

The Sky is the Limit

Advancing Indigenous Jurisdiction through the
Framework Agreement in response to the Climate Crisis

A discussion paper for the Lands Advisory Board

The Sky is the Limit:
Advancing Indigenous Jurisdiction through the Framework Agreement
in response to the Climate Crisis



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About This Report

Following the climate change-themed presentation and discussion at the LAB-RC Strategy Session in Gatineau QB, June 2019, it was recommended that a discussion paper be presented to the Lands Advisory Board (LAB) as a summary document about climate change impacts, the national and international context, and recommendations for action by the LAB.

This paper serves as a resource for better understanding of the scope, scale and severity of the climate crisis, to better understand the science of climate change, international efforts around responding to the climate crisis, how Canada fits into this global picture, and how First Nations can, and already are, leading the way. This paper uses the terms 'climate emergency', 'climate crisis', 'climate change', 'global warming' and 'global heating' interchangeably.

The Executive Summary summarizes the entire report. Chapter 1 presents key background information concerning climate science.

Chapter 2 presents some core assumptions and communication challenges that are important to understand for as our organization prepares to engage our communities around climate change.

Chapter 3 describes the international effort to respond to climate change and introduces the global entities and their proposed responses to the climate crisis, as well as a brief description of Canada's involvement and commitments.

Chapter 4 explores the intersection of the climate emergency with indigenous issues in Canada and globally.

Chapter 5 of this paper explores options and examples of how the Framework Agreement is being utilized to respond to climate change through laws, planning, and other projects.

Additional learning resources are identified in Appendix A. A glossary of key terms, definitions and core concepts is attached as Appendix B – important terms found throughout the document are defined in this section. The presentation delivered to the LAB & RC staff in Gatineau is attached as Appendix C.

A series of recommendations has been created as a result of this paper and will be presented at the 2019 LAB Annual General Meeting in Rama, Ontario.



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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Climate change represents an existential threat to humanity.

Since the Industrial Revolution, the actions of wealthy countries have caused global warming and have set humanity on a path towards climate catastrophe. As developing countries proceed along a fossil-fuel based energy development pathway, the risk to our climate increases.

Despite 30 years of international negotiations, climate change has yet to take hold in most places as a defining political issue. Communicating about climate change and raising awareness about the kinds of actions needed has proven to be very difficult. As the crisis becomes more urgent, new levels of advocacy at all levels are needed.

Indigenous people in Canada and throughout the world, who already live in a close interdependent relationship with nature, are likely to feel the effects of climate change the worst, while simultaneously having the least access to information, technology, finances and other resources to be able to respond or adapt. The risks and vulnerabilities are compounded for Indigenous women and girls. However, the resilience of indigenous people from 500 years of colonization will continue. Climate resilience and indigenous resurgence are interlinking motivations in the response to the climate crisis.

The Federal government has made commitments on behalf of all Canadians at the national and international level, both to prevent catastrophic climate change, and to uphold the rights of indigenous people. These two actions are reciprocal; indigenous ways of life, patterns of resource use, collective rights, stewardship ethics and indigenous systems of governance are interdependent with nature and the critical ecosystem services it provides (i.e. climate regulation). These vast, living cultural landscapes are at risk.





Federal, provincial and local governments, in their efforts to respond to this colossal challenge, have consistently failed to meet, or even establish, climate-related commitments.

First Nations communities have contributed little to the causes of climate change. Despite having already weathered the cumulative impacts of colonization, genocide and rapid environmental change, and despite facing systemic barriers to community development, First Nations are leading the way to a climate resilient future. They are doing so utilizing indigenous governance, laws, conservation strategies and other innovative pathways to sustainable development.

The Framework Agreement on First Nations Lands Management (FAFNLM) is an efficient and effective governance tool for indigenous communities in Canada, and will become critical in the fight against climate change. Without governance authority and management control over lands and resource, communities will not be able to respond effectively to climate-related challenges.

