INTOSAI
Working Group
on Environmental
Auditing

Auditing the Arctic

Environmental Change and Indigenous Knowledge

INTOSAI WGEA SEMINAR SUMMARIES
1/2024

Contents

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Foreword

The SAIs are government external auditors and hold governments accountable for public spending. INTOSAI WGEA focuses on facilitating good and effective governance in the environmental and climate policy fields. With 86 member SAIs as of January 2024, the WGEA has supported SAIs around the world for over 30 years already. One of the most visible opportunities for peer exchange have been the Assemblies taking place every 1.5 years.

Since 2020, when the National Audit Office of Finland began its Chairmanship of the INTOSAI WGEA, special attention has been paid to combining the locations of the Assemblies and locally relevant environmental topics. Thus, the theme of the Assembly is connected to the meeting location providing a deeper context for professional exchange.

For the 20th Assembly (broadcasted exceptionally online from Helsinki due to the pandemic situation in 2021), circular economy was chosen as the main topic. This was due to Finland being one of the key developers of the concept. The 21st hybrid Assembly in 2022 took place in the world's lowest lying country of Maldives, therefore focusing on climate resilience. It is both a pressing local issue but increasingly a global concern.

This year we were finally able to hold a fully in-person Assembly in Rovaniemi, Finland. Due to the location at the Arctic Circle, it was clear that the Assembly will address climate-induced environmental changes taking place in the Arctic as the main topic. According to the experts, what happens in the Arctic, also affects the rest of the world. Regional specificities can therefore help to understand the interconnectedness of global developments.

As the Secretariat continued to plan the Assembly, another place-specific topic, Indigenous knowledge, was integrated into the programme. Rovaniemi is located in Lapland, which is also the home of the Sámi people, the only Indigenous people in Europe. The Sámi are holders of Indigenous knowledge, as are various other Indigenous peoples all over the world. Even in the context of countries with no Indigenous people, the topic can help to direct attention to local groups, differences, and equalities in the spirit of Agenda 2030 and the principle of leaving no one behind. From an environmental perspective, it is clear that Indigenous knowledge can provide extremely valuable information on how to cope with the changing environment.

This special report is based on the first day of the 22nd INTOSAI WGEA Assembly, held on 22nd of January 2024 in Rovaniemi, Finland. The report summarizes the main discussions and key messages from the meeting, supported by science and policy experts as well as auditors. We hope this report will inspire auditors and other readers alike.

Helsinki, 4 April 2024

Dr Sami Yläoutinen
Chair of INTOSAI WGEA


22nd INTOSAI WGEA Assembly
ROVANIEMI 2024
22nd INTOSAI WGEA Assembly
ROVANIEMI 2024

1 Focus on the Arctic

The Arctic is currently a focus of interest for many reasons. In the opening session of the Assembly, Ambassador for Arctic Affairs at the Ministry for Foreign Affairs of Finland **Petteri Vuorimäki** identified several reasons for increasing global interest in the circumpolar Arctic: geopolitics and power game, environmental protection and climate change, sustainable development, natural resources (hydrocarbons and rare earth minerals), opening sea lanes due to receding ice, business opportunities, and scientific aspects of Arctic cooperation. Vuorimäki compared the situation in the Arctic to accounting: *"it must be balanced."*

Petteri Vuorimäki

Vuorimäki argued that while crises related to security threats, wars, conflicts, hybrid warfare require attention, the climate change, and environmental changes are the "biggest threat that the humankind is confronted with". According to science magazine *Global Overview*, nine out of 16 global tipping points are located in the circumpolar Arctic.

Citing Finland's Minister for Foreign Affairs, Elina Valtonen's speech at the Arctic Spirit Symposium, Vuorimäki argued that "the Arctic is a priority for Finland". The Strategy for Arctic Policy from 2021 defines the whole of Finland as an Arctic area. Other priorities mentioned are climate change mitigation and adaptation, people, their welfare and the Sámi people, Arctic knowledge know-how, business research, infrastructure, and logistics. Furthermore, Finland has been advocating for increased involvement of the EU in the Arctic.

Vuorimäki also expressed sympathy for the Sámi people who are at a difficult position trying to secure their traditions and livelihoods as the Arctic receives increasing international attention. A good example of integrating Indigenous people is the Arctic Council, which is at the heart of cooperation circumpolar Arctic cooperation. It has eight member states (Canada, Denmark, Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States) and 38 observers as well as prospective member states. The situation is internationally unique as Indigenous peoples sit at every level of the Arctic Council instead of, for example, forming a separate working group. The Council has also increased global awareness of the climate change in the Arctic. The work of the Arctic Council will be discussed more in Senior Researcher **Sanna Kopra**'s keynote speech (see p. 12).

Impact of climate change on the Sámi

The first Vice President of the Sámi Parliament in Finland, **Anni Koivisto** emphasised the value of indigenous people and indigenous knowledge in navigating the pressing issues in the region. For the Sámi, environmental changes are lived realities that directly impact their daily lives, culture, and livelihoods. Seasonal activities, such as reindeer herding, fishing, hunting, and gathering practices are deeply rooted in an intimate understanding of the Arctic's rhythm. However, Koivisto explains that the once reliable cues from the environment guiding the seasonal activities of the Sámi people are becoming less predictable.

In addition to climate change, economic exploitation threatens the ecological integrity of the Sámi homelands. Thus, in addressing environmental change, it is crucial to find a balance that preserves both the environment and the Sámi ways of life.

"The once reliable cues from the environment guiding us in our seasonal activities are becoming less predictable."

Anni Koivisto

Why should governments incorporate and integrate Indigenous knowledge into climate and environmental policies?

According to Koivisto, Indigenous knowledge is firstly, founded on centuries of wisdom and deep understanding of local ecosystems, biodiversity, and sustainable resource management. Secondly, Indigenous knowledge often offers innovative, sustainable solutions to complex challenges, which can lead to more resilient and adaptable approaches, especially when facing environmental and global challenges, such as the climate change. Finally, Indigenous knowledge is based on time-tested practices that have sustained for centuries.

An example of integrating Indigenous knowledge in environmental policies is the Sámi Climate Council (see professor **Klemetti Näkkäläjärvi'**s presentation, p. 29), which provides a platform for Sámi elders, experts, and community members to contribute their unique insights into the formulation of climate policies.

Koivisto argued that merely hearing Indigenous peoples is not sufficient, but they must also be considered in decision making. Incorporating Indigenous knowledge into policymaking not only respects the rights and perspectives of Indigenous peoples but also creates diverse time-tested and effective culturally sensitive and sustainable governance and strategies in when facing pressing social and environmental issues.

Koivisto commended the Assembly as a testament of the strength of international cooperating bringing together diverse perspectives and expertise. This collaborative spirit is crucial for tackling complex issues, such as those impacting the Arctic and its people.

Global issues manifest themselves on local level

Research Director of Finnish Environment Institute**, Eeva Primmer** argued that global issues manifest themselves and are experienced in local settings. The Finnish Environment Institute studies the connections that global crises have with social, technical, and economic systems. The warming of the Arctic at a rate four times faster than global average temperature change is local, regional, and global challenge.

Primmer highlights the role of research in understanding environmental problems. Assessments, panels and working groups then synthetise the knowledge produced by research seeking to consolidate scientifically sound key messages into a more digestible format. The purpose is to alarm in a way that empowers to act.

Eeva Primmer

Primmer argued that indigenous knowledge and experiential knowledge aids in the developing sustainable solutions and generating experiential connections to the environment. Merely recognising environmental trends is not sufficient, but a variety of knowledge sources, understanding of entire systems and collaborative governance of these systems is crucial for a sustainable world.

Need for effective policy solutions

In the last speech of the Opening session, a member of the European Court of Auditors, Hannu Takkula highlighted the importance of cost-effective policy solutions in the fight against climate change. The most important part of the WGEA is the exchange of experiences of cost-effective solutions to various environmental policies from water conservation to biodiversity, climate change, and natural resources because resolving these issues involves huge costs. Governments around the world are also struggling with budget deficits while also trying to tackle other crises, such as soaring healthcare expenses, higher interest rates, or assistance to counteract Russian aggressions on Ukraine.

In discussing the ECA's audits on climate change, Takkula described the need for effective funding solutions on a global scale. For example, in 2007, the EU launched the Global Climate Alliance to support developing countries impacted by climate change. Most EU delegations or countries involved expected the support to evolve from capacity-building to concrete adaptation measures directly benefiting the populations of the countries most affected by climate change. However, although the capacity building group had offered important support over the years, the ECA found that the initiative resembled a capacity-building tool, but it had not succeeded in developing from capacity-building and pilot activities into scaled up actions.

