are imposed by elders.
- Asia: In Thailand, the human-forest relationship is very spiritual. An example is the tradition of taking an umbilical cord to the forest and tying it to a tree after a child is born. This person is then responsible for a particular tree for their whole life. The tree is also the person’s burial place and preserves his/her soul after passing away. However, in modern times, people who ask the hospital to give them their child’s umbilical cord to be brought to the forest may be refused, as there is not a good understanding for their spiritual relationship with the forest.
- Asia: In Thailand, spiritual connection with nature also revolves around the agricultural system and other related practices. Rituals are carried out to seek permission for starting fire, to get a better harvest and other activities.
- Asia: In Nepal, the relationship between IPLCs and elements of nature are reflected in language. For example, some mountains are considered to be goddesses. The local name for Mount Everest translates to “goddess of the community”. However, most indigenous place names have been replaced by names in other languages, and lost their original meanings.
- Asia: Some restrictions may apply to women, e.g. they are not allowed to harvest mushrooms or herbs when they are pregnant. According to the Karen, the family of a pregnant woman is also not allowed to hunt. If someone hunts a monkey, the baby will be born with a monkey face.
- Asia: The Karen people believe that every individual consists of 37 souls. Five of them are in the body (head, heart, right hand, left hand, legs) and 32 can be found in nature (in plants and animals). When people are born, die, or get married, hunting and gathering are prohibited.
- Asia: According to the Karen, gibbons used to be humans. There is a belief that at that time people had everything except for salt, and when their parents left to look for salt, the children were so hungry that they started climbing trees to get fruit. The parents came back to find that their children had turned into gibbons. This is why the Karen prohibit killing gibbons. Another species that is not hunted by the Karen is hornbills because they are believed to be the king of animals.
- Asia: The Karen have poems and songs devoted to wild species. Some of the topics include: the age of animals; evergreen forest and cutting down rattan shoots; and smells of fish and wildlife in the water and on the land.
- Asia: The Karen have many rules related to the use of trees. For example, you are not allowed to use vines for building houses or cut down trees that have shadows in the water or the ones that make strange sounds.

- Eastern Europe: The Hutsuls in Ukraine plant willow trees when a child is born and there is an annual harvest with each child harvesting from their own willow tree. Young men also have to clean springs or small rivers before going to the military, so that they will not be killed.
- Eastern Europe: In Ukraine, Russia, Belorussia and Moldova, forest products are considered forest gifts. There are many beliefs connected to collecting berries, mushrooms and herbs. Medicinal herbs can be collected only on specific times of the year so that they have enough time to regenerate.
- Eastern Europe: In Ukraine and Siberia, Indigenous and local peoples are not allowed to kill pregnant animals, and in Siberia Indigenous peoples also cannot kill birds of prey and bears. In Siberia, bears are considered to be the father of humans. If you have to kill a bear because it threatens your life, a 3-day ceremony needs to be carried out. It is also prohibited to kill many species of snakes and swans. Swans are considered to be the birds of dead people and are thus sacred.
- Eastern Europe: Wild medicinal plants are of particular importance for indigenous peoples of Siberia. They are picked for two weeks every spring and winter, and there are many rules that guide this process.
- Latin America: Mixtec people believe that humans have their wild animal alter-egos, and they are particularly tied to these animals.
- Oceania: In Hawai'i, the relationship between humans and the land is established early in a person's life, because practices such as placing their afterbirth in family specific locations (rocky plains, ponds, or ocean, for example, or even planting a certain tree over the afterbirth) are maintained. During life, families maintain relationships with departed ancestors through the multiple body-forms associated with the family, including humans and particular plants, animals, birds, fish, or natural phenomena such as volcanic activities or weather behavior, specific to particular families. Upon passing away, again there are family- and place-specific rituals and practices that reinforce family relationships with place and the particular body-forms associated with them.
- General: Indigenous medicine is also subject to customary rules and norms. The general rule says that medicine knowledge is confidential and people should not share what medicines they use. In addition, often medicinal practitioners cannot set a price for treatment. It is up to the person who is treated whether he/she would like to pay or offer a gift in return for the treatment. Also, not everyone is allowed to pick medicinal herbs. This is something that is reserved only for good people or people who are spiritually healthy.
- General: Hunting is also an activity that is often required to follow certain customary rules, e.g. offering gifts to birds when hunting. Some communities may even fully prohibit killing birds. In certain places, indigenous people who breach hunting rules may even be faced with the death penalty.

Examples of traditional calendars

- Oceania: People of Hawai‘i with the interest and intention to do so, regardless of blood-ties to place, organize their lives around the “Hawaiian Moon Calendar Related to Fishing and Farming”. This calendar provides information on lunar cycles and weather predictions (over land and sea), and recommends fishing, farming, and some forestry and social activities accordingly. An easily accessible annual poster depicting the calendar has been produced for the past 40 years by the Prince Kūhiō Hawaiian Civic Club.

4. Status and trends, drivers and future scenarios of the sustainable use of wild species³

The main questions posed to the participants were the following:

- How do Indigenous Peoples and Local Communities (IPLCs) use wild species?
- How do trends in use affect nature's contributions to people (NCP) and quality of life?
- What are the status and trends in the use of wild species (using scientific knowledge and Indigenous and local knowledge)?

4.1. Overarching points

Participants made the following overarching points:

- Many IPLCs live in biodiversity rich environments and territories.
- Wild species and their uses are central to IPLC cultures and identities and, in many cases, are essential to their livelihoods.
- Where they have not been disrupted, many ILK-based approaches have underpinned long-term sustainable uses of wild species in the past and today. Many case study examples could provide baselines for assessing sustainable uses by IPLCs and others.
- However, there is a decline in the customary practices that support sustainable use of wild species in many communities in many regions of the world. These declines are often the result of a web of impacts putting pressures on communities and their lands and waters, including economic pressures, cultural change, education systems, language loss, rural to urban migration, loss of ILK, prohibition of traditional practices, reduced access to lands and resources, climate change and biodiversity loss.
- Likewise, transmission of ILK to younger generations is being interrupted in many communities. This trend represents a challenge to IPLCs and their traditional ways of living, including spiritual practices and relationships to lands, waters, and other beings. Among the adverse consequences are shifts away from wild foods to less nutritious diets.
- The main threats to the biodiversity of wild species are habitat loss, fragmentation and degradation, over-exploitation, invasive species, environmental pollution and anthropogenic climate change – these are the factors that will affect future scenarios and models of the development and sustainability of wild species. Many species play an important role in natural ecosystems and in the services they provide, and rare species are more likely to have unusual traits that may be useful in the future.

³ The text in section 4 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.

- Nevertheless, there are cases where despite difficult conditions, IPLCs are drawing on ILK and customary rules and norms to revitalise traditional practices, restore disturbed environments, recover wild species populations, and reinvigorate more traditional ways of living.
- International, national, and sub-national policies governing lands and water rights, as well as access to resources, can create enabling conditions for this resurgence of ILK and traditional practices of wild species use.
- A global inventory and assessment of the conservation status of wild species that have not yet been assessed is necessary in order to be able to effectively address the challenges of both in-situ and ex-situ conservation and sustainable use of wild species.

4.2. Knowledge and observation

Key points expressed by participants

- Indigenous and local knowledge about people-animal-plant relationships is a potentially important foundation for sustainable use beyond IPLC communities. Realizing its full benefits in this regard will require enhanced documentation and understanding of ILK, while respecting IPLC rights.
- Observation is also fundamental to sustainable use. Many IPLCs closely monitor and assess resources over time. Such knowledge can be a source of valuable information for developing management or co-management plans, again while respecting IPLC rights.

