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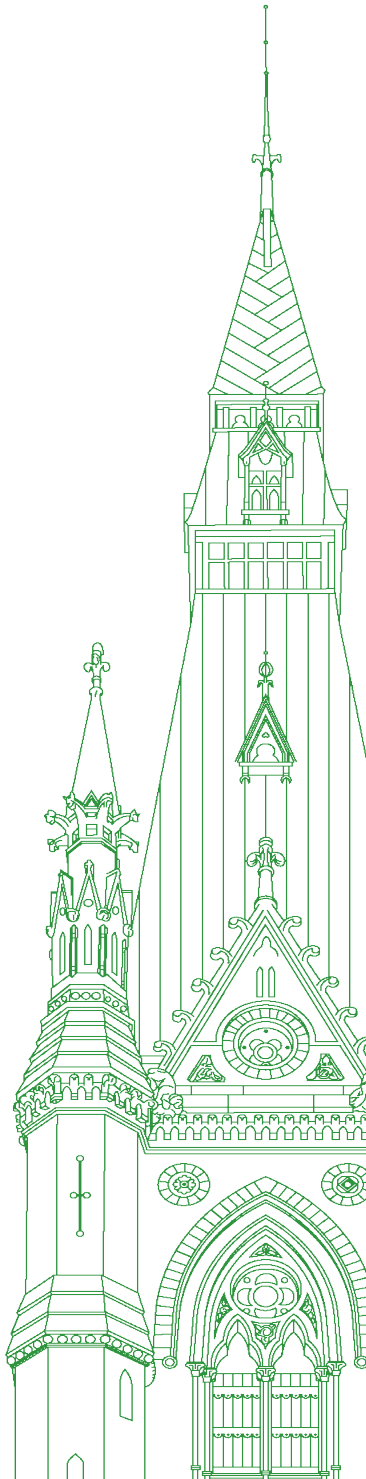

Chair: Mr. Lloyd Longfield

Standing Committee on Science and Research

Monday, November 27, 2023

● (1535)

[*English*]

The Chair (Mr. Lloyd Longfield (Guelph, Lib.)): I call the meeting to order.

Welcome to meeting number 67 of the Standing Committee on Science and Research.

Today's meeting is taking place in hybrid format, pursuant to the Standing Orders, and therefore members are attending in person in the room and remotely by using Zoom.

For those participating virtually, I'd like to outline a few rules.

You may speak in the official language of your choice. Interpretation services are available for the meeting. You can choose, at the bottom of your screen, to have either floor, English or French. If the interpretation is lost, please inform us, and we will make sure we have a brief suspension while we sort that out.

For members in person, proceed as you usually would when the whole committee is meeting in person in the committee room. Before speaking, please wait until I recognize you by name. If you're on video conference, click on the microphone icon to unmute yourself. In the room, make sure your mike and earpiece are separated so we don't have feedback and therefore cause injuries to our interpreters.

This is a reminder to all that all comments by members should come through the chair.

To get going, pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Monday, September 18, 2023, the committee resumes its study on the integration of indigenous traditional knowledge and science in government policy development.

It's now my pleasure to welcome Reverend Michael Lyons, priest in charge, as an individual.

We also have, from Mokwateh, Alexandra Cropp, senior manager of operations, on video conference. From the Nuclear Waste Management Organization, we have Laurie Swami, president and chief executive officer, by video conference, and from the Chacruna Institute for Psychedelic Plant Medicines, we have Joseph Mays, program director, indigenous reciprocity initiative of the Americas, by video conference.

Each witness will have a maximum of five minutes for their remarks, after which we'll go to our question round.

Mr. Lyons, you'll be up first, and I'll prompt you when you're getting close to the end by letting you know you have 30 seconds left.

Reverend Michael Lyons (Priest in Charge, As an Individual): Thank you, Mr. Chair.

The criminalization of substances such as LSD—lysergic acid diethylamide—peyote, psilocybin and the like in the last half century or so brought to an end a very fruitful period of research into the clinical and therapeutic benefits of these substances in both medical and psychiatric contexts.

I would contend, based on my research in light of this, that psychedelics and their criminalization flowed directly out of the countercultural movement experienced in the 1960s and 1970s across Canada and the United States, something that did not take into account the potential therapeutic benefits that were borne out by the data that informed my research and that built my thesis.

In light of this, I would suggest that these things need to be seen in context. Morphine in a medical context is an effective pain management tool, but heroin, the synthetic form of that same substance, has caused untold suffering and countless deaths.

Unlike opioids, psychedelics, as the data will show, do not have any addictive properties but do seem to have therapeutic benefit, and therefore I would suggest that it would be in the interest of the government to consider legislation that would loosen regulations around these substances in order to foster and enhance research into them and into their implementation as clinical components in our health care system.

In my research into LSD, I saw that the encountering of the divine suggested to Abram Hoffer and Humphry Osmond, among others, that these substances contain an ability for our health care model to bridge the gap between this realm and the next. In this life, this holistic model that people like Hoffer and Osmond discovered and researched in the 1950s and 1960s and those that have been further enhanced in the psychedelic renaissance over the last 30 years or so would suggest that there are inherent medical and clinical benefits, and the government would be well advised to invest time and legislative energy into this as opposed to the movement towards legalization and ready access to substances such as marijuana for recreational use.

In addition, psychedelic plants such as peyote in the Native American Church context, as well as ayahuasca in the context of the South American shamans, have been used by indigenous peoples around the world in the integration of their holistic model of health and healing, something that is not accounted for within the western medical paradigm. Therefore, I would suggest that the integration of these substances and therapies offers a wonderful opportunity for the federal government and Health Canada to begin to bridge that gap, as these substances dovetail so well with that more holistic integration and ways of knowing of our indigenous peoples.

Something that has been borne out in the research is that natural substances such as psilocybin have been shown in the last 30 years to show remarkable capacity to both ameliorate and have patients come to terms with anxieties around end of life, something that cannot necessarily be completely conceptualized within the concept of our western medical paradigm, which does not necessarily account for the spiritual as well as the physical.

As a final disclosure, I speak today not as a member of the Anglican Church of Canada or as a priest serving in the Diocese of Saskatchewan but rather as an individual speaking to my own academic research for my thesis, which was published in 2018.

Thank you.

● (1540)

The Chair: Thank you very much for your presentation.

We'll now go to Alexandra Cropp from Mokwateh.

Ms. Alexandra Cropp (Senior Manager of Operations, Mokwateh): Thank you, Mr. Chair.

My name is Alexandra Cropp. My given name is Banaso Ospo Ken Iskew—Thunder Bird Pipe Woman—from the Turtle Clan, and I am from the Norway House Cree Nation.

I come to you speaking from a policy perspective and speaking from my experience of working for my nation for over seven years, supporting new partnerships and programs and co-leading the development of the new Norway House Cree Nation Health Centre of Excellence. The centre has leveraged indigenous ways of being, science and knowledge, not only from its inception but also in putting many other indigenous and western medicines together, forming one holistic model of care.

Throughout my time with Norway House Cree Nation, I had the opportunity to partner with post-secondary institutions that were very keen to understand indigenous ways of being and to incorporate that knowledge and those systems into the curriculum, not only by supporting the development of indigenous ways of being within the faculty of nursing and the midwifery programs there but also by understanding the need for integration and including those rightful individuals at the table, ensuring they are able to speak to their lived experiences and support the development within that curriculum.

In 2022, I moved on to a new firm called Mokwateh. It's an indigenous-led consulting firm based out of Sand Point First Nation. It's led by JP Gladu and Max Skudra. JP Gladu, alongside Mark Little, former CEO of Suncor, championed a 5% federal procurement target for indigenous businesses, which was integral to ensuring that the federal government committed to that 5%.

In my role with Mokwateh, I was able to support two nations in their submissions to the United Nations Declaration on the Rights of Indigenous Peoples, ensuring we were engaging the nations at an early phase and understanding that it was done in a respectful and meaningful manner in order to have a better understanding of what their priorities were. We were able to incorporate that knowledge, their lived experiences and their day-to-day challenges within the current system by identifying the changes that needed to be made, while not only respecting the articulated actions within UNDRIP but identifying areas where indigenous practices and policies could be leveraged to better inform those laws.

During my time with my nation, I had the opportunity of collaborating on several innovative and forward-thinking initiatives that leveraged our indigenous ways, our science, and our knowledge in a way that catalyzed transformational changes within their health care system.

That unique work really stemmed from the importance in highlighting the necessity to include indigenous knowledge and traditions throughout each phase of that project, not only supporting the conception and planning but continuing through the construction phase and going forward to long-term sustainability.

This was done at an early stage, not only understanding the importance of community members and those individuals who are going to be touched by that project but also understanding who is going to sustain that in the future, following our seven generations, including our elders, youth, staff and, of course, chief and council.

Embodying our indigenous ways of being is so critical as we look to build policy development, not only when it's community-led but community-managed in a way that actually is respectful. It incorporates everything that needs to be done to support our ongoing generations as we grow into it.