Hannu Takkula

2 Arctic Environmental Change

2.1. Cold Climate Facts

Petteri Taalas from the Finnish Meteorological Institute (FMI) set the stage in the thematic session on Arctic Environmental Change. Taalas is the former Secretary-General of the World Meteorological Organization (WMO), which is the host agency of the Intergovernmental Panel on Climate Change (IPCC). Taalas holds a substantial record of climate expertise and provided the Assembly with insights to global and arctic perspectives on climate change.

Petteri Taalas

Greenhouse gas concentrations

Greenhouse gas concentrations in the atmosphere have been growing yearly, setting new records of levels of concentrations. The trend of growing levels of carbon dioxide, methane and nitrous oxide in the atmosphere constitutes a global trend, due to these gases having a long lifetime. According to the WMO Greenhouse Gas Bulletin[1], atmospheric carbon dioxide (CO_2), making up about two-thirds of the total greenhouse gas emissions, reached 150% compared to the pre-industrial times. According to IPCC's Climate Change 2023 Synthesis Report[2], a great share of CO_2 emissions originate from fossil fuels combustion and industrial processes, largely used in big economies in Europe, North America, and Asia. Methane emissions constitute one-third of the total emissions, originating from tropical wetlands, cattle, and rice paddies. Taalas also referred to the deforestation of tropical forests as accounting for greenhouse gas emissions in the atmosphere.

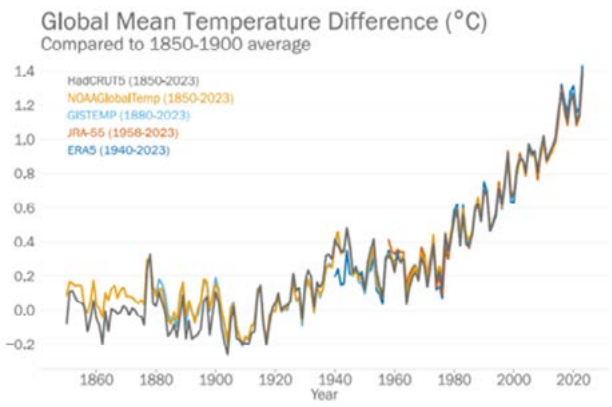
Taalas noted that 2023 was the warmest year on record, as have the past nine years (2015-2023). Global temperatures continue to verge the increase of 1.5°C, which is the low limit of the Paris Agreement, the legally binding international treaty on climate change. Global temperatures are likely to exceed the limit of 1.5°C at least temporarily, due to the

[1] WMO (2023, p. 4). WMO Greenhouse Gas Bulletin: The State of Greenhouse Gases in the Atmosphere Based on Global Observations through 2022. No.19.

[2] IPCC (2023, p. 4). Climate Change 2023: Synthesis Report. Summary for Policymakers.

Increases of extreme weather conditions (heat waves, flooding and drought) and ocean heat content

An increase of heatwaves has been a global trend, affecting most areas worldwide. Approximately half of the areas in the world have experienced an increase in flooding, and one-third has been exposed to drought. Some areas have been exposed to multiple weather conditions, for example Western Europe, that has seen both periods of flooding and drought. About 90% of the stored energy in the Earth system has been stored in the oceans. The sea water at all depths is warming, which is reflected in continuing sea level rising. Additionally, it increases the occurrence of tropical storms in wider areas than before, while also increasing.



Global Mean Temperature Difference

Melting of sea ice and glaciers

According to Taalas, the Arctic is experiencing rapid changes in its climate at a speed of double the global average. More than 70% of the arctic sea ice mass has already melted, with the ice-covered area thinning continuously. The changes in the Arctic climate have an impact on the weather patterns not only in the Arctic, but elsewhere in the Northern Hemisphere. This has led to an increase of stagnant weather patterns. This means that the more persistent high-pressure systems, meaning heat waves and drought in the summer and cold spells in the winter, can be seen at lower latitudes than before.

In relation to the melting of arctic sea ice, Taalas introduced a new environmental feature: melting of the Antarctic Sea ice and the glacier of Antarctica. The complete melting of the Antarctic glacier would mean a 60-meter sea level rise. The second biggest glacier (after Antarctica) in the world is the Greenland glacier, which has also reached a great melt extent. The melting of the Greenland glacier would constitute about 7 meters of sea level rise. The melting of the sea ice and glaciers is a direct result of the high concentrations of carbon dioxide in the atmosphere. With the levels of the concentrations of greenhouse gases being so high, the melting of glaciers and sea ice cannot be stopped in the next centuries, or even thousands of years.

The melting of glaciers accounts for rapid sea level rise. According to Taalas, recent figures indicating sea level rise have been between 4-5mm per year. As the yearly rise used to be about 2mm, these numbers have doubled over the past few decades. The FMI expects sea level rise per century to be approximately 0.5-1 meters. However, according to latest studies by NASA, there is even a risk of a 10-meter sea level rise by 2300.

Future soil moisture and precipitation

In addition to the melting of Arctic and Antarctic glaciers, mountain glaciers have been melting rapidly. It is expected that most mountain glaciers have melted by the end of this century, and combined with population growth, this creates challenges for freshwater resources worldwide. The most affected areas include Africa, the Middle East, and some parts of Asia.

Impacts of climate change on vegetation and agricultural capacity also constitute a challenge. Changes in soil moisture have emerged especially in areas that are warming rapidly, namely North America, South America, the Mediterranean region, Southern Africa, Eastern Asia, and Australia. These regions will face changes with soil moisture, which means agricultural challenges. Some regions, like high latitude areas and tropical parts of Africa are expected to see more rainfall and more humidity in the future.

Possible future scenarios and climate change mitigation

According to IPCC's Climate Change 2023 Synthesis Report (2023, p. 19), the amount of carbon emissions we release until we achieve net-zero targets, along with reducing greenhouse gas emissions in the next decade, will play a big role in deciding if we can limit global warming to either 1.5°C or 2°C. Taalas proposes that the so-called very low scenario of 1.5°C or low scenario of 2°C warming can be achieved, if collective efforts to reduce the warming are successful. However, currently the most likely scenario to be realized seems to be the intermediate scale of warming, about 2.5 to 3°C.

The current challenge with climate change mitigation is energy sources. About 85% of the energy used for industry, energy production and transportation are based on fossil fuels, namely coal, oil, and natural gas. Only the remaining 15% is based on climate-friendly solutions, such as nuclear energy, hydropower, and renewable energy. Taalas underlined that these numbers need to be reversed in order for climate mitigation to prove successful in the coming decades.

"We have the means to be successful, but we have to speed up our mitigation efforts."

Taalas finished off with some words of hope. The evolution of renewable energy (solar and wind energy) prices has seen a downward trend, dropping below the prices of energy produced with fossil fuels. This has accounted for a boom in building solar and wind energy infrastructure. Additionally, the prices of batteries and electric vehicles have been decreasing, and new technologies are coming on the market. As a final note, Taalas presented the vision of the International Energy Agency of increasing the building of renewable energy, meaning solar, wind, biomass, modern bio energy and hydropower, while also increasing carbon capture when using fossil fuels. According to Taalas, the International Energy Agency remains optimistic that global warming will not hit the suspected 3°C temperature increase, but something lower.

2.2. Impacts of Climate Change in Arctic Enviroment

Leena Ylä-Mononen is the Executive Director of the European Environment Agency. Ylä-Mononen attended through a pre-recorded video, providing perspectives on the Arctic and the effects of climate change on the region from a European perspective.

In reference to what Taalas argued, Ylä-Mononen underscored that global temperatures will continue to rise in the coming years. Ylä-Mononen tackled further, what implications this has for the Arctic. Additionally, Ylä-Mononen highlighted the important constructive role that Europe, the EU and its Arctic partners have across multiple areas in the Arctic, such as economic activities, socio-economic challenges, and the mitigation of environmental impacts.