Examples

- Africa: Communities around Mafungautsi State Forest embarked on a joint resource monitoring exercise with the Forest Commission – an arm of government responsible for managing all forest resources in the country. The communities took the lead in monitoring aspects of the forests that were of interest to them e.g. broom grass, honey and hard timber. Following the monitoring initiative, use of the resources under observation was more sustainable, and there was more equitable sharing of the resources and improved incomes and revenue to the resource harvesters and the state respectively.⁴
- Eastern Europe: In Siberia, Russia, pine nuts give a large crop about once every four years. Pine nuts and their oils are used to strengthen other medicines, and they also improve human immunity in severe frost. Nuts are eaten with badger fat, honey and berries. Therefore, pine nuts are collected in large quantities once every four years. In lean years, indigenous peoples only collect fallen nuts or harvest small amounts, so that nuts remain for wild species, including badgers. When nuts are in short supply, the badger population declines. Badger fat is also an important part of traditional medicine, so this species is also important for indigenous people, and pine nuts are therefore left for the badger. This is one of the links between indigenous peoples, traditional knowledge and the sustainable use of wild species, which shows when species can be

⁴ Mutimukuru, T., Kozanayi, W. and Nyirenda, R. Initiating a dynamic process for monitoring in Mafungautsi State Forest, Zimbabwe. In Guijt, I. (ed). 2007. Negotiated learning: Collaborative monitoring in forest resource management. Resources for the future. Washington DC, USA

harvested or collected, how much can be harvested, and the links between species, knowledge, community planning and sustainability.

- Eastern Europe: Based on the interviews with Hutsul people there is a shift in use of forest resources, because of economic influence, so now there is overharvesting, e.g. harvesting of green blueberries or harvesting *Arnica montana* for sale and to gain income, including its roots, which would normally enable its regeneration. *“It is just to fill up the pockets with money, it is no good for nature”*.
- Global: Currently, every year there is an increase in volume of work on the “flagging” of useful wild crops in botanical and conservation databases, which also leads to an increase in research on hotspots where wild relatives of crops are found, and enhanced cooperation between researchers of plant genetic resources and plant conservation communities for the future. The databases of “native” and “indigenous” species, both seeds and wild species of animals and plants, are expanding. Such databases are also created with the help of IPLCs, considering their traditional knowledge and practices.

4.3. IPLC culture and practices in the face of change

Key points expressed by participants

- Some of the most important enabling factors for revitalization and continuation of sustainable use at the community-level include a high level of organization, pride, agency and community dynamism.
- ILK has always been dynamic and IPLC practices will need to continue to adapt in response to social and environmental changes, including climate change. It is key for communities to manage these changes for themselves, in order to maintain both their values and sustainable uses of wild animals, plants and fungi.
- Many IPLC youth leave their communities and migrate to cities for education and/or economic opportunities. Creation of culturally-grounded livelihood options may reduce reasons for outmigration and make it possible for others to return.
- Often, IPLC youth are given negative messages about traditional ways of living. Restoring pride is essential to create the conditions for more to stay in their communities and continue with the traditions of their ancestors.
- A global surge of interest in cultural revival and species-specific festivals is an indication of expanding interest in nature and indigenous lifeways that could inform the promotion of sustainable use.
- Climate change may reduce the ability of elders and communities to predict the weather and phenology (i.e. life stages of wild species) using ILK, making it harder for communities to plan their activities on the land, and leaving them more exposed to climate related risks such as droughts.
- Climate change may also lead to a greater reliance on wild species, rather than cultivated species which can need more water and be less resilient. If crops fail or domesticated animals die, people

may turn increasingly to wild species to supplement diets. This can have both positive and negative consequences for sustainable use and IPLC culture (e.g. declines in wild species, or a resurgence in traditional gathering and hunting).

- Invasive alien species may also disrupt ecosystems, making it harder for IPLCs to manage their use sustainably.

Examples of social change and dynamism

- Asia: Rotational farming used by the Karen could be a good case study. It is a traditional but dynamic practice that has proved very effective. To avoid depending only on rotational agriculture, the Karen community has diversified its economic livelihood by cultivating coffee, tea, bamboo worms and beekeeping. Experiences of the Karen people show that old huts on fallow lands are very good for beekeeping and that honey from fallow land is more tasty and colorful than honey from the forest. Indigenous beekeepers contribute to increasing biodiversity. It is important that the following three elements are always used or managed collectively: settlement, agriculture and food hunt. If they are done correctly, there is confidence that there will always be enough resources for everyone. The Karen people also have pride and confidence in their knowledge, and they do not feel inferior to other outside experts. They see academics as being people who come to the community to learn from its members. The Karen are also excellent examples of community mobilization. They are very active in discussing between communities and networking. They also stay united when negotiating with others.
- Asia: As a result of the above, Karen communities of Thailand often see no net migration of youth to the cities. Many of the young people who go away to study come back to the community after graduation. This is unique as many other communities see their youth leaving for cities in search of jobs. But the Karen have managed to diversify their traditional food systems in a way that allows for opportunities and financial viability for their youth. For example, young people are often successful in developing social enterprises and creating their own brands e.g. around coffee, honey or nuts. Girls studying in cities often come back to the community on weekends to collect foods that they can immediately sell, so they maintain connections to community and traditional use even when studying.
- Latin America: In Mexico, if you are a community with indigenous land tenure, you have the right to influence wildlife management in your area. Currently, indigenous initiatives promoting sustainable conservation and entrepreneurship are on the rise. Examples include the export of deer meat in Oaxaca, a mountain region of Mexico abundant in deer, and harvest of wild agave for mescal. Due to their hallucinogenic properties, mushrooms are also important for indigenous women practicing medicine in Oaxaca.
- Oceania: Native Hawaiians and their allies are using the courts, the legislature, administrative rules, and social norms to provide for the perpetuation of traditional and customary practices of: *mālama ʻāina*, to care for the land, including the waters, and all things upon, under, and above it; gathering from the ʻāina, including from the streams, the shorelines, and oceans; *mālama i nā ʻiwi kūpuna*, to care for the bones of the ancestors and the places that hold them; protecting in-

flow volumes of water necessary to maintain stream, estuary, and near-shore environments, as well as to provide necessary water for wetland taro gardens; and “education with aloha” which integrates indigenous and place-based knowledge, language, and aloha with “western” science, history, and language; among other things.

Examples of climate change

- Asia: Indigenous communities have been using less fire since a dryer, hotter climate has recently been affecting people’s lives. Local resources are mobilized to overcome these challenges, including building small dams that can be used by communities in a dry season.
- Eastern Europe: In Siberia, Russia, the use of wild species has begun to increase in some seasons. Due to climate change, much more rain can occur during the summer, which increases the number of some species of edible mushrooms and wild plants that are consequently harvested in a larger quantities by both indigenous peoples and the local population. The hotter summer season can also affect the growth of some dark mushrooms and berries, which also increases their harvest and use.
- Eastern Europe: In Ukraine, IPLCs report that the traditional period for harvesting medical herbs has shifted by two weeks because of the changing climate.
- Latin America: In Oaxaca, Mexico, people may be increasingly looking to wild species to supplement their diets as a changing climate makes their domestic crops less reliable.

4.4. Food systems and wild species

Key points expressed by participants

- Food is central to the culture, health, and wellbeing of a people. Maintaining traditional food systems is important to maintaining and revitalizing the cultures and wellbeing of IPLCs. Nutritional values of wild foods and their place in IPLC culture should be considered when discussing ways forward for sustainable use.

Examples

- Africa: In Zimbabwe, rural communities organize and promote food fairs where different people bring, cook and share different traditional dishes. This way “lost” dishes and recipes are revived and over time, young generations acquire a taste for the traditional foods being promoted.
- Asia: The link between health and traditional agriculture, e.g. rotational farming, would be particularly interesting to explore in the assessment. In some communities, 80% of food comes from rotational agriculture so it would be a good idea to have a case study on what nutrients are provided by this type of farming. In Thailand, some communities work together to provide healthy local foods for school lunches using traditional food production methods.
- Asia: IPLC food culture could make a good case study for the assessment. There is a documentary on the role of women and seeds in one of the indigenous communities in Asia, which is available online. The documentary addresses the issue of collectiveness and mutual support in relation to food. It tells the story of a community where rice was the staple food. Families with higher rice

production would share their supplies with others. In case of a surplus, rice could have also been shared between communities. Such practices are based on strong cultural relations in the community. Experiences of this community are well documented and available to a wider public.