While I may not have had the opportunity to grow up in my nation and may not be versed in the intricacies of our trap lines and historical sites, which are critical in any infrastructure planning, my experiences have taught me the most paramount lesson of all, which is to include our community members and the indigenous leaders from the beginning by facilitating an essential exchange of information, enhancing our understanding of the traditional territory, and intertwining our indigenous knowledge and science within that space.

This is such a learning journey. It respects and acknowledges the indispensable indigenous knowledge of our systems. It not only respects this valuable information but also legitimizes our sources of information, requiring a deep understanding of the historical and cultural ties indigenous peoples have with our land, resources and ecosystems.

Indigenous peoples embody a profound foresight in their decision-making, not merely planning for the immediate future but considering the impacts on the next seven generations, recognizing that today's choices will significantly shape the world for future leaders and guardians.

In the pursuit of establishing inclusive policy-making, it is crucial to ensure the active involvement of our indigenous communities from various regions within Canada.

It is essential to understand that indigenous peoples are diverse. Our knowledge systems differ significantly from one area to another, and while the process may not be flawless at its inception, nor will it satisfy all, it is imperative that we take deliberate steps to properly engage our indigenous peoples. We can ensure that resilient policies are built in partnership with indigenous peoples to better serve everyone within Canada.

Thank you, Mr. Chair.

● (1545)

The Chair: Thank you for your remarks. They were right on time.

Now we'd like to go to Laurie Swami from the Nuclear Waste Management Organization for five minutes.

Ms. Laurie Swami (President and Chief Executive Officer, Nuclear Waste Management Organization): Good afternoon, Mr. Chair, vice-chairs and members of the committee.

My name is Laurie Swami, and I am the president and CEO of the Nuclear Waste Management Organization, or the NWMO. It's an honour to appear before you today to discuss how the NWMO works to engage with indigenous communities and how we align with indigenous knowledge in the work we do.

I would like to begin by acknowledging we are meeting today on the traditional and unceded territory of the Algonquin Anishinabe people.

The NWMO's mandate is to implement Canada's plan for the long-term management of used nuclear fuel in a manner that protects both people and the environment. There is national and international scientific consensus that used nuclear fuel should be managed in a deep geologic repository in a location with a willing and informed host community. Our future site will safely store nuclear fuel for the long term, so it's important that the NWMO's siting decision is made based on the best available knowledge, including both western science and indigenous knowledge. Incorporating indigenous knowledge into our work is a humbling learning journey that requires non-indigenous decision-makers like me to ensure we are working with indigenous peoples in a way that honours and lifts this work up.

While we are still on a learning journey, there are a few lessons I want to share, based on our 20-plus years of work.

First, before we can create policies that incorporate indigenous knowledge, we must understand what indigenous knowledge is. This requires trust and good relationships. The starting place for NWMO's learning has been building relationships with indigenous communities and knowledge holders, who have been our incredible teachers in this process. We have a council of elders and youth that has acted as a crucial resource to help us approach our learning journey in the right way. Each year, the NWMO holds an indigenous knowledge and western science workshop with indigenous knowledge holders, elders, youth, scientists and industry professionals to deepen this work. These relationships have been the foundation on which we have built policy to incorporate and respect indigenous knowledge in our work.

Second, the lessons indigenous knowledge and western science offer us are complementary, yet we must embrace each as a fundamentally different way of knowing, seeing and moving through the world. While western knowledge gives us a framework for generating knowledge through experimentation, the knowledge it creates is sometimes not complete, is often inaccessible for indigenous peoples, and often places us alone as humans at the centre of its findings.

Western science and ways of knowing are one way of knowing, but they are not the only way of knowing. Indigenous knowledge offers a potentially diverse perspective in which humans are part of a greater relationship with the environment, a relationship that gives us insights into the workings of the world and the ethics of our decisions. Both ways of knowing provide us with valuable, complementary insights from different perspectives. When we consider decisions that have long-term impacts on the environment or communities, we need both of these perspectives.

Third, respecting indigenous knowledge requires us to understand systemic barriers that make policy and relationships difficult. Respecting indigenous knowledge requires that we always remain aware that western concepts of ownership and intellectual property don't align with indigenous knowledge, which is meant to be shared in the community and across generations. If we listen to indigenous knowledge holders and communities, we can overcome barriers by generating policies based on fairness and respect, ensuring that our relationships will last.

In closing, indigenous knowledge cannot be an afterthought when working on major projects like ours. However, policy-makers and decision-makers need to be aware of the importance that relationships and trust play in learning about and engaging with indigenous knowledge, and in generating policy on respectfully incorporating indigenous knowledge into decision-making.

I look forward to answering any specific questions on how the NWMO aligns with this important knowledge in our work.

Meegwetch.

● (1550)

The Chair: Wonderful. Thank you very much for your comments.

Now, for the next five minutes, we'll go to Joseph Mays from the Chacruna Institute for Psychedelic Plant Medicines.

Mr. Mays, the floor is yours.

Mr. Joseph Mays (Program Director, Indigenous Reciprocity Initiative of the Americas, The Chacruna Institute for Psychedelic Plant Medicines): I work at the intersection of traditional knowledge systems and biomedical science. I work for the Chacruna Institute, a non-profit bridging the worlds of clinical research and traditional plant medicines, which was founded by both an anthropologist and a clinical psychologist.

I work closely with over 30 indigenous groups in seven countries, supporting indigenous knowledge by nurturing ecological well-being. My partners are fighting for their land, water, food, medicine and cultural sovereignty, because without these basic material necessities, we can't have traditional knowledge systems.

As a practising scientist, I'm familiar with the tension between science and traditional knowledge. It's about not only integrating these systems but also understanding that indigenous science deserves to be taken seriously. What often sets indigenous knowledge apart is an emphasis on relationality and reciprocity, an understanding that our existence relies on the gifts of other beings.

Science, as conventionally practised, is an important tool for sustainability. Its explanatory power comes from an emphasis on reductionism and a strict separation of the scientist as observer from the observed—in this case, nature or the environment.

However, we also know that the observer only exists in, by and through a relationship with communities that produce our food and infrastructure and steward medicinal and ecological knowledge and the land and water that are the sources of all that we depend on. That relationship comes with certain obligations and responsibilities to be honoured.

Science reaps the benefits of ethno-pharmacological discoveries generated by indigenous people. Ecologists recognize the global correlation between traditional societies and biodiversity, since indigenous territories have more biodiversity than protected areas. We also know that encounters between Europeans and indigenous political philosophers contributed to the Enlightenment and the movement towards democracy that was spurred by thinkers like Rousseau and Voltaire.

My fellow panellist has already established the direct continuity between this promising new field of psychedelic-assisted therapy and indigenous traditional knowledge. He mentioned Abram Hoffer and Humphry Osmond, who only coined the term “psychedelic” after their experience sitting in a Native American Church teepee ceremony.

Whether working with plant-based compounds or synthetics, there's no escaping this relationship. This is all the more important to recognize in light of the profound gap between the promises of psychedelic medicine as defined by clinicians, researchers and investors and then the material needs of indigenous communities. That these empirically effective medicinal compounds—or land management strategies, or social governance—result from traditional knowledge systems that allow for gratitude towards the land and the recognition of personhood in the environment runs counter to the dominant assumptions of western science.

Western science explicitly separates values from outcomes and works from the basic assumption that there is no agency in nature. This works for certain questions, but it also creates an intellectual monoculture. For the socio-economic and environmental questions we face, we need a reorientation to focus on relationships. We need interdiscipline and pluralism, rather than monoculture. We need other ways of knowing.

This is what it means to use science and traditional knowledge together: to re-engage with relationality, subjectivity and agency to allow us to properly address ecological crises holistically and to question the unexamined assumptions of our institutions, recognizing where colonial mechanisms are still at play and how to guard against them.

Canada has already taken some strides in this through its Truth and Reconciliation Commission findings to confront these power dynamics. Recognizing that relationship with plant medicines and psychedelics is another move in this direction towards reconciliation.

Many of my indigenous partners are not interested in talking about traditional knowledge or psychedelic plants. They're interested in having their human rights and territories respected, even through the extension of human rights to forests, springs and rivers, such as with the rights of nature established by Ecuador's Constitutional Court.

Our program, the indigenous reciprocity initiative, is based on the recognition that a ground-up structure emphasizing local agency is the most meaningful way to support indigenous and local community autonomy and the most impactful way to support biodiversity. This is all best achieved by partnering with existing indigenous and local organizations on their terms, moving slowly and building trust.

If we can recognize and reorient ourselves toward the work of others, rather than taking over the spaces or processes of indigenous and local peoples, then we stand a better chance of achieving ecological well-being, a safe and healthy environment for current and future generations of humans and non-humans alike, and a diverse biosphere. Then, perhaps, we can come to see the relational world of diverse beings we inhabit. As we attempt to grapple with this dawning realization, we can move away from cynicism and helplessness and embody reciprocity in all that we do.

● (1555)

The Chair: Thank you very much.

Now we'll go to rounds of questions.