Signatory communities are utilizing their Land Codes to build governance capacity, establishing rules for and initiating sustainable development, engaging in collaborative planning and co-governance initiatives, and launching Indigenous-driven community, land-use and environmental planning processes founded on indigenous ways of knowing, being and doing.

The proposed expansion of the application of the FAFNLM to off-reserve areas, such as Aboriginal Title Lands, could bolster Canada's response to climate change. Research shows that Indigenous-led conservation efforts are more effective both in terms of cost and conservation outcomes. An expansion in the recognition of indigenous governance authority will signal Canada's willingness to further its commitments to fully implementing the United Nations Declaration on the Rights of Indigenous People (UNDRIP), and better position communities to assert their collective interests, protect their lands and resources, and resume their governance authority over their Territories.

Indigenous resurgence will continue to grow, and sectoral self-government initiatives such as FANFLM will continue to play an important role. Climate resilience will become, by choice or by consequence, a central concern in the governance of indigenous communities. As more communities express interest and become signatories to the FANFLM, so too will grow the demands for support, leadership and capacity development from both the LAB and FNLARC.





CHAPTER 1

TECHNICAL BACKGROUND

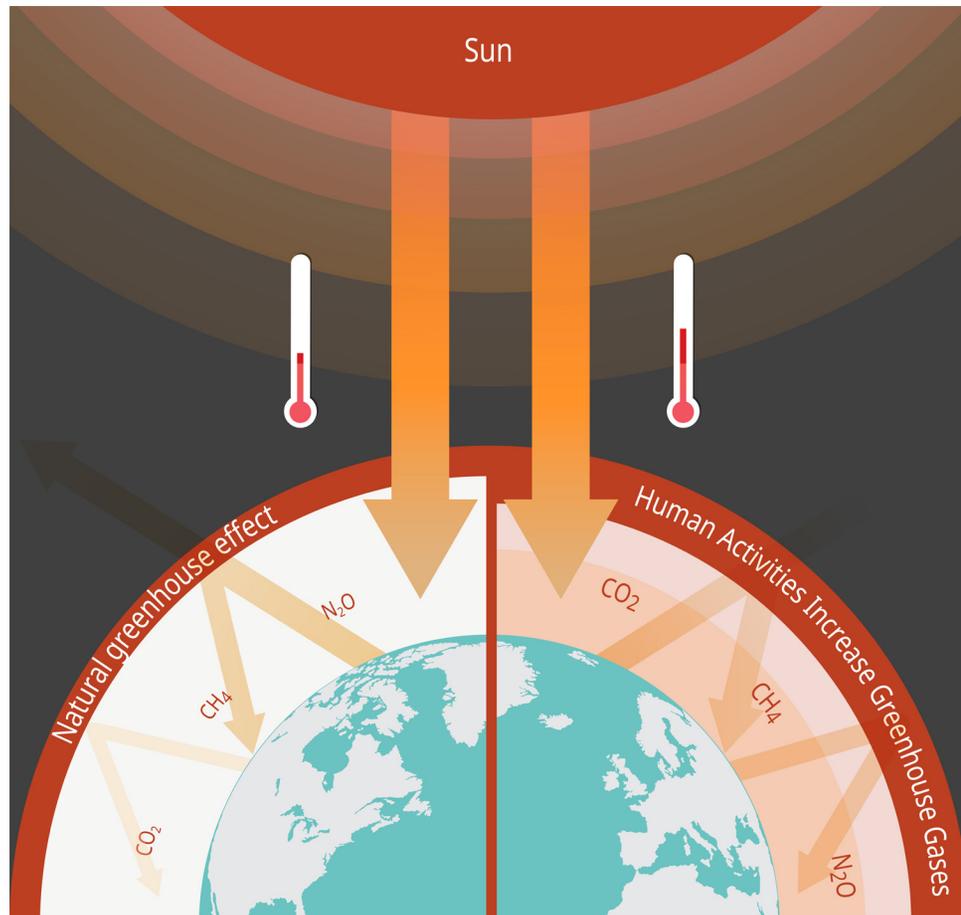
THE BASICS OF CLIMATE SCIENCE

"It is scientifically inconceivable that – after changing forest into cities, putting dust and soot into the atmosphere, putting millions of acres of desert into irrigated agriculture, and putting greenhouse gases into the atmosphere – humans have not altered the natural course of the climate system."