- Eastern Europe: One of the main conditions for a prosperous life for indigenous peoples in the extreme conditions of the Arctic and the Polar North is high-quality nutrition, which compensates for the negative impacts of the arctic climate on the human body. As a result, northern peoples have paid great attention to good, healthy food since ancient times, and traditional nutrition has not changed much today. From ancient times, meat and fish products were the basis of nutrition, but their consumption in local groups varied. It depended, first of all, on the type of activity they practiced. For hunters and reindeer herders, “meat food” occupies an extremely important place in nutrition, while fish caught in certain seasons brings some variety. “Settled” indigenous people of the Russian Arctic, whose main occupation is freshwater and marine fishing, have predominantly a menu of fish. Overall, daily diets are characterized by modesty and moderation, while many kinds of dishes are prepared only during the holidays and ceremonies.
- Eastern Europe: For some of the indigenous peoples of Siberia, Russia, most food is obtained from taiga and swamp areas and the basis of their diet is small animals and fish, and almost 30-40% of their diet is wild species of mushrooms, plants, berries and nuts. From dried fish they make “fish flour”, as well as making “flour” from pine nuts and caviar, which is then used in cooking fish bread, tortillas or for soups and other dishes. For a “hard winter” they process a lot of dried meat, fish and berries. Some of the dry pieces of food (berries, mushrooms, fish) can be taken out for feeding birds and small animals during severe frosts.
- Eastern Europe: In Russia, nutrition and medicine are often combined. Selkups usually eat a lot of dry products, but in some communities the Selkups also eat raw deer or elk liver, especially if they feel a loss of energy and fatigue, or during special holidays. Raw liver is very useful, as it increases the amount of hemoglobin and gives energy and strength. Also, when it is very cold and less than -45 degrees Celsius, it can be difficult to breathe, and therefore a very important part of the culture of the northern peoples is traditional food, which is directly related to medicine and wild species. In severe frost, communities eat a lot of meat broth, raw liver, fermented wild garlic, and a mixture of badger fat and pine nuts, and drink “wild tea” (a mixture of marsh and taiga leaves and herbs). All this increases the amount of hemoglobin in the blood, the diaphragm relaxes and it becomes easy to breathe, and immunity and strength increase. This is directly related to the protection of these species and monitoring of their condition, as the communities are directly dependent on them.
- Eastern Europe: Saami in the Arctic use fresh deer blood to make pancakes.
- Eastern Europe: In Ukraine there are festivals of traditional cuisine in mountain regions, including for the ingredients of wild plants and mushrooms.
- Eastern Europe: In Ukraine traditional sheep herding is declining due to its economic viability. The first Ukrainian product that got the Geographical Indication was Hutsul Brynzya (traditionally made sheep cheese). The EU project “Support to the Development of a Geographical Indications

System in Ukraine” helps to certify the special status of a product and keep its manufacturing tradition alive. This attention to it could bring some economic benefits for youth in order not to leave their traditional areas.

- Latin America: In 2010, UNESCO inscribed traditional Mexican cuisine on the Representative List of Intangible Cultural Heritage of Humanity. A number of conferences were held at this occasion, with workshops led by IPLCs teaching people how to prepare, cook and spread interest about indigenous food.
- Latin America: Mixtec people of Oaxaca used to be hunters but have now become deer keepers. Their experience has been described in a book.
- Latin America: In Mexico, citizens often participate in mushroom festivals where they can learn about different types of mushrooms, mushroom picking and cooking.
- North America: In Canada, indigenous peoples are making efforts to re-introduce indigenous approaches to food to indigenous communities and broader society. Indigenous chefs are demonstrating how indigenous food products can be used (e.g. seal meat). For example see: <https://www.saveur.com/indigenous-chefs-toronto-canada/>

4.5. Education

Key points expressed by participants

- Dominant education systems often contribute to a reduction in sustainable use by younger generations. Generally, schooling teaches different knowledge, aspirations and skills than those needed to sustainably manage resources and tends to reduce respect for and pride in elders and traditional institutions.
- Education policies that prioritise learning both ILK and “western” ways of understanding the world could lead to improved sustainability outcomes and better wellbeing for communities.
- There are multiple ways in which current education systems could evolve to include ILK, including by encouraging youth to learn how to learn by observation, experience, and listening to elders, rather than being told answers. Land-based learning can be reinvigorated as a way of encouraging this.
- The education system can also play a big role in restoring pride in a communities’ traditions, ILK and elders, by teaching about the importance of these community strengths in the classroom, and by encouraging youth to spend time with elders on the land outside of the classroom.
- Use of indigenous languages is an important for transferring indigenous and local knowledge to younger generations.

Examples

- Eastern Europe: In the arctic territory of Russia, a unique system of nomadic kindergartens and school education was developed and gradually introduced for the nomadic indigenous reindeer herder communities. This system considered their traditional way of life, cultural characteristics and traditions. This was a change in the approach to education of indigenous peoples, so that

teachers would move from place to place, following reindeer herders across the tundra. For reindeer winter routes the nomadic schools have buildings, for summer routes they use tents. These schools are supplied with compact computer, chemistry, physics, and biology labs. The curriculum includes classes of native language, Russian, national history, national culture, traditional ways of hunting, fishing, reindeer husbandry, and environment protection, among other subjects. Such education contributes to the sustainable development of indigenous peoples and their integration into modern society, while preserving their traditional lifestyle, culture and language, and their interaction with nature and traditional methods of biodiversity conservation.

- Eastern Europe: There is a general trend in Ukraine and in Komi Republic that young people spend more time indoors with computers instead of learning from nature (based on interviews). There is a crucial need for new approaches for promoting the retention and transmission of IPLC knowledge and wisdom for future generations.
- North America: Mi'kmaq and other indigenous communities in Canada have been struggling with a decline in sustainable use and traditional ways of using the land and its resources, but currently there is a great resurgence of land and water based practices that include examples such as living curricula and land-based education programs, some of which offer academic credit. For example, the Dechinta Centre for Research and Learning (<https://www.dechinta.ca/>).
- Oceania: In Hawai'i, certain charter, public and private schools, now teach both science and indigenous and local knowledge, which represents the understanding that learning is better, richer, deeper and more wholesome when both perspectives are included. Children are taken out on to the land to see where the examples, metaphors and similes that are derived from nature come from, and to learn about the roots of words, expressions, and practices found there also. The way children learn and connect to nature in nature and through language, is richer and more complete than when only in a classroom or on a campus. Multigenerational associations are important in this form of education, so parental and elder involvement is a part of the method, which includes active service learning which may include both mālama 'āina, to care for the land, including the waters, and all things that are upon, under, and above it, and hānai po'e, the growing, preparation and presentation skills that it takes to feed people (hānai po'e).
- Oceania: The 2019 annual Hawai'i State Conservation Conference offered a panel on careers in conservation, conducted entirely in the Hawaiian language. Translation services were provided to 100 attendees. About 200 people attended the session. Increasingly, people in science, law and education, among other disciplines, also take full course work in Hawaiian language and culture.
- Oceania: The study of hula, Hawaiian dance and oratory, continues to be an important source of traditional and customary knowledge, as well as its retention and transmission. Also, the Hawaiian language newspapers, primarily of the 19th century, are being systematically retrieved, stored, translated and indexed. The on-going analysis of the newspapers is providing new information and insights into the culture as recorded by the people of the time.
- Global: Currently, the education system often does not present small-scale farming as a prestigious occupation, even though this type of farming is responsible for generating a very large proportion of food (about 70%). Because of that, children start to question farming and aspire to

take up other jobs in the cities. Modern education systems may thus endanger food sovereignty and security and sustainable use.