Leena Ylä-Mononen

Indicators such as temperature, precipitation, snow cover, ice thickness and extent in addition to permafrost thaw, already show rapid and widespread changes in the Arctic region. The Arctic is experiencing an increasing amount of extreme weather events, such as sea ice loss, melting of the Greenland ice sheet and wildfires. Ylä-Mononen explained that the Arctic is warming about three times faster than the global average. Despite the increasing temperatures in the region, cold spells (especially prolonged cold spells) are becoming rarer and rarer. The effects of the changes in the Arctic are also reflected in other regions. These effects include, for example, global sea level rise, possible changes in ocean circulation, the potential for feedback loops that affect atmospheric greenhouse gas concentrations, and opportunities and risks associated with the opening of new shipping lanes and improved access to fossil fuels and mineral reserves.

Ylä-Mononen refers to the latest projections of future average mean surface temperatures in the Arctic, that will rise from 3.3°C to 10°C above the average from 1985-2014, by the end of the century. This will, among other things, contribute to excessive melting of sea ice in the Arctic. Reduced sea ice and snow cover have a range of impacts, of which Ylä-Mononen names just a few:

- increased amount of open water that absorbs more heat (leading to further loss of ice) and atmospheric CO_2 (leading to increased ocean acidification)
- bigger waves reaching the coasts, causing coastal erosion and damage to infrastructure
- impacts on animal species (seals, polar bears and walruses) that rely on the sea ice and snow cover
- increasing access to shipping, fishing, thaw and natural resource extraction
- decreasing reflection of solar radiation that changes the amount and timing of fresh water flow during spring and summer, which also increases the incidence of droughts, wildfires and insect outbreaks and affects hydropower generation negatively.

Key environmental impacts

According to Ylä-Mononen, the warming of the Arctic is leading to rapid changes in sea ice, land ice, permafrost, snow cover and other physical features and characteristics of the Arctic environment. These changes are transforming the arctic ecosystems with far-reaching consequences. The climate change stressors are coupled with pressures from economic development, a decline in biodiversity and a threat from invasive species. These impacts are affecting the vulnerable ecosystems of the Arctic region, changing the productivity, seasonality, distribution and interactions of species and their ecosystems. In particular risk are ecosystems that rely on snow and ice.

Sea level rise is also a major concern in the Arctic region. It causes erosion to coastal areas and damage to ecosystems, not only in the Arctic but also elsewhere in the world. This leads to increased flooding and damage to infrastructure, and dispersion of harmful substances and displacement of people in low-lying areas. Another major concern is the loss of permafrost. Thawing the permafrost increased damage to Arctic infrastructure and transport systems, including oil and gas pipelines, roads, houses, and airports' runways. It also causes damage to ecosystems and can lead to the release of additional greenhouse gases and historical deposits of harmful substances.

Climatic stressors, like wildfires, extreme weather events and increased temperatures, also challenge the ecosystem resilience. This phenomenon poses widespread risks for safety, health and well-being, and damages infrastructure, causing economic impacts on many sectors. While some economic activities might bring growth in terms of new employment opportunities and economic growth, many of these activities can have a negative impact on the environment and other traditional human activities. Commercial fisheries, aquaculture and cruise tourism are examples of expanding branches in the Arctic, and have implications for coastal communities and livelihoods, vulnerable ecosystems and demand for even search and rescue services.

Global megatrends impact the Arctic

Ylä-Mononen underlined that the Arctic region is not isolated from global megatrends or crises of the world. The effects of climate change on the Arctic can lead to increased activity and connectivity, as well as pressures to the ecosystems. According to Ylä-Mononen, the Arctic will see increased pressure arising from megatrends originating from elsewhere in the world, e.g. population pressures, risks of diseases and pandemics, technological change or competition for natural resources or increases in environmental pollution or in climate change itself.

Ylä-Mononen highlighted that the Arctic offers opportunities for economic activities. The Arctic is supplying a significant part of the world's natural gas and is estimated to hold a large proportion of the Earth's undiscovered oil and natural gas reserves. However, these activities pose risks.

Oil extraction poses considerable risk to arctic ecosystems and communities, threatening fish and marine mammals that Indigenous Arctic peoples depend on. Arctic shipping also offers opportunities but poses risks.

In risk management, the EU, its member states and Arctic partners play a constructive role, for example, by raising international standards and targets through international conventions, supporting the designation of shipping corridors with low environmental impact, and limiting shipping in sensitive areas. These actors can also support the Arctic satellite systems for better satellite-based Earth observation systems, while continuing cooperation on assessing impacts for shipping and tourism.

With Europe being a large importer of natural resources and minerals, the EU and its member states also play a constructive role by ensuring that the following are considered:

- ensuring that environmental and socioeconomic assessments are considered in any future developments
- special attention needs to be given to the vulnerable environment, local issues, and Indigenous rights
- adoption of full value chain perspectives, in which every stage of the progression (from exploration through mining, transport, processing, production and recycling) is included to address the social and environmental externalities
- support of area-based management which limits or prevents mining activities in particularly sensitive or ecologically important areas.

Ylä-Mononen elaborated that Europe and the Arctic share geographic ecosystems, weather systems, climate systems, and longstanding historical, cultural, and economic ties. Hence, Europe bears some responsibility for the rapidly changing situation in the Arctic, through extraction of natural resources, emissions of greenhouse gases, long-range pollution, atmospheric and marine litter, plastics and increased shipping and tourism.

According to Ylä-Mononen, Europe and the EU can provide solutions to many of these challenges through integrated policy responses that protect the environment, mitigate climate change, strengthen the knowledge base, and support sustainable development.

Ylä-Mononen described the EU as a geopolitical power, that has a strategic and day-to-day interest both in the European Arctic and the broader Arctic region. The EU is interested in supporting multilateral cooperation in the Arctic and working to ensure that the region remains safe, sustainable, peaceful, and prosperous. EU also shares the responsibility for for global sustainable development, including in the Arctic region, and for the livelihood of inhabitants including Indigenous peoples.

Ylä-Mononen briefly mentioned that the EU, EU member states and EU's Arctic partners (e.g. Norway, Iceland) have adopted national Arctic strategies and policy frameworks. Ylä-Mononen summarized, that in this context the EU and its member states enhance their constructive role by continuing efforts to mitigate climate change, ensure that best practices and guidelines are applied in economic activities, drive regional development forward and strengthen dialogue with arctic Indigenous peoples' organizations and environmental NGOs.

Concluding the presentation, Ylä-Mononen reminded of the significant impacts climate change has on the Arctic environment, which will increase over the coming years. She stressed that when approaches to sustainable development in the region are considered, it is important to acknowledge the growing demands among Arctic populations, Indigenous or otherwise, for economic development, improved living conditions, and higher health standards. Adaptation to climate change, creating job opportunities and allowing industrial activities are not always incompatible with safeguarding the environment. Appropriate measures are needed to protect the environment and avoid accidental effects from increased activities and use of living and non-living resources, as these effects will ultimately have a more devastating impact in the long term. Ylä-Mononen finished by underlining the importance of respecting and acknowledging the culture, languages, local and traditional practices of Indigenous peoples before starting major new economic activities. Indigenous peoples have a long tradition of adapting to challenging and changing living conditions and it will be important to properly respect and address their views and concerns.

2.3. Changing Geopolitics in the Arctic

Sanna Kopra is a Senior researcher at the Arctic Centre of the University of Lapland. She leads the Arctic International Relations research team and is also a senior fellow at the Arctic Institute – Center for Circumpolar Security Studies in Washington D.C, USA, and an adjunct professor of International Politics at the University of Turku, Finland. Kopra's research focuses on geo-Arctic geopolitics and global environmental politics, which indicate the themes of her presentation as the third keynote speaker in the session on Arctic Environmental Change at the Assembly. Kopra discussed the melting Arctic, its geopolitical implications, the interests of natural resources in the area and the risks that they bear.

Sanna Kopra

In the beginning of her presentation, Kopra underlined that climate change currently poses the most important security threat to the Arctic. However, at the same time it opens up new economic and strategic opportunities for countries in and also beyond the region. To add to the presentation by Leena Ylä-Mononen, Kopra pointed out that the U.S. Geological Survey estimated in 2008 that the Arctic holds about 13% of undiscovered oil and 30% of undiscovered natural gas. Most of these reserves are offshore, which Kopra explained to be one of the reasons of what media outlets occasionally define as "a scramble for the Arctic". The melting of the sea ice offers easier exploitation of natural resources and shipping of these resources from the Arctic to the capitals around the world. In addition to energy resources, the Arctic holds reserves of rare earth materials that are used in building batteries and other technology used for green transition. Hence, climate change mitigation enhances interest in the Arctic region. However, mitigation causes some challenges in the region, such as local tensions due to competing interests in land use. For example, windmills and mining operations that harm local people's livelihoods (e.g. reindeer herding).