-American Geophysical Union, 2003

THE GREENHOUSE EFFECT

FIGURE 1: THE GREENHOUSE EFFECT. LICENSED FROM ADOBE STOCK.



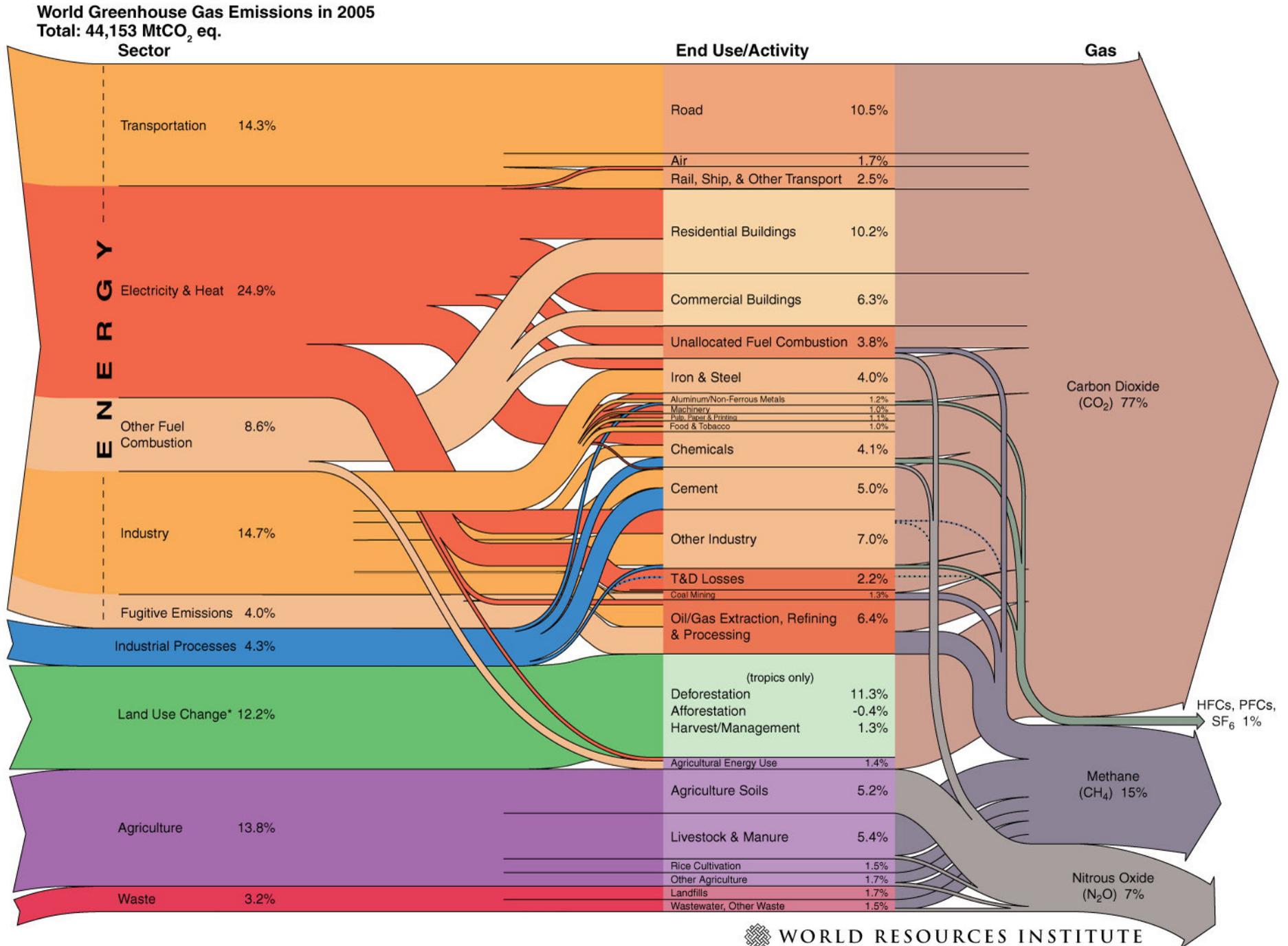
It is important to understand the science of climate change. While **weather** refers to what conditions we experience outside on a day-to-day basis, **climate** refers to trends in weather patterns over long time scales and at regional, national and global scales. Indigenous peoples have been adapting to changes in Earth's climate for thousands of years.