4.6. Economy

Key points expressed by participants

- IPLCs may struggle to maintain their traditional uses and aspirations for subsistence livelihoods in countries that have adopted capitalist economic systems, as there are pressures to acquire more money or food than is immediately needed.
- Impacts of global markets (e.g. palm oil), business exploitation (e.g. pharmaceutical companies) and large-scale infrastructure developments (e.g. roads, dams) and trafficking of wildlife can adversely affect IPLC customary management of resources.
- The poor or IPLCs rarely play the dominant role in overexploitation of resources, despite a body of science that often places the focus on them. Models would more productively consider the impact of industrial processes on the state of natural resources.

Examples

- Africa: One state introduced a raft of taxes to regulate harvesting of baobab fruits. The harvesters' immediate reaction was to overharvest for two reasons: firstly, to raise enough money to recoup the money used to pay for the harvesting permits, and secondly, they overharvested on the assumption that after paying for the permit, they had permission to harvest as much as they want. Thus, the net effect was overharvesting arising from over-taxing the harvesters.
- Africa: In the past, a hunter could get paid for hunting the Big Five animals of Africa as they were considered vermin. Now they are protected, but poaching is a major problem, as economic incentives continue to make killing these animals attractive.
- Eastern Europe: Indigenous communities need to obtain special permission for traditional fishing and hunting of a certain amount of fish or animals. This is a paid permit, and in different regions the prices and volumes for catching fish are also different. As a result, indigenous peoples can involuntarily and unintentionally become poachers, if they do not have money because they live in rural areas without jobs and cannot buy the permission, or because they simply do not know the law and go fishing to feed their family. As a result, there are already cases where a father was fined for catching one fish, and where an elder was fined for four fish that were found at his house.
- Eastern Europe: In Russia, indigenous knowledge about biodiversity and the use of wild species have always been very strong. For example, the use of wild garlic (forest and marsh species) has always been considered traditionally important, and indigenous peoples have used it for hundreds of years, both for nutrition and for traditional medicine. However, after scientists noted that it was a very healthy species to consume, traditional recipes – salted, fermented, dried, infused – appeared in stores as a "super food", and knowledge of this species became publicly available. This species began to be cultivated and grown for sale on a large scale for market, since in nature it is only found in very inaccessible places and only for 2-3 weeks a year. On the one hand, this is positive, since wild species are not harvested from nature in large numbers, but on the other

hand, if demand arises specifically for the “wild species”, it may be uncontrolled, which could lead to the complete disappearance of the species.

- North America: Experience of the Mi'kmaq people in Canada shows that new concepts of commodifying natural resources can be imposed on indigenous communities. Communities are often struggling, and these challenges are also increased by missing and murdered women and the highest child poverty rate in Canada. The situation of some communities is so desperate that people must take any form of income they can get, and they do not feel able to choose customary sustainable use.

4.7. Tourism

Key point expressed by participants

- Tourism can alter human-animal relationships and can have both positive and negative consequences for the sustainability of wild species and human-animal relationships.

Example

- Eastern Europe: Bikin National Park in the far east of Russia is located in a unique territory, which is famous for its rich flora and fauna, and includes the habitat of the Amur Tiger. 70% of the park is the territory of traditional habitation and economic activities of the indigenous peoples of Udege, and therefore indigenous peoples participate in the management of the park and in the sustainable development of tourism. Tourism is possible only with special permission and with the accompaniment of an indigenous “Jager” or ranger. About 80 indigenous hunters have official rights of the Jager and ranger work. Tourism financing is also used to develop this wildlife conservation area. Indigenous Jagers accompany tourists, and at the same time conduct monitoring and verification of the territory and prevent all types of offenses. Thus, tourism can help in the conservation of wild species and territories, and support indigenous livelihoods.
- Eastern Europe: The increase of arctic tourism can have a very negative effect on the wild species of this region, such as polar bear, narwhal, Greenland whale, walrus, migratory birds and white gull. These species are already at extreme risk of extinction and uncontrolled increase in tourists in places these animals inhabit worsens the situation. Along with climate change and industrial pollution, “wild uncontrolled” tourism is damaging habitats and ecosystems, leaving garbage, polluting parking lots with oil, emitting black carbon, increasing the amount of noise and increasing poaching.
- Eastern Europe: Unmanaged tourism with quad bike in the Carpathian Mountains is damaging soil cover and disturbing animals (including waking up bears in wintertime).
- Oceania: In Hawai'i, certain sharks are traditionally affiliated with certain families and specific places. When such family members come to feed their affiliated sharks, they announce their arrival by tapping on their canoe, and the sharks are drawn to the sound. Currently, there are commercial tours that chum to draw sharks to their tour boats. Sharks have learned to respond to the cue of the motors. The sharks are responding to commercial rather than familial motivation and long-standing order and relationships are disrupted. The sharks are treated as predictable entertainment rather than respected for their true natures. Also, tourists may assume that all shorelines and their waters are always safe and predictable, and may not honor long-standing

traditions of avoiding entering the ocean at certain times or under certain conditions, when sharks may be hunting or otherwise active. Life-threatening encounters may be the unintended consequence of swimming at such times or during those conditions.

4.8. Human-wildlife relationships

Key points expressed by participants

- Many human-wildlife conflicts today often stem from failure to understand animal behavior and respect traditional human-wildlife relationships. Common outcomes are for animals to be seen as problems to be removed, or as needing protection without consideration for human livelihoods and wellbeing.

Examples

- Africa: Baboon populations in urban neighborhoods of South Africa have been rising, mainly due to increasing urbanization, and people have turned against these animals. In some communities, every baboon entering someone's garden gets three chances. Each time, it is shot with paint so that it is clear how many times it has entered an area that it should not, and finally it is killed. Killing baboons in this way brings risks to the group however, because the social structure of the group can be endangered if a big baboon is killed, as they lose their leader and teacher.
- Africa: Elephants always return to the place where they were born, even after many years. However, conflicts arise because people, often with little knowledge on wildlife, have started to move into these areas.
- Eastern Europe (Russia, Arctic): Due to climate change and melting ice, polar bears cannot conduct their traditional walrus hunt, as they do not have enough ice for hunting and diving. Due to hunger, they begin to go to the settlements of indigenous peoples located in the northern territory of Chukotka and other polar regions. This causes a conflict of values and security. To prevent these situations, indigenous peoples created "Polar Bear Patrol", community volunteer teams from indigenous peoples and local communities, which monitor the situation with polar bears all year, including their hunting places, trails and migration paths, and the number of dens and cubs. This also allows the generation of additional information about their seasonal movements and about what happens with bears as a result of climate change. It also helps to protect them from poachers. Now, the Polar Bear Patrol is a big project of a kind that cannot be found elsewhere in Russia or the world, and it is very popular as an example of the interaction between environmental professionals, indigenous peoples and the local communities.
- Latin America: In Oaxaca, Mexico, there are some conflicts between communities and jaguars attacking livestock. In the past, animals were offered to jaguars in a ceremony, and IPLCs knew where jaguars could be found and alerted them when entering their territories. Currently some city rules give a jail penalty for killing a jaguar.
- North America and Russia: Other examples of wild species that may be involved in conflict situations with humans include moose (e.g. in Haida Gwaii and Timiskaming), wolves and bears.

5. Policy options and responses⁵

The following question was posed to the participants:

- What governance structures support good relationships between IPLCs and wild species?