According to Kopra, the melting sea ice creates strategic interest in the Arctic due to opening sea lines that emerge due to the melting of the Arctic Ocean ice. The development of new technology also allows easier use of these new sea lines. Kopra introduced three main sea lines in relation to this. The first is the Northern Sea Route on the coast of Russia, that is in very much in use (under Russian dictation), offering a shorter route from Asia to Central European markets. The second one is the Northwest Passage in the North American coast, which in the future brings a shorter route from Asia to North America and Europe. The third one is the Transpolar Sea Route in international waters, also offering a shorter route from Asia to Europe. Kopra underlined that operating in the Arctic Ocean requires in-depth knowledge due to the harsh environment. All in all, melting of the Arctic Ocean ice is expected to result in more commercial use as supporting of new economic opportunities.

Enhanced mobility in the Arctic due to tourism and commercial use leads to increased human presence in the Arctic. This creates new kind of pressures in the Arctic, creating risks to both, the environment and humans themselves (the difficulty of search and rescue operations due to the secluded nature of the Arctic).

Maritime boundaries in the Arctic

The Arctic is not a region open to regional exploitation, despite the possible depictions of the area in the midst of a strategic scramble. All land in the Arctic belongs under the sovereignty of one of the eight Arctic states. Kopra highlighted that seven out of eight maritime borders in the Arctic have been settled and that maritime border disputes are of diplomatic nature, and there is no reason to expect these disputes to involve military means. Military conflict in the Arctic would be possible in the case there are tensions originating from great power competition elsewhere.

Arctic governance and the institutional framework of cooperation in the Arctic Kopra stated that after the Cold War, it was seen that Arctic environmental protection was a shared interest among the eight countries with territory on the region. This led to the establishment of the Arctic Council in 1996. The mandate of the Council excludes hard security questions, making cooperation easier despite intensified great power competition. Kopra briefly introduced the three treaties that have been negotiated under the auspice of the Arctic Council:

- Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (2011)
- Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (2013)
- Agreement on Enhancing International Arctic Scientific Cooperation (2017)

Kopra also introduced the Arctic Council Framework for Action on Enhanced Black Carbon and Methane Emissions reductions (2015) as another important framework, in addition to the International Agreement to Prevent Unregulated Fishing in the High Seas of the Central Arctic Ocean (2021), an important agreement regarding the preservation of fisheries. The International Code for Ships Operating in Polar Waters (Polar Code) by the International Maritime Organization (2017) was a very important milestone in terms of shipping in the Arctic.

Intensifying geopolitical tensions in the Arctic

Kopra stated that great power rivalry has intensified and regional impacts in the Arctic have changed quite dramatically. Great power rivalry makes it increasingly difficult to agree on new standards and establish strong cooperation in environmental protection and sustainable development. According to Kopra, there are expectations that the militarization of the Arctic will enhance if the tensions persist. Kopra further evaluated the impact and effect of different regional actors on the Arctic in the future, e.g. NATO.

Kopra underscored that continuing cooperation in the Arctic remains important despite Russia's war in Ukraine. Without cooperation, agreeing on new environmental standards and protecting the Arctic environment are not collective efforts. Kopra concluded with stating that climate change and climate change mitigation are the key questions when it comes to the future of the Arctic.

Similarities and differences between European and Canadian Arctic

In his contribution to the panel discussion, Commissioner of the Environment and Sustainable Development **Jerry DeMarco** discussed the similarities with European Arctic Countries as well as the challenges faced by Canada in its Arctic region. DeMarco explained that these include security concerns, indigenous involvement, and impacts of climate change such as melting permafrost. Canada's Arctic region encompasses about a quarter of the global Arctic and holds significant coastline. However, it has a sparse population, with a high proportion being indigenous peoples. DeMarco outlined that 85% of the population is indigenous in the Eastern territory of Nunavut, 50% in the central Northwest territories and over 20% in the Yukon territory, whereas the rest of Canada is only 4.8% in terms of indigenous population.

These indigenous populations in the territories are faced with issues like poverty and inadequate housing. According to DeMarco, one in five people living in the territories in Canada are below the poverty line, whereas in the rest of Canada, the proportion of people living below the poverty line is 7%. DeMarco highlighted environmental changes like reduced permafrost and increasing wildfires as environmental impacts in Canada's Arctic. Canada is addressing these challenges through initiatives like the United Nations Declaration on the Rights of Indigenous People and domestic reconciliation efforts. Regarding audits relating to the Arctic, DeMarco introduced SAI Canada's audit (completed in 2022) of Canada's aging surveillance program in the Arctic, in terms of the need to upgrade its capacity in terms of ships, aircraft, satellites, and in terms of the increasing geopolitical issues that are occurring in the Arctic and the aging infrastructure that Canada has. SAI Canada also conducted three climate change audits, one for each of the three major territories in Canada's Arctic in 2017 and 2018. Additionally, SAI Canada will also be issuing an audit on contaminated sites in Northern Canada in the spring of 2024.

Eeva Primmer (left), Michael Kuur Sorensen, Jerry deMarco, and Sanna Kopra.

AUDIT CASE

Michael Kuur Sørensen, SAI Denmark

In accordance with other speakers of the session, Sørensen outlines that climate change in the Arctic creates a different set of conditions that governments are required to navigate in.

"The role of audit in this changing environment could be to measure or undertake a study on the performance of governments in these changing conditions".

Sørensen argues that the role of the audit institution is to hold government accountable to these new environments that are defined by these changing conditions, e.g. increased fishing opportunities, cruise activity and tourism in the Arctic.

The point of departure of SAI Denmark regarding this audit was to examine, what the government did in these changing conditions. In regard to this, the audit examined, how the government of Denmark created conditions for sage naval activity in the Arctic (especially in the coast of Greenland, that Denmark is responsible for); how the government of Denmark conducted search- and rescue operations in the Arctic, and how the government of Denmark enforced environmental rules in the new Arctic environment.

The audit concluded that:

(1) The naval authority in Denmark failed to produce enough maps for ships to navigate safely in the arctic waters, leading to the consequence of higher risk for naval accidents.

(2) The Danish Ministry of Defense had a too small a fleet of vessels that are capable of mapping the sea, with the consequence of low productivity in creating these new types of maps to navigate the sea.

(3) The Danish Naval Authority should clarify on an ongoing basis what the regulations are in the waters that are regulated by Danish national authorities, while also pushing for an international agreement on how to prevent shipping accidents in the Greenland waters.

• in 2017, the International Maritime Organization produced a code for how to navigate vessels in the Arctic region

(4) The Danish defense had outdated equipment for search and rescue -operations in the Arctic

(5) Most of the equipment suitable for larger-scale accidents (e.g. cruise ship sinking) was located in Denmark, thousands of kilometers away and not reachable on-site in the Arctic waters

6) There was clear division of tasks between the local authorities in Greenland and the Ministry of Defense in Denmark, so the demarcation line with allocation of responsibilities was not clear

(7) The Danish Ministry of Defense, responsible for environmental surveillance and enforcing Greenland marine environment order in the Arctic, failed to prioritize this task
•this is a problem, because with increased activity in the Arctic, the risk of environmental pollution increases

The audit case was closed in 2023, and progress has been made regarding the findings of the audit. The government has now passed a new regulation for conducting naval trade in the Greenlandic areas, increased the amount of available equipment in Greenland for the possible cases of large-scale accidents, and increased compulsory communication between authorities and vessels passing through the Greenlandic waters.

Audits on the Arctic in the Nordic countries

While planning the Assembly programme, to include the regionally relevant examples, the Secretariat asked from all Nordic countries whether they have conducted any audits related to the Arctic or Sámi people. We found one audit case from Denmark related to shipping (see the audit case). Its main focus is on the search and rescue operations of people, but it also notes that accidents resulting in oils spills pose the greatest threat to the Arctic ecosystems. Based on our inquiries, no audits have been made on the environmental risks related to shipping of oil in the Arctic, which is expected to rise due to drilling in the melting Arctic and with the opening of new shipping routes. Due to the remote location and fragile environment, the consequences of such disaster would be massive.

SAI Finland published in 2014 an audit on management of oil spills from vessels in the Gulf of Finland, where the oil tanker traffic had increased. Concerning government's liabilities, the finding was that the international compensation fund system only applies to oil tanker accidents. Even in this case, the tanker insurance policies and the international funds have ceiling which was in 2014 close to 1 billion euros. As the compensation processes are lengthy, and costs might exceed the compensation, the government may ultimately end up footing the bill.