Climate change is a natural occurrence that typically spans over thousands of years. The four main influences of change in Earth's climate are (1) changes in Earth's orbit around the Sun, (2) variations in the output of energy from the Sun, (3) fluctuations in the upwelling of deep cold ocean water, and (4) changes in atmospheric composition. Carbon Dioxide is one of the main greenhouse gases that traps solar heat in the atmosphere, although others exist such as methane.

The **greenhouse effect** (see figure 1) is a function of Earth's atmosphere whereby greenhouse gases such as carbon dioxide retain heat from the Sun on Earth; historically this has made the planet habitable for life. Natural factors that contribute to atmospheric composition and the concentration of greenhouse gases include volcanic activities and forest fires. However, over the last 200 years, human activity (see Figure 2) has resulted in an increased concentration of greenhouse gases in the atmosphere, causing an intensification of the greenhouse effect, which results in accelerated global warming. It is estimated that the global mean temperature (GMT) has already risen approximately 0.87° C above pre-industrial levels (IPCC, 2019).

More information is provided in Appendix C.

FIGURE 2: GLOBAL GREENHOUSE GAS EMISSIONS BY SECTOR, 2005. SOURCE: UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO), 2011.



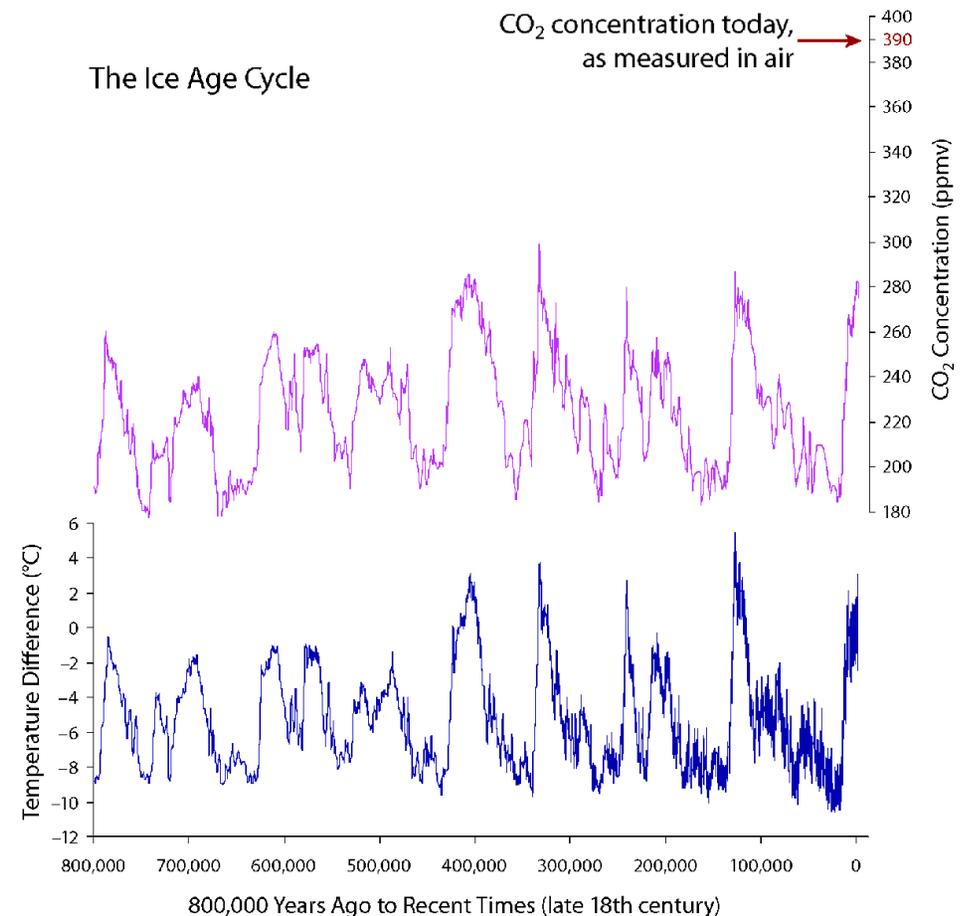
TEMPERATURE RECORDS

Written scientific records of temperature only began in the late nineteenth century; as such climate scientists only have on record a snapshot of Earth's climate. However, samples from arctic ice cores, tree rings and sea floor sediments have allowed climate scientists to better understand the correlation between atmospheric greenhouse gases, such as carbon dioxide, and global temperatures.

Global temperature is expressed as an average, or **global mean temperature** (GMT). Historical trends show that GMT rises and falls as the concentration of carbon dioxide in the atmosphere goes up or down. Figure 3 shows the correlation between global temperature and global atmospheric carbon dioxide concentrations over the last 800,000 years. Note that the current concentration of carbon dioxide in the atmosphere (now over 400 ppm) has never been higher in this period.

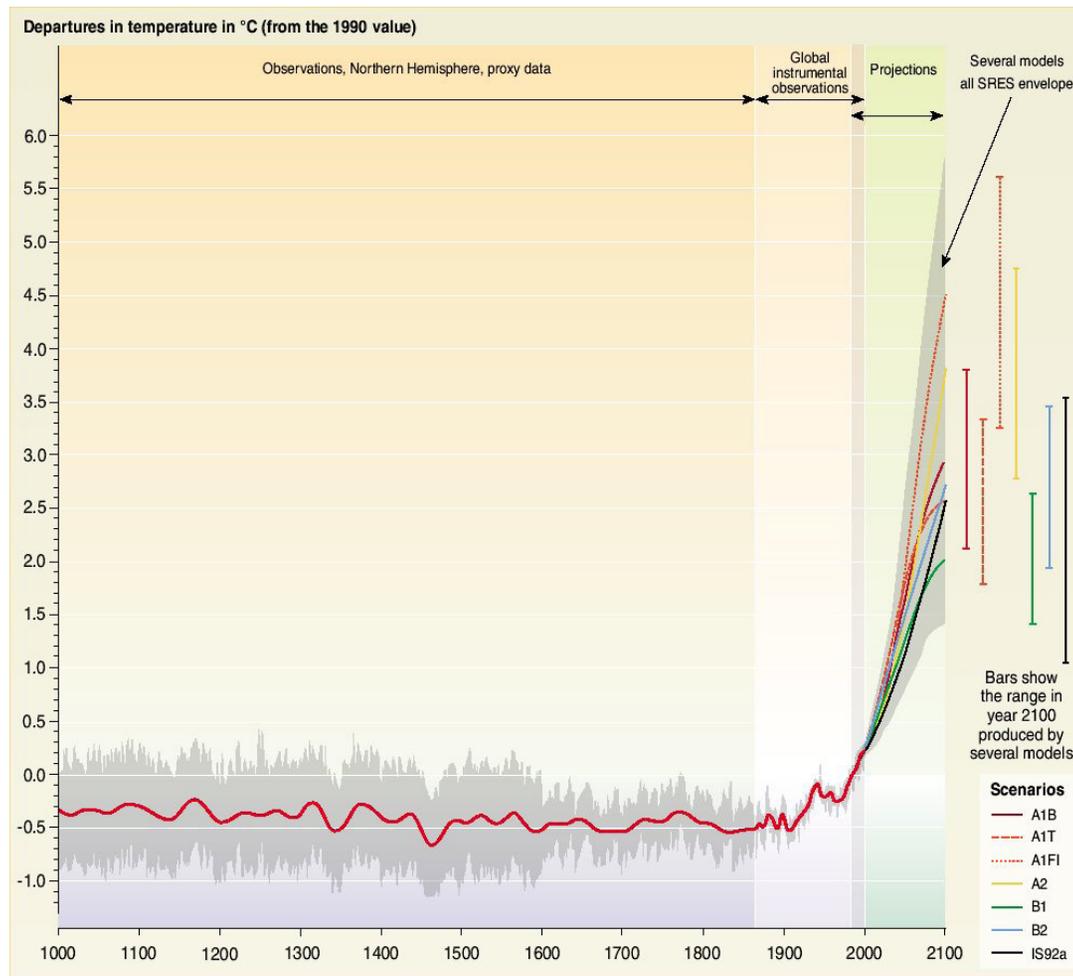
Eighteen of the nineteen warmest years all have occurred since 2001, with 2016 ranking as the hottest on record. Warming in Canada is occurring at twice the global rate. This changing climate associated with this warming is having grave consequences for indigenous communities all over the world.