5.1. Overarching Points

Participants made the following overarching points:

- Policies and regulations are some of the main drivers of declines in sustainable use of wild species.
- IPLCs have a crucial role to play in policymaking concerning environmental and conservation issues, including wild species, at all levels of government – local, regional, national and international.
- Despite progress at the international level, national-level policy making often still does not consider IPLCs or include them in the process.
- The degree to which communities organise and mobilize themselves has a great impact on how well they are able to withstand or even reverse pressures placed on them by governments and social and environmental change. Some communities are highly organized and work together to push for the changes they need from policymakers. Communities who are not able to organise and mobilize themselves often find that they have policies and regulations imposed onto them, with many negative consequences. This is also discussed in Section 4.3 above.
- Policies that influence topics highlighted in this report (e.g., education, business and wild foods) have implications for sustainable uses of wild species and the well-being of IPLCs.
- Customary governance and institutions play an important role in the many examples of sustainable use of wild species by IPLCs, and these could be resources for policy and decision-making around sustainable use.

5.2. International policy

Key points expressed by participants

- Good policies at the international level, where indigenous rights are increasingly well recognised, are often not acknowledged at the national and subnational levels or enacted in policy implementation on the ground.
- Mapping and monitoring of policy implementation are needed.

⁵ The text in section 5 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.

- Indigenous peoples and local communities are actively engaged with other IPBES assessments and international forums including the Convention on Biodiversity and the UN Framework Convention on Climate Change, and the Nagoya Protocol.
- IPLC voices and stories regarding contributions of Indigenous actions to meeting global goals such as the CBD Aichi targets will benefit international policy processes, as well as IPLCs.

Examples

- Global: The Nagoya Protocol on Access and Benefit Sharing (ABS) is as an important agreement that recognizes the role of IPLCs in contributing to its implementation.
- Global: Participants noted that clauses like “subject to national legislation” weaken international commitments such as the Nagoya Protocol.
- Global: Governments are now more inclined towards including community protocols in CBD reporting. This shows that progress has been made at the international level regarding IPLCs and their role in conservation.
- Global: A good example of IPLCs intervening in international policy making was in 2013, when the opening statement made by a government at an international conference suggested that in order to save forest ecosystems, IPLCs need to be removed. Thanks to a strong and timely response from IPLC representatives, the government apologized for these words and acknowledged that IPLCs are in fact forest protectors.
- Global: Forest certification schemes are one of the instruments that can be used to protect IPLC rights at the local level.

5.3. National policy making

Key points expressed by participants

- Many national policies discourage sustainable practices when they are written and/or implemented.
- The voice of IPLCs is often marginalized in the national policy making process, which commonly takes a top down approach that does not include consultation with IPLCs.
- Inclusion of IPLCs as knowledge holders and partners in national policy making could help to end this marginalization, rather than IPLCs only being included as observers.
- Improved communication between IPLCs and people outside their communities would support better understanding of customary rules and norms by policymakers, business, NGOs and society in general. Such a public understanding would be valuable at times when a government makes a decision or a private company intends to exploit resources on IPLC lands.
- Decentralized/local governance systems tend to result in better management of resources. Channelling funds directly to indigenous and local communities would support local governance.

- The sustainable use assessment can make an important contribution to strengthening the capacity of national governments to meet their international commitments to global environmental protection and sustainable development.

Examples

- Africa: Among the Shona people in Zimbabwe, trees and wild animals have both consumptive and non-consumptive uses such as spiritual fulfillment. Such non consumptive uses are usually forgotten in policy decisions, thereby undervaluing the use of such local resources.
- Eastern Europe: The Russian Federation holds approximately two thirds of the world population of domestic reindeer, but federal law does not regulate reindeer husbandry. In Russia, reindeer pastures comprise more than 300 million hectares, or 20% of the country's total area. Reindeer herding is the basis of life of the indigenous peoples of the Arctic region. Indigenous peoples are the most competent at reindeer husbandry, including the Nenets, Sami, Khanty, Dolgan, Even, Evenki, Chukchi and Koryak. These small nations have the cultural traditions most closely associated with reindeer husbandry, and with wild species associated with reindeer husbandry. Their way of life and economy depend on reindeer. The main income for the hunter-reindeer herders is not from the sale of meat, but from hunting products, mainly furs, obtained with the help of reindeer. Therefore, in the autonomous okrugs (districts) in Sakha Yakutia, Yamalo-Nenets and other autonomous regions of Russia, indigenous peoples themselves initiated the development and adoption of regional laws on reindeer herding, based on their traditional knowledge, lifestyle and relationships with nature and species.
- Eastern Europe: In the Tomsk Region of Russia, the indigenous peoples known as the Selkups influenced changes in regional regulations in terms of the size of fishing nets used. Regional authorities had ordered that the size of the holes in the netting should be small. However, because of this, many young fish would die. The Selkups, on the basis of their knowledge of rivers and keeping fish in different seasons, have proved that such nets are dangerous and can destroy the fish stock. As a result, the regional order was changed.
- Eastern Europe: In Komi Republic, Russia, NGOs protect the IPLC customary rights to harvest wild berries, mushrooms and protect customary territories for hunting from big logging companies. Now, the decision-making for the forest around the IPLC villages are done with their cooperation and through public hearings.
- Oceania: In Hawai'i, on Hawai'i Island, the Office of Hawaiian Affairs and the Kona Hawaiian Civic Club were able to intervene on a Federal Army Corps of Engineers Permit application and argue successfully that certain seaweed beds, seashell nesting areas, and a specific place that a certain prized species of fish frequents be analyzed using National Historic Preservation Act Criteria. Though the resources did not merit protection under the Act, the precedent of successfully arguing that biological communities are historic resources was made.

5.4. Supporting customary institutions and management

Key points expressed by participants

- Strengthening customary institutions could be an important policy intervention for the sustainable use of wild species. Customary institutions include councils of elders, shaman, traditional calendars, taboos, and rest periods for resources.
- Efforts to formally recognise and support traditional management practices would benefit efforts to move towards sustainable use of wild species.

Examples

- Africa: In Zimbabwe, the Environmental Management Act (2002), the principal law with regards to the governance of natural resources, makes reference to the need to observe local customary practices and customs in the utilisation of natural resources. Additionally, the Traditional Leaders Act (1998), empowers traditional leaders (custodians of customary practices), to participate actively in the conservation of natural resources in their jurisdiction. Therefore, the Traditional Leaders Act and Environmental Management Act serve as a bridge between customary and statutory forms of resource governance. Also, they attempt to revive customary practices and indigenous knowledge systems which were waning for various reasons, not least of which was the complete adoption of statutory forms of governance to regulate access to natural resources.
- Africa: Commercialization of some non-timber forest products, e.g. baobab, has resulted in policy overriding customary practices that the locals have historically used to regulate access to the baobab trees, replacing these with statutory forms of governance. Without effective means to monitor and enforce the statutory forms of governance, the state's control of local level resource management has sometimes resulted in resource degradation.
- Asia: There is a story from the Murut community in Sabah, Malaysia, written down by the head of the village. It tells about the word "Tagal" ("prohibition") that describes the system for delineating an area where hunting and gathering is prohibited in order to ensure that local resources will be saved for the future. Delineating the area is a collective decision of the entire community. One of the selection criteria is the condition that the location is not the only source of food flow in the community. Women's participation in the process is crucial as they know where the forest food is located. "Tagal" system is also used in watersheds, wetlands and other ecosystems of Sabah. The International Indigenous Forum on Biodiversity is currently documenting these cases and aims to include them in the upcoming Local Biodiversity Outlook.
- Latin America: Community-driven voluntary conservation areas and management plans in Oaxaca, Mexico are also a good example of community-driven management that is supported and enabled by policy, e.g. around the village of Capulálpam de Méndez, which includes plans for sustainable forestry and deer.
- Oceania: The government of Australia and indigenous peoples have signed an agreement regarding natural resource management. It formally engages indigenous peoples in management of natural landscapes and marine areas, known now as Indigenous Protected Areas (a good source of information on this is Chrissy Grant, an Indigenous Australian who works on heritage issues).