I'm looking at the time we started. With the indulgence of the committee and the witnesses, if we're able to go for a few minutes after the half hour, then we can try to get some full rounds in.

We also have next Monday. We've set up committee business in the second hour and we'll be able to handle some of the committee business then.

Hopefully, over the next couple of weeks, we can get some really good questions and answers on the floor from this study.

It's over to you, Ms. Rempel Garner, for your six minutes.

Hon. Michelle Rempel Garner (Calgary Nose Hill, CPC): Thank you, Chair, and thank you to the witnesses.

In this study, we are examining best practices on how to incorporate traditional knowledge into science. I find that even that mindset is very rigid, but in using the concept or trying to look at, for example, the use of psychedelics in medical therapy and psychotherapy as one example of how to do that, I'm wondering if I can explore with the witnesses a few assumptions—or maybe misassumptions—that our current systems utilize.

Mr. Mays, I think you touched on some of them.

Particularly when I look at the dialogue on government's approach to the regulation of substances or the use of substances like psilocybin, potentially in psychotherapy, first of all, there's a stigma about it, which is that somehow this couldn't be used. I do wonder if that's born partially out of racism, due to the fact that it has been incorporated in traditional practices over time.

Conversely, I also wonder, as western practices are seeking to incorporate the use of those substances in traditional practices, how we avoid cultural appropriation during that process as well. I think that as westerners we're often inclined just to think, "Okay, well, if we stick this thing into a pill and give it to somebody, it's going to work the same way as a full traditional ceremony."

Taking what you said up to a 100,000-foot view, and using psychedelics as an example of how to incorporate or how not to incorporate or to respect traditional knowledge in, let's say, western medicine, how can we avoid some of these things? What are the best practices? Can you point us to some of the work you've undertaken that the committee should perhaps look at for additional sources?

Mr. Joseph Mays: Thank you.

I think it's a good example that you chose—psilocybin—because one of the communities that I work with is the Mazatec community in the Sierra Mazateca in Mexico, who are recognized as being the people who introduced the west to psilocybin mushrooms.

Actually, I posed this question to some of my partners there: What does it mean to them that there are people taking synthetic psilocybin in a pill, and does it work the same way? One of the leaders I work with leads a community organization there, and he also leads traditional ceremonies. He doesn't say that it's not going work or that it's bad or wrong to do it that way but just sort of comments on what it is like for a Mazatec mushroom harvester. They go out on the mountainside and they pick wild psilocybin mushrooms, and those mushrooms are going to be coming from a different context, one that reflects all of the relationships that are in place on that mountainside where they're growing.

I think that with psychedelic medicine in general, if we look at psychedelics versus other herbal remedies, over three-quarters of our pharmaceuticals that come from plants originate in indigenous and traditional societies. How can we avoid appropriation or the commodification of these things in this case? I think that recognizing the roots of the practices and trying to get ahead of the alienation of these plants from their places of origin and from the knowledge systems that inform them is one way: just having a better education around the histories, the cultures and also the contemporary struggles of the people who stewarded those medicines and are still stewarding them. I think—

● (1600)

Hon. Michelle Rempel Garner: I'm sorry to interrupt you. I don't have a lot of time left, and I would like to build on your answer with an additional question and perhaps also direct it to Mr. Lyons.

I think that in the context of government in legislation, in corporate practice in western societies, in regulations, we often do shy away from talking about the spiritual components of traditional knowledge. I think you alluded to that a little bit with regard to the harvest practices, or the terroir practice, let's say, of a source.

How can we incorporate the spiritual aspect from traditional practices that's often lost or derided when considering incorporation of knowledge? How do we be respectful of that?

Perhaps I will give it to Mr. Lyons briefly. I think I only have a few seconds left.

The Chair: You have 30 seconds.

Rev. Michael Lyons: Certainly. In the context of my own research, the thing I found is that Christian clergy were brought into the context. That represents certain problems, of course, in terms of cultural appropriation and the like, but I think bringing in western professionals alongside indigenous healers in guiding that practice would be one way that we might consider the answering of that question.

The Chair: Great. Thank you very much. That's fascinating.

We'll go over to Mr. Lametti for six minutes, please.

Hon. David Lametti (LaSalle—Émard—Verdun, Lib.): Thanks, Mr. Chair.

Thank you to all the witnesses for being here today or being here virtually.

I would like to turn a bit of the discussion towards UNDRIP, which Alexandra Cropp mentioned. I think that the passage of UNDRIP and the working out intensively of an action plan over the following two years remain the highlight of my career.

How important, Ms. Cropp, do you think it is that not just the federal government but also the provinces and territories take on UNDRIP, as well as municipalities, first nations leadership groups and communities, etc.?

Ms. Alexandra Cropp: Thank you.

It's highly important. As we look at this and we explore these with our nations and with the federal government right now, we're making great recommendations. The recommendations are coming from community members through extensive engagement approaches and opportunities for members from diverse backgrounds to speak to some of the challenges that they've faced within the existing laws at the federal level. Let's focus there.

From there, indigenous people and those I have had an opportunity to speak to have felt that some consistent policy areas are meant to discriminate and that those policies are meant to hold them back. In doing so, they have failed to give them an opportunity to really take on, let's say, an economic development role within their nation, or really build on the education or build on the languages that are from their nation that should be passed on from their elders.

The larger thing as well is that we have done a great first step, of course, in engaging the indigenous peoples and having them work with their partners to make significant recommendations.

I think another component is that as we work to ensure that our indigenous peoples have a fair and equitable approach in the larger justice system at the federal level and the provincial level, they are not being labelled as something that will further prevent them from seeking employment in large projects that are typically in partnership with their nations or within their region.

As we look to understand how UNDRIP can meaningfully impact indigenous peoples within Canada and the scope within their respective regions, I think it's important that the federal government continue to move forward on these significant changes and significant opportunities for nations to speak their truth and to speak to the need to ensure that their knowledge is being respected, that their cultures are being respected, and that they are able to practise those traditional ceremonies.

I can't speak too much on psilocybin, but we need to ensure that our indigenous people have access to the traditional medicines that they can afford and that they can leverage their trapping lines.

I think the federal government has taken a great first step, but I also think we need to make sure that we're pulling in the provincial government, that we're pulling in those municipalities to ensure that we're all walking in step together while being led by our indigenous partners to support what can be and what will, hopefully, be one day.

● (1605)

Hon. David Lametti: Thank you. *Kinana'skomitin*.

I agree, I think, with every word you said, but I don't think I could have said it quite as elegantly as you did.

For you, Ms. Cropp, and for Ms. Swami, I struggled for my whole career as an intellectual property professor to try to understand how two paradigms could sit together: indigenous traditional knowledge—which, as you pointed out, Ms. Swami, is collectively held but also is embedded in culture and ritual—and an individualized system that is at the heart of, say, patents in the western intellectual property system.

You have traditional knowledge, which in theory can't be patented, and yet you can pull a string out of it and then patent that. That seems to be not only unfair in result, but disrespectful of indigenous traditional knowledge.

How do we square that? Can we square that? The two systems could exist quite well in isolation, but they don't exist in isolation. How do we bridge that?

Any thoughts are welcome.

Ms. Alexandra Cropp: I'll jump in and then hand it over to Ms. Swami.

I think there is a way we can move forward together. I think the first step, as one of the other witnesses identified, is building that trust and that relationship with those partners. For a long time, indigenous peoples have continued to give, and we don't see the reciprocity in that exchange. I think that as long as we ensure that any....

Let's say we're looking at indigenous medicines and finding ways to leverage those medicines within the pharmaceutical space. How are we going about it in a manner that, to that point, respects the spirituality and the culture that is associated with those rituals and also ensures that the indigenous peoples can trust that once they share this knowledge, it's not only going to be an influence and support to indigenous people, but also to other Canadians within the country? How can we ensure that we're giving back to the nation, that we're supporting it, and that we're investing in our capacity-building and education systems so that we can then ensure that those people have safe access to forage for the medicines and continue that practice, and then of course participate within the larger western pharmaceutical space?

Ms. Swami, I will hand it to you if you'd like.

Ms. Laurie Swami: Thank you very much. You said that quite well.

At the NWMO, we've had an indigenous knowledge policy since 2016. We were one of the first to implement something of that nature in North America.

Why I am really proud of that is that it embeds in our work that we will respect indigenous knowledge and the owners of that knowledge. It really is indigenous people's thoughts and their work and their contribution. We need to be very respectful if they gift it to us to allow us to use it in our work. We accept that gift, but we also respect that it is still theirs to protect and that we need to protect it with them.

I think you can do both. I think that when we're working in the communities we're working with, we're building a relationship with the people there. We want to build a trusting relationship and we look forward to that.

With that trust—

The Chair: Thank you.

I'm sorry; we've over time, but thank you for those thoughts. It looks like there are some solutions for the analysts to include for our study.

[*Translation*]

Mr. Blanchette-Joncas, you have the floor for six minutes.