3 Indigenous Knowledge

3.1. Concept of Indigenous knowledge

Professor **Florian Stammler** from the Arctic Centre at the University of Lapland introduced the concept of Indigenous knowledge. Stammler first explained, that he prefers the term indigenous ways of knowing instead of indigenous knowledge. These ways of knowing are not useful only for the sake of preservation of indigenous cultures but for the development of the humankind in general so that everyone can benefit from these ways of knowing and relating to the world.

Stammler conceptualised Indigenous knowledge through a comparison to scientific – a concept of which he was critical as it implies that indigenous knowledge would not be scientific. Stammler characterise indigenous knowledge or Indigenous ways of knowing as personal, subjective and experience based and continuously empirically verified in real life situation. This contrasts with scientific knowledge produced through laboratory tests. Thus, knowledge that is not replicable or objective is not considered valid and thus knowledge that does not fill these requirements is marginalised. Yet, Stammler notes that facts alone do not matter but rather how they are interpreted and what is done with them as well as the consequences of knowing them.

Indigenous ways of knowing are based on an idea that all beings are interrelated including terrestrial and water environments, seasons, and seasons of animals. They tend to link to indigenous cosmologies where the surrounding environment is alive. Yet, Stammler reminds that indigenous ways of knowledge are adaptable and can incorporate modern technology.

Indigenous knowledge is not:

- a body of knowledge
- objective
- static (database), archived
- independently, replicable
- hierarchical
- restricted to quantitative measurements
- brain-mind centered
- facts only
- experimental
- often lab-developed, detached from life

Indigenous ways of knowing is:

- personal and subjective
- processual, enacted
- intergenerational
- context-sensitive
- egalitarian
- sensory, perception based, qualitative
- relating to all senses
- not just the brain-mind-reason
- interpretative (facts and meaning)
- experience-based, empirically checked over and over in real life situations

Stammler explained that in practice indigenous ways of knowing can help ecologically, socially, and culturally sustainable use of natural resources. For example, if gold mining companies leave tailing from their gold mining, the land can continue to be used by reindeer herders protecting cultural diversity and biodiversity.

Together with his informants, Stammler created codes of conduct for gas industry workers in areas with nomadic livelihoods, which were subsequently added to Russian gas company Gaprom's social sustainability policy and discussed in the Russian Parliament.

Florian Stammler

Traditional knowledge or Indigenous knowledge?

Once we started to plan the concept note for the Assembly, we were puzzling with the concept. Literature refers to traditional knowledge but also to Indigenous knowledge. While wondering what concept to use, we learned that traditional knowledge is "tamer" whereas Indigenous knowledge is more connected to the rights of Indigenous people. Quite interestingly the 2030 Agenda or Sustainable Development Goals mentions traditional knowledge only once in the context of SDG 2.5 on utilization of genetic resources, whereas Indigenous people are referred to a few times and Indigenous knowledge not at all. The Convention on Biological Diversity talks about traditional knowledge. Based on Sámi researchers' advice, we adopted the concept of Indigenous knowledge.

At first, we also wished to focus on environmental Indigenous knowledge stressing our point of interest. While discussing with the researchers we soon realized that this not the way you can separate environmental knowledge from another knowledge in the indigenous context. Instead of making dichotomies and attempting to vacuum the environment as a separate area, Indigenous knowledge represents a unity and a broader world-view where everything is interconnected.

Climate change and Indigenous knowledge and cultures

The Chair of Sámi Climate Council and Post-Doctoral Researcher at the University of Oulu Klemetti Näkkäläjärvi characterised Indigenous knowledge as indefinite. Traditional

knowledge refers to the knowledge and practices Indignenous communities that have developed over centuries and are traditionally transferred from elders to young people in concrete working and life situations. It is dynamic, and can be transferred and expressed orally, through stories, legends, rituals and life situations. It has always developed, and traditions and knowledge have been lost and new knowledge has emerged. However, traditionally the change has been rather slow but due to changes in the environmental and climate conditions changes occur faster. As Vuorimäki, Näkkäläjärvi raises the question of balance: what the limits for adaptation are; how much cultural knowledge can be lost without losing the Sámi cultural goal?

Näkkäläjärvi demonstrates the links between language, practices, and culture. He explains that several of the words describing snow and ice in the North Sámi language are no longer used due to changed environmental conditions. This results in a loss in the ability to recognise these conditions. In another example, Näkkäläjärvi explains the North Sámi tradition of asking 'how the pasture 'guohtun' is? By asking about 'guohtun' the asker reproduces the tradition and learns whether 'guohtun' is relevant to the reindeer herder or whether they keep their reindeer in enclosures due to changes environmental conditions. Thus, the deteriation of the 'guohtun' identification know-how is one indirect effect of climate change adaptation.

Sámi traditional knowledge

Sámi traditional knowledge is manifested in the Sámi use of natural resources and traditional Sámi livelihoods, i.e. reindeer herding, fishing, hunting, gathering and handicrafts, as well as natural relations. It is conveyed through the Sámi terminology related to nature, terrain, weather, reindeer husbandry, handicrafts, fishing, and hunting, as well as Sámi place names. Traditional knowledge is passed on through conscious teaching, modelling from older generations, yoiks and oral narrative traditions, as well as through activities, such as reindeer herding, fishing, gathering, handicraft, and hunting practices.

Näkkäläjärvi argues that including elders in the climate discussion is important as they have extensive knowledge on climate change and traditional knowledge. The choice to interview reindeer herder and traditional knowledge holder and Sámi climate council member **Antti-Oula Juuso** in North Sámi language is also important as it allows the indigenous knowledge holder to express themselves in a language they prefer.

Juuso has been herding reindeers for over 60 years and noted that especially coming to the 21st the years have been very challenging for herding. While lichen used to be moisturised from the ground as there was frost now the ground freezes before it snowsforcing reindeer herders to give reindeers additional food.

In discussing on how to learn traditional knowledge, Juuso explained that it is important to involve children in activities, such as reindeer herding from young age. Women and girls are also included in these practices. In addition to herding culture, children will learn how to be in the nature. This involves not taking anything, such as trees or rocks away from the nature and cleaning after themselves. Finally, Juuso shared his view on how to stop and adapt to environmental changes:

"The world is not as bad as we think it is, but we have to look into the future so that our children and grandchildren can also live in this beautiful world."

Antti-Oula Juuso (left) and Klemetti Näkkäläjärvi

3.2. Working with indigenous ways of knowing

Recognition of indigenous knowledge and Indigenous rights

The Head of the Peoples and Biodiversity Unit at the Secretariat of the Convention on Biological Diversity Olivier Rukundo explains that close dependency of many indigenous people and local people on biological resources as well as the sharing benefits associated with the use of traditional knowledge, innovation, and practices relevant to the conservation of biological diversity and sustainable use of its components was recognised soon after the establishment of the CBD in 1992.

Subsequently, article 8j was created. The article states that parties have to respect, preserve, and maintain knowledge, innovational practices of indigenous people and local communities. In addition, approval, and involvement of the holders of such knowledge as well as benefit sharing arising from the use of the utilisation of traditional knowledge are emphasised. The objectives related to traditional knowledge are the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from the use of genetic resources. The article is subject to national legislation.

Article 8j

Each contracting Party shall, as far as possible and as appropriate:
Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices.

Olivier Rukundo

The programme is currently on its third iteration and has developed a number of tools, such as voluntary guidelines, a plan of action on the customers of sustainable use of biological diversity, and glossary of terms centred around the implementation of the article 8j. A new programme of work is under development and will be submitted to COP16 for finalisation. However, the best new programme of work remains to be discussed. Some favour permanent body, some favour a more integrated approach with the processes under the Convention, and others wish to have clarification of, namely budget implications.

The Kunming-Montreal Global Biodiversity Framework was adopted at COP15 in December 2022. The framework features strong references to the rights of indigenous people and local communities, the recognition of different value systems, the right to clean and healthy and sustainable environment. In this way, it is linked to the SDGs. Rukundo explains that the framework promotes human rights-based approach linked to the rights of indigenous people and local communities, gender equality, intergenerational equity with regard to youth as well as rights of people with disabilities. It is also a 'whole of government and whole of society' approach so that it is not solely a framework for parties. The framework thus recognises the rights and representation in decision-making.