FIGURE 3: VARIATIONS IN THE EARTH'S AVERAGE SURFACE TEMPERATURE, YEAR 1000-2100. SOURCE: UNESCO, 2011.



CLIMATE MODELS

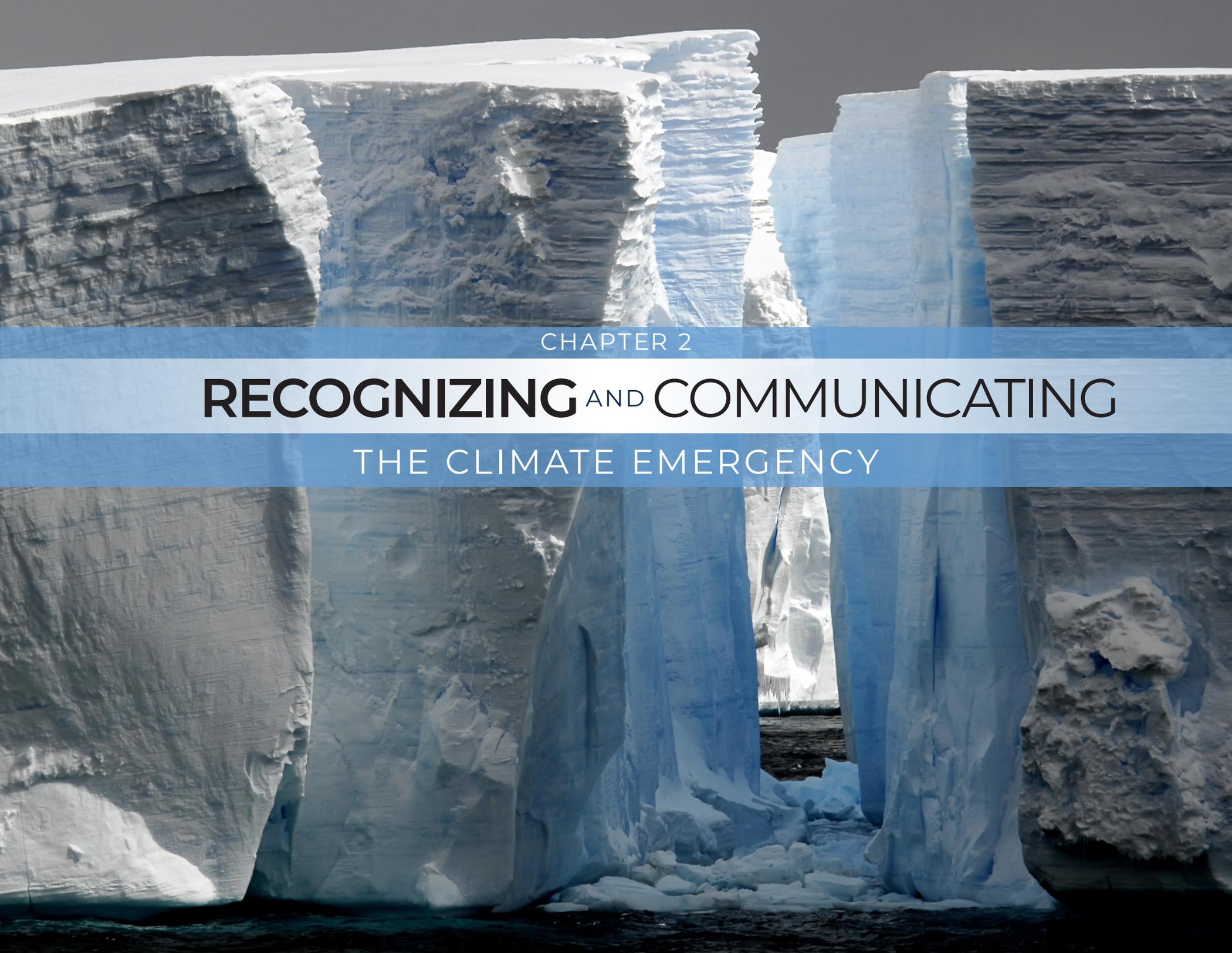
FIGURE 4: VARIATIONS IN THE EARTH'S AVERAGE SURFACE TEMPERATURE, YEAR 1000-2100.
SOURCE: UNESCO, 2011.