Mr. Maxime Blanchette-Joncas (Rimouski-Neigette—Témiscouata—Les Basques, BQ): Thank you, Mr. Chair.

I would like to welcome the witnesses who are taking part in our study, and I thank them for being here.

My first questions are for Ms. Swami.

Ms. Swami, you emphasized the importance of respecting indigenous knowledge.

How do you define scientific knowledge or indigenous knowledge? How do you determine whether it's a belief or a knowledge?

● (1610)

[*English*]

Ms. Laurie Swami: Thank you for that question.

I think it is an indigenous knowledge system and a way of bringing knowledge to a situation. I think that western science offers one viewpoint, whereas indigenous knowledge actually makes it richer and makes it a better product at the end of the day as we align the two systems that we work in.

In my personal experience, I've found that it has really enhanced our thinking around the work we have in front of us.

In fact, I think of water, which is a very important system for indigenous people, and it is very important for the NWMO to protect it. We have worked very hard with indigenous people and with our western scientists to tell the story of the journey of water. We've taken it from an indigenous perspective and we've aligned that with our western way of understanding water and the knowledge that it holds. We've brought that together.

We had advice from our elders on how we could best incorporate those two ways of knowing. We've presented that to our communities and to our western scientists as a way of making sure that we're addressing water concerns the best way we can with the communities we're working with.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you, Ms. Swami.

I want to make sure I understand the mechanism for linking indigenous knowledge with western knowledge or western science. Sometimes, certain aspects can contradict each other.

What are you going to prioritize? What mechanisms do you use to make decisions if the subjects are contradictory?

[*English*]

Ms. Laurie Swami: From my perspective, we've learned from indigenous people. We have indigenous people working on staff who have brought us that knowledge through their way of knowing. We have western scientists who bring their perspective. It's enriched our ability to actually understand things. In fact, while some may think it's contradictory, as you learn more and more and you go into the depth of both systems, you can see how they complement each other. They in fact give us a better way of implementing projects as we go forward. It's not that they're contradictory; I think they actually bring two knowledge systems and two ways of thinking to bear on problems.

Take the problem of nuclear waste management. It's a generational project. Bringing those knowledge systems together is quite important and critical so that we're implementing this in the best way for people and the environment, and also from a safety perspective. To me it's very critical.

I don't think they're contradictory. I think they're just a necessary part of how we can do the best for everyone.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you, Ms. Swami.

In short, from your perspective or in your career, you have never seen contradictions between western science and indigenous knowledge.

Is that correct?

[*English*]

Ms. Laurie Swami: From my perspective, there are from time to time contradictions, but I think what has really helped is building those trusting relationships and taking the time to work in both systems for understanding on both sides. When you take that time and you really delve into the depth of the knowledge systems, you can see how they work together and how they are complementary.

I will give you an example. When we were selecting the area for investigation for a deep geological repository in northwestern Ontario, we had to do scientific studies. We had our staff walk the land, and our western scientists walked the land, but we had indigenous people with us. Both systems came together.

One would think that maybe they were contradictory, but they actually helped us to make a better decision at the end of the day. We could respect the cultural use of the land and we could find a place where western science came together. We had a much better decision at the end of the day, because those two systems, while they weren't perfectly aligned, worked together and found the optimum way of implementing our project.

● (1615)

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you very much.

I will now turn to Ms. Cropp.

Ms. Cropp, I'd like to ask you the same questions I asked Ms. Swami.

Have you ever faced contradictions between western science and indigenous knowledge? How were you able to make those comparisons?

What should be prioritized in public policy, in particular, in federal government policy?

[*English*]

The Chair: You have about 20 seconds.

Ms. Alexandra Cropp: Thank you.

Just to further echo Ms. Swami's comments, I think when you look at both systems, you want to look at them working together. It's a concern if we're just assuming that both would be contradictory. What I've experienced in a lot of my time, not only when I look at a capital build similar to what Ms. Swami mentioned, is that we're able to work with western engineers and scientists when we're doing our geographic, topographic and environmental site assessments by having our elders and leaders within the community physically walk alongside each other and ensuring that they're able to speak to their understanding of the space.

While a lot of the time in our indigenous ways of being we—

The Chair: I'm sorry, but I have to cut you off. You're about 20 seconds over. I did want to get that bridge to the indigenous in part of your answer.

When I do cut you off, you can give it to us in writing afterward. If more comes to you later, that would help as well.

Mr. Cannings, you have six minutes, please.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you.

Thank you to all for being here with us. It's hard to know where to start, in many cases, with this testimony that we're hearing today, but I'll start with Mr. Mays.

You talked about the importance of land and culture and how that meshes with indigenous knowledge. We're studying here how indigenous knowledge and science can mesh. You have been working in a part of the world, in Ecuador and Peru, that's one of the richest places in the world as far as indigenous culture and nature and biodiversity are concerned. There people are trying to merge indigenous cultures, and not just in science but also in law, giving nature certain rights under the law—through Pachamama in Ecuador's case, I think.

I'm wondering if you could maybe tell us how that is going and how indigenous knowledge comes into that legal system. How is it used in decisions there, if there are any cases?

Mr. Joseph Mays: Thank you.

I think this also touches on some of the previous questions. The rights of nature.... On the face of it, it seems to contradict western science to afford the rights of a person to something that we don't consider to have personhood, but if we look at the data, we can find examples of this resulting in more effective protection of a natural area.

One of our partners, the A'i Cofán in Ecuador, were using both systems in their recent project to map their territories. They used GIS technology to map their indigenous territory, which has been encompassed by a national park. They showed over the years that deforestation and encroachment by miners, poachers and loggers has continued throughout the park—except within the boundaries of their territory, where they monitor their land according to their own methods, which are based in their belief system. They were able to use this data and these maps in Quito in court to prove their case for more tenure over their land and for stronger protections for their resources and territory. This is just one example. I think you can find similar examples in other countries around the world.

For me, the biggest difference between the western approach and one that's often found in different indigenous communities is just the individual and reductionist point of view versus the community and the social point of view. This is also relevant to the use of psilocybin or psychedelic-assisted therapy in medicine. The western model is based on individual healing, versus social and community models. The idea is that we're part of a community that isn't just other human beings but also non-human beings, which would include the land and the different components of the land and other beings that we share the land with.

This holistic perspective actually has a better yield, and you'll find it reflected just by looking at environmental metrics like carbon storage or species richness. Certain things that are contradictory just on the face of it are actually not. The word for plant spirit, for example, in the Shuar language in Ecuador, actually can also be translated as the pith or the heartwood. It's the innermost part of a plant. There are many examples like this.

There's even the idea that there's an intelligence at the level of the resource that we're depending on. In therapy there's a new phenomenon called the “inner healing intelligence”. It's empirical and being used in MDMA-based and psilocybin-assisted therapies. On the surface it seems contradictory with western science, but as we learn more and more, we find that it's actually less contradictory than it seems. I think that also goes for environmental management and land management. There are many other examples.

● (1620)

Mr. Richard Cannings: I have one minute left.

I'd just like to turn this over to Ms. Cropp to comment on that, and also on this point that connections to the land, language and culture are at the base of holding that knowledge and how we can use that in our decisions.

Ms. Alexandra Cropp: I think there's definitely a way to move forward in that approach. Once again, it's just walking alongside each other and ensuring that not only are we being respectful but that we're also listening to our indigenous partners when they speak exactly to this, when they speak to the science that they've known that's been passed down from generation to generation. It's ensuring an understanding of the importance of our language. It's ensuring that all of these factors come into play, including when we're looking at incorporating this indigenous knowledge and science within policy development.

I think the biggest thing, of course, is just once again respecting this by ensuring that they're at the table. Otherwise, I think there's no way to move forward. You're not going to please everyone, but I think the first step is just ensuring that you're finding an approach that includes these ways of being and knowledge. From there, it's building on it. Ultimately, if we don't incorporate it, then it won't end up being included within new policies.

The Chair: That's great. Thank you.

Looking at the clock on the wall, I think we can do some shortened rounds here. We have three minutes for the Conservatives and the Liberals and then one and a half minutes for the Bloc and the NDP. We should be able to get close to being on time.

We'll start off with three minutes to Mr. Lobb.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks very much.

Thank you to all of the witnesses who are here today.

My question is for Laurie Swami.

Welcome.

First I'll say that I think the NWMO has probably set the bar high for any Canadian entity in consulting with indigenous Canadians. I think that's a fact.

My question to you is specifically on the integration of indigenous traditional knowledge. How important is it to the average everyday citizen who is living on the Saugeen Ojibway Nation, the SON? What is is the importance to that individual?

Ms. Laurie Swami: From the NWMO's perspective, our engagement program with indigenous communities is quite critical to the success of our work. Without their indigenous knowledge coming to bear on the project, we would not be successful. We recognized that from the get-go. We've always felt that way as we've implemented our work.

As for individuals within any community—like Saugeen First Nation, since we're working in the South Bruce area, their traditional territory—it's very important for them to feel and understand how we've incorporated that knowledge.