Representation of Indigenous People at All Stages of Projects

At end of the session, moderator Chief External Auditor from SAI Tanzania, **Michael Malabeja** inquired the keynote speakers about the use of Indigenous knowledge in environmental audits. In response to Malabeja's question on how to adopt a more holistic view into auditing, Florian Stammler echoed Rukundo's view. Ethical, free prior and informed consent does not suffice, but Indigenous knowledge holders should be integrated to participate throughout the full project life cycle. After Stammler's keynote speech, Malabeja reminded participants of the importance of understanding the process and different ways of knowing instead of immediately jumping to collecting data. He also advised auditors to include experts in the areas in audits. In his presentation, Stammler also noted that the perception of time can differ among peoples living in a closer relation to the nature. Therefore, understanding Indigenous peoples' perspectives takes time.

At the CBD, Indigenous knowledge is promoted through Indigenous representation among staff members, posts dedicated to traditional knowledge as well as support for the participation of Indigenous people and local communities in meetings related to article 8j or other meetings of the CBD. A voluntary funding mechanism to support the participation of Indigenous people and local communities is also in place. Finally, capacity building and capacity development regarding Indigenous people and local people take place at the CBD.

AUDIT CASE

Kritsanu Thipnoy, SAI Thailand

Kritsanu Thipnoy from SAI Thailand provided a practical example of the use of Indigenous knowledge in environmental policies. In Thailand, Indigenous people are recognised as a local community and thus they are equal to citizens of Thailand before the law. Despite decentralised local governance, environmental policies tend to use a top-down approach. For example, the government developed their own community forest management guidelines despite local communities' know-how onto utilising natural resources in a balanced and sustainable way. In reviewing articles on forest management, Thipnoy discovered that traditional community forest management was often found more effective than the management of the government. These communities view forests and natural resources as heritage whereas the government tends to see them as property. Thipnoy concludes by arguing that Indigenous peoples should be included in the discussion as it is not possible to formulate a 'one size fits all' policy for the entire country.

3.3. Protection of Indigenous knowledge in Finland

Protection of Sámi traditional knowledge

For Näkkäläjärvi the central challenge is the lack of understanding and protection of traditional knowledge. The reason for this is that traditional knowledge is related to indigenous rights. Näkkäläjärvi argued that Finns consider themselves as nature people and thus might feel that the Sámi do not possess more knowledge on nature than the Finns do, which has slowed down the protection of the traditional knowledge in the country. Another central challenge is that traditional knowledge is not definite making its protection more complex.

The protection of Sámi traditional knowledge founded on nature requires supporting the traditional Sámi livelihoods and cultural traditions related to them: reindeer herding, fishing, hunting, and handicrafts. Sámi traditional knowledge could also be incorporated into education, early childhood education and care as the Finnish education system presently provides education in the Sámi languages but overlooks cultural knowledge linked to the language.

In practice, Sámi traditional knowledge is applied in the work of Metsähallitus (the Finnish Forest Administration) in the implementation of the Akwé: Kon guidelines, which were created by the CBD. Metsähallitus, Sámi Parliament and Skolt Sámi Village Assembly have an agreement on how to implement the guidelines. A specific Akwé: Kon working group only has holders of traditional knowledge as members to support land use and resource planning. In addition, the Sámi Climate Council was established in 2023. If successful, the Council could serve as a model of implementing indigenous participants' rights in climate work. However, this requires resources. Näkkäläjärvi concludes.

Sámi Climate Council in Finland

The Sámi Climate Council is an independent scientific organ nominated by the Finnish government. Half of its members are members of the academia, and the other half are holders of Sámi traditional knowledge. Its main task is to produce knowledge on climate change and its effects on the Sámi culture, which will used in drafting climate action and policies. The Council was established as an acknowledgement of the impact of climate change and adaptation measures on the Sámi culture and the status of Sámi people did not exist previously. The Council contributes partly to the implementation of Finland's international obligations, such as the Paris Climate Agreement and central human rights conventions.

4 Indigenous Knowledge - Audit Cases and SAI Practices

4.1. Building trust and confidence with New Zealand's indigenous population

Enhancing SAI New Zealand's impact on tea o Māori

John Ryan

In a video presentation of the Office of the Auditor-General New Zealand, Auditor General **John Ryan** elaborated on his aspiration to work with Māori, the Indigenous population of New Zealand, in a new way to continue to build trust and confidence in the role of SAI New Zealand. After the start of his term in 2018, Ryan has placed emphasis on enhancing SAI New Zealand's impact with Māori, including building meaningful relationships with Māori leaders and stakeholders and seeking input from Māori in planning focus points of the SAI. The video also included views and perspectives of staff supporting the Office in this work. Ryan started by establishing that the vision of the work of SAI New Zealand could be best described as improving the trust in the public sector and promoting its value. Ryan outlined that the Māori population has lowest trust in public sector. Ryan is keen to understand more about how SAI New Zealand can play to help build the trust of Māori in the public sector.

Auditor General Ryan acknowledges his role as not being from the Māori population, therefore approaching the subject cautiously. When Ryan started in his role, he prioritized the position the SAI has in quite a complex landscape in New Zealand: the relationships between Māori and non-Māori. Hence, SAI New Zealand developed a position statement to talk with authorities about how they saw themselves playing into that space. The ultimate goal of the position statement is to ensure that SAI New Zealand is trusted equally by Māori and non-Māori to hold the government to account. Ryan elaborated this further, explaining that in his role, he must build the trust of Māori communities, and that that trust is committed, understanding and sincere in some of the goals that need to be met to improve the outcomes in New Zealand for Māori.

SAI New Zealand explained that in recent decades, the New Zealand government and New Zealand's public at large have developed their understanding of the Treaty. SAI New Zealand's Deputy Controller and Auditor General Andrew McConnell explained that there has been a huge evolution in how the public sector gives life to its Treaty responsibilities in New Zealand. He goes on to explain how SAI New Zealand's role in auditing all public entities enables it to consider how well these entities are performing for Māori.

Performance Auditor **Hamish Duff** introduced a research project SAI New Zealand has carried out on the office's history with Māori, looking at areas where the Auditor General or the Audit Office at the time had intervened in Māori affairs throughout the history of New Zealand. The purpose of the history project is to understand the role of the Auditor General and the Office in the history of New Zealand, particularly looking at the history with Māori and the colonization of New Zealand. Duff explained the importance of the project in understanding what it means to be an audit office or the Auditor General within New Zealand, with New Zealand's specific history and context – work that cannot be done by learning about international best practice or looking at other SAIs around the world. Rather, it is work that SAI New Zealand has to do by themselves to understand how to be an audit office for all of New Zealand.

The Treaty of Waitangi

The Treaty of Waitangi is an important part of New Zealand's constitutional framework and guaranteed that Māori would continue to exercise full authority over their people, their land, their communities, management of their resources, the treasures and other things that were important to them when New Zealand became a colony of Britain in 1840 when the Treaty was signed. Every public organization within Aotearoa (New Zealand) has a responsibility to ensure that public organizations give sufficient opportunities for Māori to participate as recipients of public services but also as citizens of Aotearoa. Since the Treaty was signed, the government that the British established in New Zealand has repeatedly breached the guarantees in the Treaty, which has resulted in some grave consequences for Māori, like significant land loss. Māori are still experiencing intergenerational effects of the prosecution of war against the Māori in the 1800s and suppression of Māori language and cultural practices.

Working with Māori communities

Establishment Director for Māori Capability and Engagement **Mat Mullany** explained that SAI New Zealand is working with Māori communities to build trust. He says that the work with Māori communities is different, meaning being open to their perspectives and aspirations, and understanding their challenges. This enables the Office to hold the public sector to account for their Treaty obligations and for improving outcomes for Māori in a wayt that helps the Office to build trust with them.

McConnell elaborated on the ways SAI New Zealand has enhanced work with Māori. One of the ways the Office has equipped themselves to be able to work with Māori is to bring on board a group (rōpū) of individuals with deep knowledge, experience, and expertise in the Māori world, who can provide the Office with guidance to the Māori world.

SAI New Zealand is developing a Te Ao Māori strategy up until 30 June 2026. The key purpose of the strategy is to build trust and confidence among Māori in the role of the Office to ensure that the SAI can authentically take account of Māori perspectives and factor them into its work. An aim of the SAI is also to build the capability of their staff to enhance their impact in Te Ao Māori. The Office wants to make sure that Māori staff understand the Office as a place to be their authentic selves, so that they can express themselves in relation to te reo Māori (Māori language) and tikanga (customs).