- Oceania: In Hawai'i there are examples of regular recognition of and consultation with Native Hawaiian and local communities when land-use, natural resources management, and historic preservation decisions are to be made. Non-profit organizations such as Kua'āina Ulu 'Auamo and the Association of Hawaiian Civic Clubs, government departments such as the Office of Hawaiian Affairs, and the Kamehameha Schools in the private sector, among others, regularly and consistently educate, advocate, and take legal action to advance the practices of mālama 'āina (to care for or protect the land, including fresh and ocean waters, and all things upon, under, and above them). The Community Based Subsistence Fish Area movement and the administrative recognition of it, first at Hā'ena on the island of Kaua'i, is an example of this. A similar initiative was approved at Ka'ūpūlehu on the island of Hawai'i under the administrative rule for the West Hawai'i Regional Fisheries Management Area.

5.5. Human rights, land rights and access rights

Key points expressed by participants

- Putting human rights at the centre of all policy discussions relating to the environment and sustainable use is essential to produce just outcomes, especially where IPLCs are involved. Presently, human rights-based approaches differ from region to region.
- Recognition of indigenous rights under international law and policy agreements contributes to more sustainable use of wild species, but is not fully embraced at national levels or in on-the-ground implementation.
- Land tenure, land rights, and rights to access and use lands and waters impact the ways IPLCs can use their lands and waters and make decisions about sustainable use.
- In many instances, prioritizing nature in protected areas has led to evictions of IPLCs from ancestral homelands where they have been practicing sustainable use, often severing the relationship between indigenous peoples and nature.
- Communities are also sometimes banned from sacred sites, which may have high biodiversity because they have been protected by IPLCs for millennia. As a result, IPLCs are no longer able to perform important ceremonies.
- Protected areas that cross national boundaries can represent special challenges to sustainable use of wild species by IPLCs, but further information is needed to understand their full implications.
- Laws that prohibit hunting and gathering are detrimental to the health and wellbeing of IPLCs who rely on wild animals, fungi and plants as primary sources of food.
- There are cases in which the land rights of IPLCs are recognized, but their rights to use natural resources are not. This often leads to poor outcomes for conservation and communities, as IPLCs use and management practices often contribute to maintaining forests and other ecosystems.
- Sometimes, the act of defending IPLC rights is criminalized. Where this is the case, it is difficult to resolve other issues impacting IPLCs, including the continuation of sustainable use.

Examples

- Asia: There were some extreme cases where IPLCs' houses were burnt and people were evicted from national parks. Even though laws approve some hunting and gathering, IPLCs are not allowed to go back to these areas to live.
- Asia: Policies promoting monoculture also exert a big impact on IPLCs and sustainable use. Vast areas of south-east Asia are turning into monocultures of corn, which are examples of industrial chemical-intensive farming. People working on such farms suffer from limited family time and diseases (e.g. cancer) triggered by chemicals used on the plantations. They often get into a cycle of debts as the money invested exceeds the actual return from the investment. There are cases of farmers committing suicide because of the situation, e.g. on strawberry plantations.
- Asia: Some countries have declared that they will increase their country's forest cover by 40%, especially in mountain areas, in line with international recommendations. IPLCs are often refused land tenure over these areas, even if they have lived there for centuries. New laws state that the land is only leased to a community for a certain period. There are communities that contribute to forest restoration, but their land rights are still not recognized.
- Asia: Community mapping is a good tool for empowering IPLCs. This not only allows for delineating community boundaries, but also for introducing the youth to the community's traditions and history. Young community members have an opportunity to work with GPS across boundaries and to learn from elders, e.g. about names of rivers and other landscape features. This is often done even though the government does not recognize land rights of IPLCs. By going through such advanced preparations, IPLC youth is better equipped for negotiations with governments.
- Latin America: When policies do not recognize the rights of IPLCs to natural resource use, whole communities are affected as they face problems sustaining themselves. Women are particularly impacted as they risk their lives to collect forest products that they need. There are a number of successful court cases concerning this issue, e.g. in Argentina's national courts and the Inter-American Court of Human Rights.
- Latin America: Article 27 of the Mexican Constitution acknowledges that all land, water and mineral rights are the property of the people of Mexico. The Government of Mexico recognizes local laws and a number of programmes have been put in place to ensure sustainable use of natural resources. The National Union of Wildlife Management, established in 2012, could be a good example.
- Latin America: Examples of good stewardship of wild species in Mexico include the Units for the Conservation, Management and Sustainable Use of Wildlife (UMA). These units are registered with state or federal environmental authorities and operate according to an approved management plan that regulates species harvesting. UMA aim to create economic incentives for biodiversity conservation by allowing landowners and managers to directly benefit from the exploitation of fauna and flora, e.g. through hunting and harvest. (Torres-Rojo, J. M., Moreno-

Sánchez, R., & Mendoza-Briseño, M. A. (2016). Sustainable forest management in Mexico. *Current Forestry Reports*, 2(2), 93-105.)

- North America: A ban on hunting caribou, currently in effect in Labrador and Northern Quebec, has a severe impact on communities, as caribou were central to local culture, economy and spirituality.
- Oceania: In Hawai'i the tension that existed in the previous century, between the urbanized, academic people who argued for Native gathering rights and the rural practitioners who argued for the care, protection and management of the resources over which the rights would be exercised, is being reduced through education and service learning as described in the example in section 4.5 of this report.
- Global: A positive example the assessment may want to consider is the International Guidelines for Small Scale Fisheries, which used a Human Rights Based Approach: <http://www.fao.org/3/a-i4356en.pdf>
- Global: Authors may also want to consider the Responsible Tenure Guidelines: <http://www.fao.org/3/a-i2801e.pdf>

5.6. Gender and inclusivity

Key points expressed by participants

- Inclusiveness in policymaking is crucial. Involving all members of the community, including elders, women and youth, can contribute to improved management of natural resources.
- Gender is a fundamental aspect of many IPLC customary rules, norms and practices for sustainable use of wild species. Women's and men's knowledge and use of resources may differ. Taking gender into account is essential for thorough analyses of IPLC governance of wild species uses.
- Gender dynamics within IPLCs and between IPLCs and settler cultures are far from uniform around the world. Many IPLC cultures are matrilineal and/or matriarchal, while others are patrilineal/patriarchal or plurilineal. While colonial processes have generally disregarded the roles of women, in some cases they also have worked to undermine the role of male leaders.
- The number of women in leadership roles is currently increasing in many indigenous communities.
- Women are key players in resource use and conservation. As a consequence, it is important that they are involved in every phase of the policy cycle from planning through implementation, monitoring and evaluation.
- Transfer of traditional knowledge and skills is important not only for sustainable resource use, but also for future community governance. To strengthen female participation in community leadership, it is crucial that women are well equipped with knowledge passed on to them by older generations.