As I mentioned, in the north, we had cultural monitors. We also had them when we were borehole-drilling in southern Ontario. Saugeen Ojibway Nation members came to our site and were there with us to monitor our activities and advise us on things we needed to do, which was very important to us. As I've already talked about, the importance of water to the SON is quite critical. We recognize that and have been working very hard to understand their ways of thinking about that, in order to make sure we're addressing them in the work as we go forward.

It's very important that they can see this—that they can see themselves in the work we do, and that it's not just the NWMO's project. We implement this in partnership with the communities we work with, whether that's Saugeen Ojibway Nation or the Wabigoon Lake Ojibway Nation in the north. With either one, we want to be in partnership and have that input from the first nation, because we think we're better off having received that information.

● (1625)

Mr. Ben Lobb: A year and a half ago, there was a water walk done on the proposed site. Could you briefly say what impact that had on the SON community?

Ms. Laurie Swami: The water walk is a very important part of the work we do to recognize concerns among community members, make sure their voices are heard and make sure they feel their concerns are considered in the work we do. The water walk is one way for us to communicate with all of the community members in the area, and with the Municipality of South Bruce as well.

The Chair: Thank you.

I visited the Saugeen Ojibway Nation as well as the Chippewas of Nawash. I saw that great work going on with indigenous partnership.

We will go to Ms. Bradford for three minutes.

Ms. Valerie Bradford (Kitchener South—Hespeler, Lib.): Thank you, Mr. Chair.

Thank you to all the witnesses today for their fascinating testimony.

Ms. Swami, I also had the privilege of touring the Bruce nuclear plant. It's very impressive, as is the temporary long-term storage facility. Do you manage where the waste is stored now, while it's waiting to be permanently stored underground?

Ms. Laurie Swami: I'm not responsible for that. Ontario Power Generation manages the interim storage program, but we work together to make sure we understand what they're doing and they understand what we're doing.

Ms. Valerie Bradford: Right—it's obviously a very critical decision. The whole community is involved in that process, which is good.

Did the Nuclear Waste Management Organization make any changes to its plan for the long-term management of used nuclear fuel because of the knowledge acquired through indigenous partners and engagement?

Ms. Laurie Swami: There are several things we've taken into consideration.

As we work through our indigenous knowledge policy, one of the key considerations is this: We will make decisions with indigenous input. I already talked about how we selected the area in the northwest. That was very much a collaborative approach with the indigenous community, as well as the western science work. That's how we selected that particular area. I talked about water, which is an incredibly important concept for us. We've worked hard to make sure we're modifying our program to address any concerns the indigenous people in the area would have. It's fundamental.

As we move through each one of our stages, all our decisions are made with that consideration in mind. While it hasn't changed overall the use of a deep geological repository, it's certainly on every step along the path. We are taking into consideration indigenous knowledge and viewpoints so we can make the best decision on this project going forward.

Ms. Valerie Bradford: I know that because of the CANDU reactor process, we are able to make medical isotopes up at Bruce. There is indigenous involvement in that from the commercialization.

Will there be any economic opportunities for first nations communities to participate in the long-term storage process, since it's going to be on land they're involved with, as well?

The Chair: Answer very briefly, please.

Ms. Laurie Swami: Okay.

Absolutely we will be working in partnership. We will have agreements with the first nations to make sure there is equitable proportion of the projects.

Ms. Valerie Bradford: Thank you very much.

That's my time.

The Chair: Great. Thank you.

Mr. Blanchette-Joncas, you have one and a half minutes, please.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you very much, Mr. Chair.

Mr. Mays, given the nature of the institute you run and the products you market, have you encountered any laws that impede the implementation of your programs or the knowledge of indigenous peoples?

[*English*]

Mr. Joseph Mays: Thank you for your question.

My organization isn't involved in facilitating commercialization. Rather, it's facilitating conversations between the different stakeholders involved. We actually try to highlight with our publications, which are all free and accessible online, the work of indigenous scholars and activists and researchers and people from the global south.

I think in this conversation this is what's most interesting to me—the different ways we can find to protect indigenous knowledge and the plant medicines from being exploited, commodified or commercialized in a way that would result in a lack of fair compensation to the communities involved. Those are things like anti-patent strategies or liberatory licences or IP abolition or, in the context of the United States, to look at the different protections there are for religious use, which can sometimes trump commercial, clinical or medical contexts and also allow for a greater protection for a more diverse range of different cultures and communities that might be using these compounds.

● (1630)

The Chair: Great. Thank you.

We got in a lot in a minute and a half.

Go ahead, Mr. Cannings.

Mr. Richard Cannings: Thank you.

I'm going to turn to you, Ms. Cropp, and ask something maybe along those same lines.

In my previous life, I worked with indigenous communities on ecological and environmental planning issues. Some things were considered kind of proprietary in terms of indigenous knowledge. I'm just wondering how that is dealt with in projects that you've been involved with.

Ms. Alexandra Cropp: Thank you.

I think the most important thing to understand, of course, is that sometimes some of our knowledge has been taken and exploited in certain ways, so there are times when indigenous peoples are more protective of our science and our ways of being. As we move forward to ensure that this is done in a meaningful manner—in a partnership, if you will—I think the biggest thing is not assuming that both will be in contradiction but that both will complement each other.

Indigenous people may not have typical western data that supports our theories, our theses or our understanding of how the ecosystem is working or of how our lands are or of how the project may impact our water systems, but I think the most important thing when we're having those conversations is that everyone is together at the table, both indigenous peoples and our western scientists.

We need to understand that most times, our indigenous ways of being and our science are in fact complementary. We need to ensure that there's an opportunity to voice those areas so that both can see that when we're focusing on ensuring that we're keeping our lands safe, we're taking into consideration the next seven generations and ensuring that any economic development or any projects that are done on our lands are done in a manner that will be sustainable for not only the region but also the nation and Canadians as a whole.

It's also ensuring that the science is respected. Through that respect, there will be more of an opportunity for indigenous peoples to want to share that information and more of an opportunity for indigenous youth to see that there's an opportunity to further share our science and our knowledge as we grow into a better Canada.

The Chair: Wonderful.

This has been a terrific conversation. Thank you to the members for their questions, but thank you especially to our witnesses for being with us.

Reverend Michael Lyons, Alexandra Cropp, Laurie Swami and Joseph Mays, thank you for your participation in relation to this study of integrating indigenous traditional knowledge and science in government policy. If you have anything else that comes to mind, as I said, please do submit it in writing to the clerk. Thank you for being with us.

We will now suspend briefly while we set up our next panel. We will get audiovisual tests for our two online witnesses and make room for our witnesses in person.

Thank you.

● (1630)

_____(Pause)_____

● (1635)

The Chair: We're good to get started.

Thank you to the technicians for getting us a quick turnaround here.

Pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Monday, September 18, 2023, the committee continues its study of integration of indigenous traditional knowledge and science in government policy development.

It's now my pleasure to welcome our experts this afternoon.

From the University of Saskatchewan, we have Kevin Lewis, assistant professor. We also have in the room Michael DeGagné, president and chief executive officer of Indspire.

We have Jeannette Armstrong, associate professor, online as an individual. We also have, from the Dechinta Centre for Research and Learning, Kelsey Wrightson, who is the executive director.

I'm going to move Mr. Lewis up to the top of the order.

I understand you may have to leave early. You have five minutes. Please go ahead.

Dr. Kevin Lewis (Assistant Professor, University of Saskatchewan): [*Witness spoke in Plains Cree, interpreted as follows*:]

Greetings to my elected leaders, family and relations. I greet all of you. The Creator gifts us another day to speak on another important topic. Integrating indigenous knowledge and science in policy development couldn't come any sooner.

I bring greetings and acknowledgement of indigenous territories, *nahkowê-iyiniwak*, the Algonquin and Odawa territory.

One thing we have in mind that we wanted to come and speak about on behalf of our elders and our people is defining indigenous traditional knowledge, ITK. We need to explain indigenous traditional knowledge. The way we see it from the elders, it is the accumulated knowledge and practices developed by indigenous communities over generations.

It is just like the birch tree example. This tree can feed us. We can drink from this tree, and we can travel with canoes and we can create baskets to gather and harvest plants and medicines. It is also the strong emphasis on ITK's holistic and interconnected nature in biology, which is considered *wâhkôhtowin*, and the earth walk, which is *askiy pimohtêwin*.

The importance of ITK, from the elders' point of view, is highlighting the value of ITK in environmental management, sustainability and cultural preservation. The other thing we have to mention is how ITK contributes to resilience and adaptability in the face of climate change.

We know we have seen climate change already. There was a flood story and there were ice age stories. We sing about these times. We remember these through our storytelling ceremonies and ways of remembering. We recognize the gap here; there's a lot that western knowledge does not understand about ITK.

It is nice that we are also acknowledging the historical exclusion of ITK in government policies and decisions. We need the integration of ITK with western science to have the benefits of integration. Here, we have to discuss how integration enhances policy effectiveness and relevance, and we also have to emphasize the potential for innovative and holistic solutions. This is what we call political science.