Additionally, the Office has taken a more fundamental look into its operations, even though the development is in its early days. Regarding operations, Auditor General Ryan discusses the approach of SAI New Zealand with Indigenous data and raises some challenges that the office needs to be conscious of when handling the data. For example, if the Office is researching a particular piece of work, the following questions could be asked:

- what level of respect does the Office need to show to that data?
- as the data is a taonga (treasure) of that community, hence does the Office give proper regard to that Māori perspective?
- does the Office deal with the data in a way that is appropriate?
- does the Office not substitute their voice for the voice of Māori?
- does the Office think about the culture, and the interactions it has with it, and are they competent in that culture?
- is the Office as a group of highly trained specialists in performance and financial audit able to engage in a way that's respectful of all people in New Zealand, but particularly of Māori?

SAI New Zealand has developed a Māori conceptual framework. The purpose of the framework is to identify the Māori values and behaviors that most closely relate to public accountability. The purpose of the development of the framework is to identify the policies, processes and systems that may benefit from applying Māori values. The SAI hopes that by applying the framework to its policies, process, and systems, it will be able to engage more authentically with Māori perspectives. Additionally, the SAI hopes that Māori will be able to see themselves inside the work of the organization. The Māori conceptual framework essentially takes the values at the core of a SAI and puts them into a Te Ao Māori (Māori world context), which helps the SAI form rapport with Māori.

According to Mullany, the first phase of work of SAI New Zealand is about establishing solid foundations, so it better understands what role the Office can play in relation to Te Tiriti o Waitangi (the Treaty of Waitangi), and how it might understand its role in relation to effective engagement with Māori communities.

As concluding remarks, McConnell noted: "One of the key things that I have found through my work in this area has been the fundamentals – the role of a healthy society, and that you have a democratically elected government, which is serving the people – are at the center of lots of the responsibilities that governments have with their Indigenous peoples."

4.2. New South Wales Audit Office Approach to First Nations

Carla Ware is the First Nations Performance Audit Team Leader of the New South Wales Audit Office and a proud Mualgal woman. In her presentation, Ware reflected on the importance of First Nations perspectives in accountability.

Australia is comprised of two First Nations peoples: the Aboriginal people, who are on the mainland of Australia and the Torres Strait Islanders, who are in the islands. These peoples are not two groups. Before British colonization in 1700s, Australia was made up of over 300 Nations, each with their own language, kinship systems and cultural customs, including obligations for caring for each other and for country. The British declared the land "terra nullius", meaning the land belonged to no one. According to Ware, this was followed by systematic subjugation and dispossession of First Nations peoples from their lands, and massacres where First Nations people resisted. The survivors were herded onto missions that are still in existence today. These missions did not allow practice of one's traditional culture or language, moving or leaving without the permission from the Aboriginal protector. Children (the stolen generation) were forcibly removed from families for the reason of being Aboriginal or Torres Strait Islander. The practice of stealing children only ceased 50 years ago.

Carla Ware

According to Ware, First Nations peoples were not counted as Australian citizens until a referendum in 1967. Additionally, they did not gain full voting rights until 1984. Ware narrates that a Torres Strait Islander Koiki Mabo's legal challenge led to the recognition of native title in Australia in 1992. Despite this landmark decision, delays in processing claims persist, with 70% of claims in New South Wales awaiting decisions. The UN Declaration on Indigenous Rights emphasizes self-determination, but government policies often fall short. A referendum seeking constitutional recognition and a parliamentary voice for Indigenous Australians failed, despite strong support in areas with high Indigenous populations. Despite substantial government spending, Indigenous communities in New South Wales continue to face significant challenges, including high rates of child removal, incarceration, and violence. Numerous inquiries and recommendations have been made, but systemic change remains elusive.

Ware elaborated how the values of integrity and courage guide the work of the New South Wales Audit Office focusing on holding the government accountable for public resource use through performance audits. Ware herself as a First Nations individual, emphasized the importance of their perspective in auditing, drawing on millennia of inherent knowledge and connection to the land and communities. They stress the need for genuine partnerships and involvement of First Nations peoples in audits to ensure relevance, truth, and equity in recommendations, highlighting the risk of superficial audits without this perspective. Ware concluded with determination that embedding First Nations' viewpoints starts with leadership and aligns with human rights and Indigenous governance models.

4.3. Audit Cases and SAI Practices

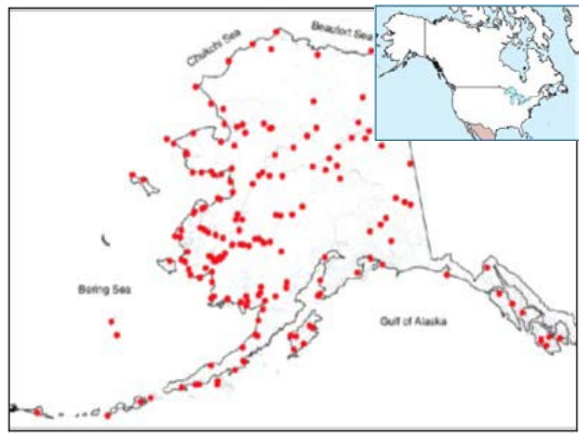
GAO's Work on Tribal and Native American Issues

Beginning the panel discussion of the session, **Mark Gaffigan**, Managing Director of SAI USA (GAO), talked about how SAIs can make a difference, particularly using Indigenous knowledge. Gaffigan referred to the John Ryan, Auditor General of New Zealand, and outlined that it starts with trust and building that trust. Gaffigan's presentation focused on three areas:

Tribal Nations in USA

There exist 574 federally recognized tribes in the United States, representing diverse cultures, languages, and economic conditions, according to Gaffigan. Despite their variations, all tribal entities possess inherent sovereignty that predates the formation of the US, maintaining a government-to-government relationship with the federal government. This sovereignty grants tribes the authority to determine their tribal citizenship criteria, enact laws—both civil and criminal—establish court systems, and exert jurisdiction over their lands.

By supporting his argument with an illustrative map, Gaffigan points out that geographically, regions such as Alaska and Oklahoma are areas with a higher concentration of Native American populations. Historically, Native Americans were were displaced and pushed westward, as evidenced by the designation of Indian Territory in what is now Oklahoma, a relocation often associated with the Trail of Tears. Alaska, with approximately 20% of its population being Indigenous, presents a unique case due to its vast Arctic terrain.



Locations of tribes in Alaska

Within Alaska, there are 220 tribes, primarily consisting of small, remote villages characterized by nomadic lifestyles centered around hunting and fishing.

These communities face distinct infrastructure challenges, which include access to basic services and facilities due to their remote locations. Gaffigan introduced specific communities, marked on an illustrative map (figure XX), as the focus of ongoing audits, aiming to address these infrastructure challenges and improve living conditions for residents.

GAO's Tribal Work

In its tribal work, GAO focuses on three key principles: upholding tribal sovereignty and self-determination, fulfilling the federal trust responsibility, and engaging in meaningful tribal consultation. GAO addresses various issues concerning Native Americans across different sectors, including natural resources, healthcare, education, public safety, and economic opportunity. Recognizing the federal government's failure to fulfill its obligations to Native American communities, GAO has designated its commitment to tribes as a high-risk area needing additional attention. In regards to introducing efforts to elevate indigenous work within GAO, Gaffigan mentioned three initiatives: updating the strategic plan, establishing a Tribal Indigenous Advisory Council, and hiring Native American specialists to better address the needs of indigenous communities.

Examples about Indigenous knowledge in GAO'S work and the uses of it to bring about positive change

Gaffigan discussed two examples of leveraging indigenous knowledge to address challenges in Native American communities. The first example that Gaffigan introduced related to water infrastructure in Eek, Alaska. These challenges in water and wastewater management were tackled by prioritizing communities without infrastructure and making water systems portable for future relocations. The audit process resulted in agency actions, however, more needs to be done, but according to Gaffigan, at least some arrangements are making a difference. The second example of the village of Newtok, where efforts focused on addressing the impacts of climate change and erosion, leading to recommendations to streamline program delivery and include indigenous perspectives in addressing usteq, indicating the native word for the slow-moving collapse threatening this community. These examples highlighted the importance of incorporating indigenous knowledge to make meaningful impacts in addressing community needs.

The work of the TCU on Indigenous public policies in Brazil

Adriano Martins Juras, Advisor at the Specialized Audit Unit on Environment, Agriculture and Economic Development at the Federal Court of Accounts (TCU) of Brazil introduced the work the TCU has done on Indigenous public policies in Brazil. Juras began by introducing some basic data about Brazil and the current situation of Indigenous peoples in the country.