Examples

- Africa: Some indigenous communities have been offering trainings, particularly for widows, on how to use their land rights for conservation purposes. Men tend to invest in cash crops and large-scale farming, which often leave women and children behind and negatively influence biodiversity, while women often make sure that resources are used sustainably.
- Africa: Kenya has committed to introduce laws that will allow girls to inherit land and to get their own title deeds.
- Africa: In Zimbabwe, older women have more access to sacred natural spaces. Some IPLCs believe that you are without sins when you are older, which gives you unrestricted access to sacred spaces.
- Asia: The Karen people of Thailand have a matriarchal social system and women's roles in the community are thus very strong. Tradition holds that it is the mother who is the powerful parent. When a couple gets married, it is the husband who needs to move into his wife's house. When a woman dies, her house is destroyed. Currently, separate buildings are set up as kitchens, so that when she dies, only the kitchen is torn down. It is also mostly women who inherit from their relatives, especially youngest daughters who look after their parents. Women inherit mostly land, while livestock goes to men. Women also own all seeds and are responsible for planning activities related to rotational farming. They guide the process and have a final say in where and how to plant. The Karen people make sure that power relations in the community are negotiated. This is why men are more involved in general governance at the community level, e.g. they are appointed as heads of the village, while women are powerful at the clan level.
- Eastern Europe: For many indigenous communities in Russia there are equal rights for women and men, but it also depends on the community, their lifestyle and traditional way of life.
- Latin America: In Mexico, women and men have equal rights, but in practice men often do not allow women to enjoy land rights.
- Latin America: Traditionally, women have always been involved in fishing in the Amazon region. Commercial fishing used to be done by men and subsistence fishing was done by women. When fishing development projects started to be implemented in the region, women were willing to get involved, while men were not. Women have often become members of committees and proven that they are effective at planning and monitoring. The challenge remains that even though they are often active in planning and monitoring phase, they are sometimes not involved in fishing.
- North America: In many indigenous communities in Canada, hunting and fishing are perceived to be dominated by men, though women too play an essential role in food harvesting and gathering.
- Oceania: In Hawai'i descent was traditionally ambilineal, allowing for conditional tracing of either matrilineal or patrilineal lineage. However, with increasing foreign influence and finally the occupation of Hawai'i, the foreign patriarchy prevailed and native men were marginalized. Coming from that ambilineal tradition, women quickly filled leadership gaps. The same fortitude and persistence that is resulting in the re-emergence of the Hawaiian language, mālama 'āina

(care and protection of the land, including fresh and ocean waters) practices, and mālama i nā 'iwi kūpuna (care and protection of ancestral bones and their burial places), among other things, is bringing the gender relationships back into order, peace, balance, and aloha.

5.7. NGOs, scientists and technology

Key points expressed by participants

- NGOs often take on the role of representatives of nature without consulting or developing partnerships with IPLCs.
- Many IPLCs have strong concerns about the potential for negative impacts from genetic manipulation of fauna and flora through technologies such as synthetic biology. These concerns are heightened by lack of transparency in some actions and experiments undertaken by scientists.
- IPLCs expect scientists to consult with them and respect community protocols prior to the introduction of new species (e.g. mosquitos).
- Where scientists and NGOs do work respectfully with IPLCs, this can lead to collaborations which are of benefit to all.

Examples

- Latin America: In Argentina, there have been cases of NGOs going to court to protect wildlife, e.g. jaguar, without consulting communities beforehand.
- Latin America: In Capulálpam de Méndez, Mexico, there is a network of three communities working together with scientists on community forest management. Biologists talk with children about nature and wildlife. They have a toy factory that works with children on designing toys.

Annex 1: Recommended resources

The meeting opened with a video “Kahnawà:ke Revisited: The St. Lawrence Seaway”. This is one of the first parts of the Kahnawà:ke Revisited series that looks at the effects the building of the St. Lawrence Seaway has on the community. <http://www.kahnawake.com/community/revisited.asp>

Participants also recommended a number of resources, including:

Carlos Enrique Michaud Lopez (Peru):

- Pastores de Puna, Uywamichiq Punarunakuna. Jorge A. Flores Ochoa.
- Oro de Los Andes : Las Llamas, Alpacas, Vicunas y Guanacos de Sudamerica. Jorge A. Flores Ochoa.

Lakpa Nuri Sherpa (Nepal):

- Local Biodiversity Outlooks - provides a snapshot of the many on-the-ground initiatives being led by indigenous peoples and local communities that contribute to the successful implementation of the Strategic Plan for Biodiversity 2011-2020, as well as other related global agreements such as the Sustainable Development Goals (SDGs) and the Paris Agreement. More information is available at: <https://beta.localbiodiversityoutlooks.net/>

Nataliya Stryamets (Ukraine):

- About the NGO protecting customary rights of Komi people: <http://www.silvertaiga.ru/en/en-news/>
- Example of national legislation on sustainable use of wild forest products: <https://zakon.rada.gov.ua/laws/main/449-96-%D0%BF>
- IPLCs in the Amazon: https://www.researchgate.net/profile/Josep_Gari/publication/284034435_Biodiversity_and_Indigenous_Agroecology_in_Amazonia_The_Indigenous_Peoples_of_Pastaza/links/56f032c908aedbe3ce432f2/Biodiversity-and-Indigenous-Agroecology-in-Amazonia-The-Indigenous-Peoples-of-Pastaza.pdf
- Traditional food in Kurdistan: where tulips and crocuses are popular food snacks Kurdish traditional foraging reveals traces of mobile pastoralism in Southern Iraqi Kurdistan: <https://www.researchgate.net/publication/337585538>
- Interesting study on Australia IPLCs wildlife management: <http://www.publish.csiro.au/wr/wr09130>

Polina Shulbaeva (Russia):

- Community-based monitoring and information systems (CBMIS) are initiatives by indigenous peoples and local community organisations to monitor their community’s well-being and the state of their territories and natural resources, applying a mix of traditional knowledge and innovative tools and approaches (definition used by the Forest Peoples Programme, see for example

<https://www.forestpeoples.org/sites/fpp/files/publication/2015/11/fpp-2015-cbmis-and-cbd.pdf>).

- The Bikin National Park has summed up the results of three years of work since its establishment. This protected area ensures the preservation of a large massif of intact forests in the Bikin River valley, the Amur tiger and traditional lifestyle of Indigenous people.
<https://wwf.ru/en/resources/news/amur/natsionalnyy-park-bikin-tri-goda-raboty-na-blago-lyudey-i-prirody/>
- Polar Bear Patrol. In 2006, a polar bear killed a girl in the village of Ryrkaipiy (Russia). In response to the tragedy, local hunters established the Umky Patrol – Polar Bear Patrol (Umky, pronounced Um-kha, means “polar bear” in the indigenous Chukchi language).
<https://www.worldwildlife.org/stories/polar-bear-patrol>
- Nomadic Schools in Russia. In the extreme conditions of the Russian north, nomadic schools are designed to follow reindeer migration routes and provide access to education for children of native Siberians. <https://educationpolicytalk.com/2014/04/26/nomadic-schools-in-yakutia/>

Sherry Pictou (Canada):

- *Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls*. The report foregrounds women’s voices. Stories and case studies, also bibliography. One of strongest recommendations was a recognition that women are rights holders. ([here](#))
- von der Porten, S., Ota, Y., Cisneros-Montemayor, A., & Pictou, S. (2019). The Role of Indigenous Resurgence in Marine Conservation. *Coastal Management*, 1-21. (may serve as some sort of guide on synthesizing several cases)
<https://www.tandfonline.com/doi/full/10.1080/08920753.2019.1669099>
- The Politics of Tek: Power and the "Integration" of Knowledge, Paul Nadasdy
https://www.jstor.org/stable/40316502?seq=1#page_scan_tab_contents
The Anti-Politics of TEK: The Institutionalization of Co-Management Discourse and Practice, Paul Nadasdy https://www.jstor.org/stable/25606237?seq=1#page_scan_tab_contents
- (Forthcoming) Improving responses at the nexus of poverty and climate change with a focus on coastal communities, coastal areas and Small Island Developing States (this may not be available until Dec.)
- Charles, A., Kalikoski, D. & Macnaughton, A. (2019). Addressing the climate change and poverty nexus: A coordinated approach in the context of the 2030 Agenda and the Paris Agreement. Rome, Italy FAO: <http://www.fao.org/publications/card/en/c/CA6968EN>
- Extra resource: <https://news.ubc.ca/2019/07/31/biodiversity-highest-on-indigenous-managed-lands/>
- Making connections with sustainable use of wild species and Indigenous Food/health
Debbie Martin, Two-Eyed Seeing: A Framework for Understanding Indigenous and Non-Indigenous Approaches to Indigenous Health Research:
<http://cjr.archive.mcgill.ca/article/viewFile/2348/2342>