The other things we wanted to showcase are the studies or examples of ITK and science being effectively integrated into government policies. We've been operating for over 21 years at kâniyâsihk Culture Camps, and we gathered four times in the past four years, talking about water and women, which is biology, *wâhkôhtowin*; water and medicine, which is chemistry; water and knowledge keepers, which is ethics and laws; and water and research, which is *nitawahtâwin*.

The other thing about our research on was that we landed the SSHRC grant—the Social Sciences and Humanities Research Council grant—for integrating indigenous science in education, language and land management resources. That highlighted positive outcomes and community involvement when we had these research people who were helping the elders.

Then what I wanted to do was say that if you have any questions, feel free to ask them.

● (1640)

The Chair: Thank you. We're just waiting for the translator.

Thank you for providing comments in Plains Cree, and thank you to our translator.

Now we'll go to Dr. Michael DeGagné from Indspire, please, for five minutes.

Dr. Michael DeGagné (President and Chief Executive Officer, Indspire): Thank you very much for the opportunity to say a few words. I hope to introduce something new to the conversation, as you've been listening to a number of witnesses over the course of the development of this process.

I'm with an organization called Indspire. We are an indigenous organization that funds indigenous college, university and trade students by raising money from the private sector and government. For 32 years now, we've been doing this kind of work—identifying excellence in our community—and we have funded some 125,000 students. After three decades of this, we know a bit about what students are moving towards, what they're studying in the post-secondary environment and how often they encounter indigenous knowledge over the course of that process.

As a current professor at the University of Toronto and a former university administrator, I think this process of somehow integrating western science and indigenous knowledge, of having them come together, is analogous to the decade-long struggle for institutions to “indigenize”, especially institutions of higher learning. I've been talking about indigenization now for quite some time, both in terms of how institutions can become more indigenous in practice and in terms of the people who attend them.

These institutions are very good at a couple of things.

The first thing they're very good at is attracting more people who are indigenous to what is essentially a western network of institutions. There has been a significant increase in indigenous people in the post-secondary environment. You'll also find that we are increasing, albeit slowly, the number of professors in the environment, but it's still at a very low number.

The other thing institutions are very good at is place-making in cultural supports. There are indigenous centres in every university and college. I think this is a very comfortable, tried and true way of expressing a desire to attract indigenous people and make them feel welcome in a western institution.

One thing we are not good at is integrating curricula. I think this is probably most germane to the work you're doing. What we are attempting to do, in my view, in the university and college system is to take what are essentially western methodologies in science programs and arts programs and sprinkle them with indigenous stories and points of view, rather than see a full coming together of two completely different systems.

I would emphasize three points in this process.

The first is the importance of partnership development versus integration into what is already a western process. I'm sure this is the number one point you've heard since you began to see witnesses. The idea here is not to simply take what you perceive to be—or what communities have given to you as—indigenous knowledge and make it fit within a western construct. What we're saying here is that there are two parallel lenses. It's not necessarily two different types of knowledge, at the end of the day, but two different lenses through which this knowledge is seen and developed. These two types of knowledge should form a partnership, rather than us sprinkling one amidst the other.

The second is institution building. There's an old saying that when indigenous people have troubles, we get programs, and when non-indigenous people have troubles, they get institutions. Institutions have a way of becoming places where we can gain a better understanding of fundamental knowledge and information and where we can create advocacy programs for that knowledge. I would recommend that if you are to look seriously at indigenous knowledges and where they stand within the scientific world, help create institutions run by and for indigenous people that allow our understanding of those indigenous knowledges to flourish.

Lastly, language—

The Chair: You have 10 seconds for the third point.

Dr. Michael DeGagné: I'll leave it there. My colleagues have done a better job than I have.

● (1645)

We describe the world through our language. Language programming, especially through artificial intelligence in this day and age, is absolutely critical to the process.

Thank you.

The Chair: Thank you very much.

Now we'll turn to Dr. Jeannette Armstrong, who's here as an individual. She comes to us via video conference.

Dr. Jeannette Armstrong (Associate Professor, As an Individual): Thank you very much. *Way̓ taliʔ x̌ast sx̌alx̌alt*. In my language, that's greetings and that means it's a really good day.

The main thrust of my presentation is really to talk about how the conflicts between the two knowledge systems were resolved through two projects I was involved in. While I realize the topic is much broader, I can only speak about and share examples from experiences I have been fortunate to be part of.

In the first example I'll draw from, I was co-principal investigator of a research project entitled “Enhancing Ecosystem Sustainability: A Syilx/Settler Science Collaboration”. The second example I draw from is as co-investigator in a current project entitled “Watershed Ecosystems Project”. Both of these projects are in the Okanagan territory in British Columbia.

I also am drawing from my experience in my 10-year role at UBC Okanagan as Canada research chair in Okanagan Syilx knowledge and philosophy. I'm a fluent speaker of my language and a knowledge keeper.

The two projects are University of British Columbia Okanagan Eminence research projects, which bring together Syilx traditional ecological knowledge and settler science. Both were partnered with the En'owkin Centre, which is the Syilx centre for higher learning that's mandated by the seven reserves of the Syilx Okanagan Nation.

The En'owkin traditional ecological team led in organizing and planning the activities based in selected areas of special environmental concern that were identified by the chiefs of the Okanagan Nation Alliance to reconcile food insecurity in the decline of cultural keystone species. I think it's really significant that they identified the areas for study and the purpose.

The En'owkin team brought knowledge keepers from the seven communities, the language speakers. My role on faculty at UBC Okanagan provided a way to cross-translate from my academic experience and as an insider to Syilx knowledge to clarify areas that are esoteric to each.

I would advise that doing so is an essential prerequisite in easing tensions between the two systems of knowledge. Without that, you're always going to be dominated by western science mechanisms, tools, methods and structures.

The Syilx concern in the decline of the grizzly bear relates in very specific ways to the declines of the black huckleberry in grizzly bear habitat corridors. Black huckleberry is one of their main food sources. That was one focus of research.

In that research, success was measured by the Syilx, in that now two communities with the En'owkin Centre team are in the process of identifying really specific priority corridor areas for indigenous protection of the huckleberry and the grizzly bear and the correlation between the two.

Putting back the Okanagan chinook salmon and the connection between the Okanagan chinook salmon's decline and the decline of the valley floor's black cottonwood riparian system—because much of the river has been channelled and straightened—was another focus. Of course, the chinook salmon is a keystone resource.

The success that's measured by the Syilx in the partnering work between the En'owkin Centre, the Okanagan Nation Alliance, the Penticton Indian Band and numerous government agencies was to create a chinook recovery pond and return a cottonwood flood plain section of the Okanagan River that had been channelled.

The teaming up of the Syilx, settler science researchers and community partners to develop a watershed ecosystem-based science and governance model is also the focus of a new interdisciplinary project that we are heading up as a part of the UBC Okanagan Eminence research cluster.

● (1650)

Success in that project is looking at an interdisciplinary process to develop a new governance model that would integrate not only non-indigenous community members and users but also the way science creates and predicts the cumulative effects in that watershed while including two of the indigenous communities that have jurisdiction in that area.

The main outcome of that project is significant to this presentation with respect to how the settler science tools were engaged to establish and expand on ongoing Syilx works already under way, thus envisioning new works in environmental protection and conservation.

● (1655)

The Chair: I'm sorry, but I have to say we can cut off there. If you can get anything else on that study to us, that would help the analysts with their work.

Thank you for your presentation.

Now we're going to go to Kelsey Wrightson, from the Dechinta Centre for Research and Learning, for five minutes.

Go ahead, please.

Dr. Kelsey Wrightson (Executive Director, Dechinta Centre for Research and Learning): Hello. My name is Kelsey Wrightson. I'm the executive director at Dechinta Centre for Research and Learning.

We are a land-based post-secondary research and education institution that's based here in Chief Drygeese territory in Yellowknife, in the Northwest Territories. We do programming across the north that centres indigenous knowledge and knowledge holders in all stages of education and our research.

Our team has the privilege of learning alongside indigenous elders while we create multi-generational learning spaces for accredited post-secondary programs and also deliver and partner on award-winning research that integrates indigenous knowledge and knowledge keepers.

As I consider the question of integrating traditional knowledge into the government policy that directly impacts community wellness, security and prosperity, I offer the following: We must commit now to mobilizing indigenous knowledge to better understand and face the challenges of today, and we must invest in the future generations of knowledge keepers to ensure we're able to meet the challenges at our doorstep.

Over the last few decades, there has been growing recognition of the importance of indigenous knowledge, or traditional knowledge, across many fields of study. It is clear that integrating indigenous knowledge into research practice leads to better research and better evidence-based policies. Whether it's changes in the ice, monitoring fish in indigenous-protected and -conserved areas or understanding different models of governance, there is a deep and often underutilized knowledge held by elders, the language and the lands of indigenous nations. Many researchers will tell you that working alongside indigenous knowledge holders on their own lands is the best and most effective way to conduct research.