Brazil is home to approximately 1.7 million Indigenous individuals from over 300 ethnic groups, speaking more than 270 languages. Juras explained that this data does not provide a perfect perspective, as census data may not fully capture the exact numbers of Indigenous

individuals due to undeclared or uncontacted populations. Indigenous populations are concentrated in rural areas and Indigenous lands in Brazil, which comprise nearly 14% of the country's territory. However, the process of recognizing and protecting Indigenous lands is complex and often unclear due to legislative ambiguities. Referring to similar narratives from previous speakers from Australia and New Zealand, Juras highlighted that the legacy of colonization is evident in Brazil, with coastal regions heavily impacted by colonization, while Indigenous peoples in the Amazon continue to struggle to maintain their traditional lifestyles despite challenges.

International legislation, national legislation, and public administration

Juras outlined the international legislation related to Indigenous rights that binds Brazil, namely international agreements such as the Convention on Biological Diversity and the International Labor Organization's Convention 169, which recognize the rights of Indigenous peoples to self-declaration and self-determination. The Brazilian Constitution provides special status and rights to Indigenous populations, particularly regarding their land, customs, traditions, and languages. However, Juras asserted that there are inconsistencies between legislation and reality, posing challenges also for auditors in this landscape. Federal laws regarding Indigenous rights in Brazil are from the 1970s, hence outdated and carrying prejudices from the past. The public administration includes bodies like the National Foundation for Peoples. Juras pointed out that Indigenous individuals have been appointed to managerial positions in public administration, which is an important way of bringing Indigenous ways of knowing to the public administration. Despite efforts, bureaucratic challenges persist in integrating Indigenous perspectives into public administration. Indigenous communities face numerous challenges, including inadequate monitoring, protection against invaders, conflicts over land use, and limited access to public services like healthcare, water, infrastructure, and education. Juras asserted importance on tailored approaches to Indigenous health and education policies that are necessary to preserve languages and traditions. Furthermore, the diversity among Indigenous groups complicates policy implementation. Understanding and addressing these complexities are crucial for policymakers, administrators, and auditors working with Indigenous communities.

Adriano Juras

TCU's work on the Indigenous public policies

The TCU has been actively engaged in auditing Indigenous public policies, which Juras explains his presentation divides in direct and indirect engagements.

In response to a humanitarian crisis among the Yanomami people in 2023, which was driven by inefficient health management (due to lack of planning and control by the government), illegal mining (including contamination of mercury), increased violence due to disputes on land use and deficient environmental protection that facilitates the entry of drug traffickers and mariners into Yanomami Indigenous land. The TCU conducted an audit focusing on Indigenous healthcare, particularly in the Yanomami land. Recommendations included prioritizing real needs, improving data recording, and reinforcing supervision to combat illegal mining and alcohol abuse. TCU continues to monitor the situation and hold the government accountable. The TCU has also held two public hearings including of Indigenous representatives regarding Indigenous health and Indigenous territory protection. Additionally, TCU assessed risks associated with the National Foundation for Indigenous Affairs (FUNAI), highlighting deficiencies in infrastructure project impacts, policy implementation, and protection of Indigenous territories. Juras states that this work is still recent in terms of conclusions.

Indirectly, TCU's work intersects with Indigenous policies through environmental licensing of electricity transmission lines that cross Indigenous territories, tourism concessions, and carbon absorption in protected areas. Challenges persist in ensuring policy coherence, respecting Indigenous knowledge, and addressing vulnerabilities. Juras stressed that the principle of leaving-no-one-behind also needs to be considered, while also making sure Indigenous peoples are included in decision-making. Strengthening Indigenous audit approaches is crucial for effective Indigenous public policies.

Auditing Social Forestry Program in Indonesia

Normas Andi Ahmad, Senior Auditor of SAI Indonesia, presented an example of the application of Indigenous knowledge in auditing a social forestry program. Ahmad began the presentation by acknowledging a similar baseline to indigeneity as Thailand, were basically all Indonesians are Indigenous. While there's no strict differentiation between Indigenous and non-Indigenous, many Indonesians, particularly those in rural regions, have deep connections to their land and natural resources. These communities, often overlooked by government policies, possess invaluable knowledge passed down through generations on how to sustainably manage forests and ecosystems. Despite facing challenges like land grabbing and marginalization, Indigenous groups in Indonesia have demonstrated remarkable stewardship of their environments, employing practices such as agroforestry and silviculture to maintain the integrity of their forests.

Recognizing the importance of Indigenous knowledge, the Indonesian government launched the Social Forestry Program in 2015. This initiative aims to harness the expertise of local communities in forest management while addressing rural poverty. This program is an example of harnessing Indigenous knowledge to improve communities' livelihood and preserve the forest ecosystem. Tailored to the diverse cultural and environmental contexts of each community, the program seeks to solve emerging problems such as tenure conflict, inequality and urbanization.

According to Ahmad, there are three major areas that focus on the Social Forestry Program: granting access to forest areas, improving market access for forest products, and enhancing the capacity of forest farmers through training and technical assistance. The audit objective was to assess the effectiveness of access granting of the forest area to the local Indigenous communities in the framework of social forestry, covering the capacity building and market access improvement. The scope of the audit includes policy and regulation, planning, implementation, monitoring, evaluation, and coordination among stakeholders. The audit criteria are derived from relevant regulations and best practices in sustainable forest management, especially those addressing the involvement of local and Indigenous communities. The criteria cover legal aspects, conflict resolution, economic development, reduction of inequality, and community empowerment.

Audit findings

Ahmad explained that the audit results showed the following:

- Regulations pertaining to forest area access lacked clarity, potentially leading to conflicts over land tenure
- Coordination among stakeholders was suboptimal, hindering effective program implementation and monitoring
- Forest area access granting has not fully benefitted the local communities
- There was insufficient attention given to monitoring and evaluating the program's outcomes
- The business development aspect of the program lacked adequate resources and support for local communities.

To address these issues, the audit proposed recommendations to refine regulations on forest area clearance, enhance stakeholder coordination, conduct community outreach and education, and allocate sufficient resources for business development initiatives. By implementing these recommendations, Indonesia aims to strengthen the integration of Indigenous knowledge in forest management, promote sustainable practices, and empower local communities to thrive while conserving their natural resources.

Normas Andi Ahmad

Rural communities' Traditional knowledge to deal with the Environment in Arab Republic of Egypt

The final speaker presenting an audit case was **Mona Fahmy**, Administration Undersecretary of SAI Egypt. SAI Egypt has explored the utilization of traditional knowledge among rural communities in Egypt to enhance biodiversity conservation and sustainable development. Egypt boasts a rich history dating back thousands of years, during which ancient Egyptians developed innovative methods for environmental adaptation and resource management. Fahmy elaborated how this inherited traditional knowledge continues to play a crucial role in preserving the country's natural heritage and biodiversity.

Mona Fahmy

An environmental audit conducted by SAI Egypt investigated the potential integration of rural communities' environmental knowledge into projects aimed at protecting the environment and promoting sustainable practices. Fahmy gave four examples of such projects. The first one involved auditing a business incubator initiative supporting sustainable projects in remote areas like New Valley, Luxor, and Sohag Governorates. This program facilitated the transformation of innovative ideas into viable products, business models and businesses with positive social and environmental impacts. The project aimed to support innovators and entrepreneurs in translating ideas into socially impactful businesses while fostering the development of new creative ideas and facilitating collaboration between designers and manufacturers to enhance traditional crafts production. The second initiative focused on providing technical support services to emerging projects in Benban - Aswan, emphasizing the principle of sustainability. Thirdly, SAI Egypt's audit examined a program of incubating projects related to balm wood, aiming to develop high-quality products and innovative methods for dates production. As the final example, Fahmy presented Egypt's first green economy exhibition in Luxor Governorate as part of efforts to promote sustainable agriculture and circular economy practices. The audit findings underscored the significant role of inherited traditional knowledge in environmental management in Egypt, highlighting the communities' ability to adapt to their environment and develop sustainable methods for resource extraction.

The recommendations arising from the audit emphasize expanding the use of traditional knowledge in environmental treatment, encouraging the recycling of waste into handmade products, and facilitating workshops to link creative designers with manufacturers of traditional handicrafts. Moreover, promoting sustainable ideas and products in international exhibitions is advocated to showcase Egypt's commitment to preserving its natural heritage while fostering economic development.

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