- Indigenous Peoples' food systems, nutrition, and gender: Conceptual and methodological considerations. Stefanie Lemke and Treena Delormier
<https://www.ncbi.nlm.nih.gov/pubmed/29359433>
- Short Documentaries from Mi'kmaki:
Seeking Netukulimk: https://www.youtube.com/watch?v=jrk3ZI_2Dd0
- We Story the Land: <http://westorytheland.ca/>
- Indigenous methodologies / Two-eyed seeing:
 - <https://journals.sagepub.com/doi/pdf/10.1177/1609406918812346>
 - <http://www.integrativescience.ca/Principles/TwoEyedSeeing/>
 - Bartlett, C. (2011). Integrative science/Toqwa'tu'kl kijitaqnn: The story of our journey in bringing together Indigenous and Western scientific knowledges. In: T. Bernard, L. M. Rosenmeier, & S. L. Farrell (Eds.), Ta'N Wetapeksi'k: Understanding where we come from. Truro, NS: Eastern Woodland Pring Communications.
 - Bartlett, C., Marshall, M., Marshall, A., & Iwama, M. (2015). Integrative Science and Two Eyed Seeing: Enriching the Discussion Framework for Healthy Communities. In: L. Hallstrom, N. Guehlstorg, & M. Parkes (Eds.), Ecosystems, Society and Health: Pathways through Diversity, Convergence and Integration. Kingston, Ont.: McGill-Queen's University Press.
- Land-based education (indigenous worldviews)
 - Hansen, J. (2018). Cree Elders' Perspectives on Land-Based Education: A Case Study. Brock Education: A Journal of Educational Research and Practice, 28(1), 74-91.
 - Young, T. (2016). L'nuwita'simk: A Foundational Worldview for a L'nuwey Justice System. Indigenous Law Journal, 75-106.
https://heinonline.org/HOL/Page?handle=hein.journals/ilj13&div=7&g_sent=1&casa_token=&collection=journals
 - <https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1353&context=totem>
 - Dechinta Centre for Research and Learning (<https://www.dechinta.ca/>)
- Examples of living with natural world
 - Moose guidelines
<http://www.uinr.ca/wp-content/uploads/2009/11/Moose-Guidelines-Web-1.0.pdf>
 - Unamaki Institute on Natural Resources Moose Hunt Management Initiative
https://www.youtube.com/watch?v=UfrErDw_Eug
 - 1st agreement with First Nation to manage park
<https://www.cbc.ca/news/politics/stefanovich-romualdo-obadjiwan-fort-temiscamingue-1.5209461>
 - Forestry Management
<https://haidagwaiicommunityforest.com/>
https://teachingcommons.lakeheadu.ca/sites/default/files/inline-files/lawler%20bullock_indi%20comm%20forestry%202017.pdf
 - Caribou Decline in Labrador
https://fes.yorku.ca/wp-content/uploads/2018/09/Dennis_R_MP.pdf
(Includes: Indigenous Use of the George River Caribou Herd)

- Strategy - Caribou
<https://www.ilinationhood.ca/wp-content/uploads/2017/11/UPCART-STRATEGY-2017-ENG.pdf>
- Indigenous women in governance
Kuokkanen, Rauna. 2019. *Restructuring Relations: Indigenous Self-Determination, Governance, and Gender*. New York, Ny: Oxford University Press.
- On the resurgence of indigenous cuisine in Canada: <https://www.saveur.com/indigenous-chefs-toronto-canada/>

Yesenia Guadalupe Hernández Márquez (Mexico):

- Procedures regarding permissions of wildlife management available on the website of the Government of Mexico ([here](#))
- Management plans of various species designed by the Government of Mexico, e.g. regarding white-tailed deer (*Odocoileus virginianus*) ([here](#))
- Evaluation of national programs on UMAS ([here](#))
- Jaguar conflicts ([here](#) and [here](#))
- Mushroom festivals ([here](#))
- Mexico's national program of wildlife conservation and productive diversification in the rural sector ([here](#))
- Mexico's general wildlife law ([here](#))
- Mexican Council for Wildlife ([here](#))
- On ceremonies that show respect for nature: Egleé L Zent 2013 Jotí ecology, Venezuelan Amazon Environ. Res. Lett. 8 015008

Esther Katz (France):

- Amazonian traditional agricultural system as part of Brazilian intangible heritage. Please see the publication and summary booklet attached below:



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Annex 2: Agenda

Tuesday 8 October	
8h30-09h00	Registration
9h00-9h45	Opening, introductions
9h45-10h30	Aims, methods and agenda of the dialogue Brief presentation on agenda and discussion How can the dialogue be most useful for all participants? Discussion on Free Prior and Informed Consent
10h30-11h00	<i>Refreshment break</i>
11h00-12h30	Introduction to IPBES, including work on ILK (15 mins) Introduction to the sustainable use assessment: aims, methods, structure, timelines, final product, ILK in the assessment, progress so far (30 mins) Discussion (45 mins)
12h30-13h30	<i>Lunch</i>
13h30-14h30	Ch2: Conceptualizing the sustainable use of wild species
14h30-15h30	Ch3: Status and trends in the use of wild species
15h30-16h00	<i>Refreshment break</i>
16h00-17h00	Ch4: Indirect drivers of the sustainable use of wild species
Wednesday 9 October	
8h30-10h00	Ch3: Status and trends in the use of wild species Ch4: Indirect drivers of the sustainable use of wild species
10h00-10h30	<i>Refreshment break</i>
10h30-11h45	Chapter 6: Policy options and responses
11h45-12h30	Chapter 5: Future scenarios of the sustainable use of wild species
12h30-14h00	<i>Lunch</i>
14h00-15h00	IPLC caucus
15h00-15h30	IPLC caucus address to SUA authors
15h30-16h00	Narratives/case studies
16h00-16h45	IPLCs & final assessment Collaboration, communication, & next steps
16h45	Closing

Annex 3: Participants list

Indigenous Peoples and Experts on ILK		
Jason Dicker	Canada	Indigenous Knowledge holder, Nunatsiavut, Newfoundland and Labrador
Viviana Figueroa	Argentina	Indigenous Women Network on Biodiversity
Guadalupe Yesenia Hernández Márquez	Mexico	ILK focal point for IPBES in Mexico
Lynn Jacobs	Canada	Director of Environment Protection, Mohawk Council of Kahnawà:ke
Witness Kozanayi	Zimbabwe	University of Cape Town
Sherry Pictou	Canada	Mount Saint Vincent University
Lucy Mulenkei	Kenya	Executive Director, Indigenous Information Network
Lakpa Nuri Sherpa	Nepal	Asia Indigenous Peoples Pact
Polina Shulbaeva	Russia	Centre for Support of Indigenous Peoples of the North (CSIPN)
Hannah Kihalani Springer	USA	Kua'āina Ulu 'Auamo, Hawai'i
Nataliya Stryamets	Ukraine	Ca' Foscari University of Venice
Prasert Trakansuphakon	Thailand	Pgakenyaw Association for Sustainable Development
IPBES Sustainable Use Assessment		
Marla Emery	USA	Co-chair of the sustainable use assessment
Esther Katz	France	Co-chair of the ILK liaison group of the sustainable use assessment
Carlos Enrique Michaud Lopez	Peru	Chapter 1 of the sustainable use assessment
Helder Lima de Queiroz	Brazil	Chapter 3 of the sustainable use assessment
Patricia Shanley	USA	Chapter 4 of the sustainable use assessment
Ganesan Balachander	India	Chapter 4 of the sustainable use assessment
Denise Margaret Matias	Philippines	Chapter 5 of the sustainable use assessment
Shalini Dhyani	India	Chapter 6 of the sustainable use assessment
IPBES Secretariat		
Peter Bates	UK	Technical support unit for Indigenous and local knowledge