Fundamental to the integration of indigenous knowledge into government policy is the respect for the distinctions-based approach to traditional knowledge, acknowledging the diversity of knowledge systems across regions and cultures. Government policy must make space for distinctions in policy development and implementation to be most effective.

Along with recognizing the importance of indigenous knowledge-informed research practice, we've also witnessed an increase in mechanisms and channels for integrating traditional knowledge into government policy. For example, tri-council funding agencies have a dedicated strategic plan to support indigenous research and research training in Canada, and indigenous-led non-profits are eligible to hold research grants.

The development of co-management boards and a commitment to the co-development of policies prior to implementation have been important shifts in the mechanisms through which indigenous knowledge and research inform policy. At Dechinta, we have the privilege of working with elders who have spent decades—a lifetime—on the land. Nevertheless, those most directly connected to the land and the changes that they see are rarely at the consultation and engagement tables.

Supporting community-engaged research in partnership is an important step to ensuring that those voices and perspectives are appropriately considered in policy-making that most affects them. However, I must restate that in addition to considering integrating traditional knowledge, there must also be a commitment to and investment in intergenerational learning, because knowledge is not static—it evolves and it grows—and only through creating relationships of learning and sharing indigenous knowledge and practices will we give ourselves, as a country, our best chance to tackle issues that threaten indigenous and northern communities today.

You cannot have strong co-management boards and you cannot have indigenous knowledge and western ways of knowing strengthening collective knowledge generation and you cannot implement policies that integrate traditional knowledge without also ensuring that this knowledge is generated and shared across generations by investing in the relationships that build the next generations of knowledge holders, of elders and of researchers.

Good research takes time, and research that includes indigenous knowledge can require even more attention and the building of strong relationships of trust from the outset. When done right, that yields better results and benefits for all communities.

Investing in the future of indigenous knowledge holders through indigenous and research-based organizations and institutions is our best chance to ensure that this knowledge is integrated into policies that will solve our most pervasive and rapidly accelerating issues across Canada.

Mahsi cho. Thank you very much.

● (1700)

The Chair: That was terrific, and you were right on time. Thank you.

It looks like we're going to have room for one six-minute round around the table.

We'll start off with Mr. Soroka. You have six minutes, please.

Mr. Gerald Soroka (Yellowhead, CPC): Thank you, Mr. Chair, and thank you to the witnesses for coming today.

I'll start off with Dr. Lewis. You were the first to speak. What are the key elements for effectively bridging indigenous knowledge and western science?

Dr. Kevin Lewis: [*Witness spoke in Plains Cree, interpreted as follows:*]

The first thing that I would say is getting along together and building good relationships with both sides—western and traditional knowledge. Both sides have a lot of knowledge. They have a lot to offer.

How we speak and how we acknowledge other people.... For example, the way to seek knowledge is by offering tobacco and lifting the pipe. In this way, the elders will talk about their knowledge that they have to offer.

Mr. Gerald Soroka: I'm sorry, but it's taking a little bit for translation to catch up.

What are some of the key challenges you have faced in building this bridge, and how were they overcome?

Dr. Kevin Lewis: [*Witness spoke in Plains Cree, interpreted as follows:*]

One thing I can say is that I have gone to university. In university I gained a lot of western knowledge. I went to a residential day school. From there I went to teach at the universities.

They way I see it, what we lack at university is the teaching of indigenous knowledge. There is no indigenous knowledge being taught to the first-year university students. Therefore, they don't get that knowledge from anybody.

However, once we start getting first nations indigenous knowledge, there will be lots to offer. They have a lot of knowledge—the ceremonies, the language and the history. They have a lot of history that they can bring to the universities.

Mr. Gerald Soroka: I'll move on. I'm trying to give each one of you a couple of questions.

Dr. Wrightson, how can policies ensure active indigenous involvement and research beyond just consultation?

Dr. Kelsey Wrightson: I think there are lots of barriers that indigenous institutions and indigenous governments are still facing when it comes to actually getting equitable access to the resources to conduct their own research. There are still barriers within the tri-council policy that limit the kinds of research grants and the eligible expenses that indigenous organizations and governments can use those research grants to fund.

There's a cycle that happens in which indigenous organizations are constantly being asked to partner or consult on research grants but are not allocated the kinds of stable resources that are necessary to really engage in those partnerships. It's really important to consider, in policy, how to effectively and stably fund indigenous organizations that are doing cutting-edge research so that it can be more than consultation and can be a deep partnership.

Mr. Gerald Soroka: Since you mentioned the tri-council, what changes do you propose to the tri-council funding policies to make them more accessible to indigenous people?

Dr. Kelsey Wrightson: I actually just applied for a tri-council grant, but unfortunately, because of the status of Dechinta and despite having many researchers who are working within our organization, we had to apply through a third party, which was a southern research institution, in order to actually access that granting opportunity.

One change I would like to see in the tri-council policy is consideration of indigenous non-profits and indigenous institutions that are not recognized as post-secondary institutions but are conducting some of the most meaningful and community-led research programs as eligible to hold some of those larger grants, which would enable us to have that more stable funding.

● (1705)

Mr. Gerald Soroka: What does meaningful indigenous involvement in research projects look like in practice, though?

Dr. Kelsey Wrightson: I think there are lots of really great examples of that. The minister's task force on northern post-secondary education and research, for example, called for more significant investment in researchers and research collaborators. What it means is that we don't have southern researchers, folks based in southern institutions, determining what research priorities are important and who is going to be at the table and then coming to indigenous organizations or indigenous people after those key objectives or research outcomes are already set. It's important to have indigenous folks engaged early in determining what research agendas are the most important.

That means starting to do that important work of actually building relationships before our research grants are even written. It means face-to-face time, lots of visits, lots of Zoom meetings and time to actually build relationships of trust between individuals and communities.

Mr. Gerald Soroka: I think that's very important, just talking about the trust and the relationships. That's probably the most important thing we need to deal with.

Unfortunately, I'm out of time, so I'll end there.

The Chair: That was a great line of questions, with great answers as well, so thank you both.

Dr. Jaczek, you have six minutes, please.

Hon. Helena Jaczek (Markham—Stouffville, Lib.): Thank you, Chair.

Thank you to all the witnesses for what you've had to tell us today.

Certainly I acknowledge the importance of indigenous knowledge. I will never forget that when I was a medical student in the sixties and seventies, I learned to my astonishment that oral contraceptives came from yams. That was based on observational knowledge in Mexico among the indigenous population there. As Mr. Lametti said, big pharma has quite often taken advantage of indigenous knowledge and appropriated it, changing a molecule here and there and patenting all sorts of medications.

Having said all that, like Mr. Soroka, I'm really interested in how we can achieve this type of partnership that has been talked about by so many of you.

Dr. DeGagné, you're recommending institutions potentially being run by indigenous groups and so on. Is there any model for that? Dr. Wrightson has talked a little bit about what she is doing up in the Northwest Territories. Are some provinces and territories moving in that direction?

Dr. Michael DeGagné: The first model that comes to mind is a program in law at the University of Victoria. Instead of taking what was the normal stream of law at UVic, they created a program that was uniquely indigenous. It's indigenous law.

You'd think, “Well, how different could that be?” Most of the difference is in methodology and how these things are taught. The organizers of the degree program, themselves indigenous, would go to indigenous communities, often to their own communities, and get a teaching. They would bring that teaching back to the school. That teaching was a story. They would then process that story with students: Here is the story. What do you think this means in terms of how it's interpreted? What do you think this means in terms of law and policy?

This isn't particularly siloed. It is a unique approach, a unique methodology that honours the ways in which knowledge has been transmitted in our communities for thousands of years. I think the only thing I can really caution—this has been cautioned many times, I'm sure—is to avoid starting this with a western lens and then seeking to add in where you can indigenous knowledge as it's understood through a western context.

Hon. Helena Jaczek: Are there other areas, in perhaps health sciences in particular, where you see that this kind of model could be used or where you have seen it used?

Dr. Michael DeGagné: Yes. I think it's often used in health communication. In indigenous communities where those cultural stories are still strong, there is a way to communicate health remedies through this same sort of story method: Here's a story, and between the two of us, can we seek to dialogue a little bit about how we understand this story and what it means for your health?

● (1710)

Hon. Helena Jaczek: In terms of the federal government, you would suggest that the tri-council should be actively looking at funding this type of knowledge-seeking. I think that speaks to what Dr. Wrightson was also saying. She had great difficulty in terms of her application and having to go through a southern institution. Perhaps there are some barriers there to accessing this type of funding.

Dr. Michael DeGagné: I think there are. First of all, the accreditation process for what constitutes a university was certainly one of the hurdles for Dr. Wrightson. Yes, I think there are opportunities here.

Hon. Helena Jaczek: Dr. Armstrong, you alluded to some of the difficulties you had in the studies you were involved in. Is there anything the federal government can do to enhance this concept of partnership—that the sharing has to occur right from the start and has to be the basis? Is there anything we can recommend?

Dr. Jeannette Armstrong: The reason I was mentioning the En’owkin Centre as an institute of higher learning is that it's mandated by the chiefs of the Okanagan to make sure that our knowledge and our language and our ways of knowing on the land are included in everything that they're working on, particularly the environment.

One of the issues that I was wanting to point out was that there does need to be recognition of the institutions of higher learning that are convened by the nations themselves, by the indigenous peoples themselves, in this work. That may be a provincial policy, but I think the federal government needs to really rethink what first nation lands and jurisdictions are about. I think that when we're talking about our language and our continued use of our land, we are talking about first nations that have been there for thousands of years and speak that language and are using it every year.

I'm in my seventies. I've been out harvesting; my brothers have been out hunting and fishing every year of their lives. That kind of in situ understanding and science of our land is not duplicated in universities or by any experts, even if they're indigenous externally. That really needs to be given policy.

The Chair: Very good. Thank you very much.

Go ahead, Mr. Blanchette-Joncas, for six minutes.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you very much, Mr. Chair.

I'd like to welcome the witnesses joining us for this second hour of the meeting.

My first question is for Mr. Lewis.

Mr. Lewis, I would like you to share your knowledge with us. Is there a universal definition of indigenous knowledge?

[*English*]

Dr. Kevin Lewis: [*Witness spoke in Plains Cree, interpreted as follows:*]

On indigenous knowledge, a lot of people on this land have different ideas, different systems of learning. Here we have the Nakota, the Cree, the Ojibwa, and here we have these other people who come from different countries; they all have different knowledge and they have different ways of transferring knowledge.

There is not only one way of learning. This is the first time that we've really sat together to discuss about indigenous knowledge, but as we keep going, we will continue to learn more because we all have different ways of knowing, different ways of transferring knowledge.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you, Mr. Lewis.

As you say, there is no universal definition. According to my research, spirituality and religious beliefs are always included.

How do we distinguish between knowledge and beliefs? Personally, I really believe that indigenous knowledge can contribute to science. How do we define what a belief is and what knowledge is?

● (1715)

[*English*]

Dr. Kevin Lewis: [*Witness spoke in Plains Cree, interpreted as follows:*]

Yes, you are correct. That's our way of thinking.

The other thing that I can say is the French, for example, the way I understand it—the people who are here—have a different way of learning, a different way of thinking in French. For example, we work with the Maori, for example, and the Hawaiians, and even the ones who we were talking about, people from Peru, and they are related to the land in their own world view. We each have our own world view. Our elders are crying for knowledge and they are crying to find ways to transfer the knowledge, the teachings, but then they are also afraid to transfer their knowledge because they don't want to let it go; they don't want to let it be stolen. This is where they are stuck.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you.

Mr. Lewis, Canada has laws. There are also Supreme Court judgments that define the concept of “knowledge”. We have the Mohan decision, which was made in 1994 and sets out the basis for defining “knowledge”.

Do you agree with the definition of “knowledge” in the Mohan decision?

[*English*]

Dr. Kevin Lewis: [*Witness spoke in Plains Cree, interpreted as follows:*]

Again, what I want to say is that if you look for examples, this is the first time that we've actually had Cree being spoken in this House of Commons. This is where we are slowly getting used to hearing the Cree language being spoken. If Cree is being heard and spoken here, then this is where it would entice the elders and the researchers who come and work together, and they can express their concern and all their native teachings.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you.

Mr. DeGagné, how do you differentiate between “knowledge” and “belief”? I referred earlier to the Mohan decision, put forward in 1994, which defines the concept of “knowledge”.

Do you agree with that Supreme Court decision?

[*English*]

Dr. Michael DeGagné: I'm sorry. It was a little bit too low. However, if it's in the same sort of vein, maybe I can go back to how I would interpret both of these types of knowledge.

At the heart of western science is the scientific method. The scientific method proposes a hypothesis and it suggests a firm methodology. Then it tries very much to isolate, to the best it can, a cause and an effect: “We did this, and therefore this happened.” By definition, then, the scientific method is a narrowing of our knowledge so that we understand one thing very well.

Indigenous knowledge, generally, if you can say it this way, is exactly the opposite: It proposes a look at a system and how everything is in relation to other things in the system. Instead of isolating individual actions and reactions, it looks at a broader relationship among elements, either in the natural world or wherever.

That's how I interpret these differences. These are not mutually exclusive concepts; they both can aid each other. I think that's highly advisable as part of this process.

The Chair: That's fascinating. I just love this conversation.

Thank you so much, both of you and all of you.

Mr. Cannings, you have six minutes, please.

Mr. Richard Cannings: Thank you all for being here.

I'm going to turn to Jeanette Armstrong, because she's a friend and colleague.

I must admit, Jeanette, that when I suggested to the committee that we take on this study, I was thinking of you. I'm so glad that you could join us here with the rest of the witnesses today.

You mentioned a couple of projects that you're doing through your chair at UBC Okanagan. I know another post you have that is at that intersection of indigenous knowledge and settler science. It's on COSEWIC, the Committee on the Status of Endangered Wildlife in Canada. It is meeting here in Ottawa this week, so it's on the top of my mind.

Can you talk about your role in COSEWIC and how you think that's going? How is indigenous knowledge used there, and do you think there are ways it could be better integrated with science?

● (1720)

Dr. Jeannette Armstrong: My role in COSEWIC is on the aboriginal traditional knowledge subcommittee. There are two of us who were identified by the Assembly of First Nations to be put forward to the minister for appointments. I was appointed by the Minister of Environment. I have served at least three terms on the committee.

One of the answers, I think, to that question is what that committee is grappling with. You have a committee of 12 people, basically, who are appointed by the five major aboriginal organizations that are recognized in Canada. They are there to assist with providing the best ATK, or the best traditional knowledge, to the status listing process. The problem that we have is that every indigenous area, landscape, terrain and water is different. The people who live those areas approach knowledge production differently.

I use the words “indigenous science” to differentiate it from traditional knowledge and belief. The science of indigenous people is not only precise and factual but has been built up about that land they specifically have occupied and lived on for thousands of years and have passed on in their families as hunters, harvesters, berry pickers or whatever. The problem is that what government policy seems to want is some kind of monopolicy to cover so many different ways of approaching that science knowledge from indigenous people and working with it in terms of using it, for instance, in the SARA listing, or used in recovery or in co-management or in other areas.

Unless that policy is changed in terms of finding ways to specifically develop principles that understand and work with people who are deeply embedded in situ on their lands, you're always going to get something else. You're going to get something that's externalized and something that fits into western science modalities. That is what I see as a real need for a group of people who are from first nations living in situ that can create and set down principles that can help in policy development that can really elevate and change the way that the tension between the two sciences is reconciled.

Mr. Richard Cannings: *Lim'limpt*. I would just like to turn back to the En'owkin Centre that you referenced a couple of times. I know that the En'owkin Centre has been doing conservation projects for many years now with western scientists, with settler scientists. I'm wondering if you could comment on that process, which presumably is driven by the En'owkin Centre. How does it differ perhaps from other projects that you've encountered?

Dr. Jeannette Armstrong: The reason I started with that was to really underpin the idea that knowledge institutions are convened and developed by first nations people who are living in situ on their lands and working on various ways to make sure that their lands are healthy and producing the resources that they have a right to. That means working with the the seven chiefs and councils of the Okanagan nation.

In fact, it means collaborating with the Colville Confederated Tribes, which is the other half of the Okanagan nation in the state of Washington, to look at how we fix the river. How do we put the salmon that have been gone for 52 years back into the river? The Columbia River is dammed. There are 14 dams south of us in Washington state. How do we do that?

Our work with the En'owkin Centre and the chiefs of the nation in collaboration with all these agencies has been able to do that. That's because it's led by our nation; it's led by people. The science tools are brought in to support that, not the other way around. It's not researchers coming in and saying, ”We want to do this”; it's the chiefs saying, “This is what we want to do. Here are the tools we need”. If they don't know what the tools are, they call on people like me, who are embedded in the university system, to be able to translate what can help, what could help, and how that collaboration.... That model of collaborating with someone in between who can speak the language and who is part of that land needs to be part of the policy. That's what En'owkin Centre does with its tech team.

● (1725)

The Chair: Thank you.

Unfortunately, we're at the end of this session.

Speaking of speaking the language, welcome to Marilyn Gladu, who is part of the committee today. She was the first to ask a Cree question of Robert-Falcon Ouellette when this was first coming through the House of Commons. It's great to have you with us, Marilyn.

Dr. Lewis, it was wonderful to hear the Cree language spoken today.

Dr. Armstrong, Dr. Wrightson, Dr. DeGagné and Dr. Lewis, thank you all for being here, for your participation in this study and for your testimony in this very important study that we've undertaken.

Thank you to Mr. Cannings for bringing this forward for us to investigate.

If there is any additional information to share, please do that through the clerk.

Our next meeting will be on Wednesday, November 29, with regard to the study of the integration of indigenous traditional knowledge in science and government policy.

If it's the will of the committee, we can adjourn. I don't see any complaints.

Thank you again for your participation.

The meeting is adjourned.