Climate scientists utilize climate models to predict future climate. Climate models are extremely complex and rely on supercomputers. They are based on the physical laws of thermodynamics that govern how energy and matter interact with one another, combined with mathematical equations to characterize these interactions in the ocean, atmosphere and land.

Climate models are first “hind-casted” to ensure their performance. This refers to the process of running the model from the present time into the past to see how accurately the models results match with observed climate changes shown in temperature records, ice core samples, etc. This allows scientists to check for accuracy and revise their equations if necessary.

Different climate scenarios are run through a model. The **Intergovernmental Panel on Climate Change** (IPCC) has developed a set of global scenarios called **Representative Concentration Pathways** (RCP), which describe different potential outcomes of human population growth, land-use changes, economic conditions, and atmospheric greenhouse gas concentrations (NOAA, 2019). Climate models analyze the data associated with each RCP to produce a range of probabilities related to climate, such as temperature rise, changes in precipitation, etc. Figure 4 shows predicted global temperature rise of between 1.5 and 6 degrees by the year 2100 based on the IPCC emission scenarios.



CHAPTER 2

RECOGNIZING AND **COMMUNICATING**
THE CLIMATE EMERGENCY

CLIMATE EMERGENCY

"There's one issue that will define the contours of this century more dramatically than any other, and that is the urgent threat of a changing climate."

-Barrack Obama

The climate crisis is the defining crisis of our generation. It has arrived and it is getting worse. We must not shy away from climate science and we must be realistic of where we are headed, where we need to be and what we need to do to avert disaster. In the late 1980's and early 1990's, world governments reached consensus about the threat of climate change and established a framework for limiting humanity's impact on the climate system (see Chapter 3 for more information). Despite 30 years of negotiations, the climate crisis has only worsened, and climate change has yet to become a defining political issue.

Governments, cities and organizations across the world, including the Government of Canada, the Union of BC Indian Chiefs (UBCIC) the Assembly of First Nations (AFN) and multiple local governments, have recently declared climate emergencies. While it is unclear what effect these declarations will have, it is an unmistakable indication of the public's growing understanding of the severity of impacts and a growing recognition of the need to ambitiously address climate change.

As a capacity building institute, the FNL MRC will play a growing role in supporting First Nation governance in the face of climate change. Communicating about, providing training and support around climate change, particularly for remote communities, requires skilled research, leadership, and innovative facilitation techniques. This chapter outlines some key messages around climate change and highlights the recent creation of the First Nations HUB for Lands Governance Planning (see below). The HUB is well suited to become the centre of climate-related outreach, training and support to FAFNLM signatories.



SEVERITY OF CLIMATE CHANGE

Global warming of 1.5° to 2° C doesn't sound like a very significant change. However, current emission trends are actually predicted to result in global warming of 4° C or more (UNEP 2018), likely triggering tipping points and positive feedback loops. Climate change will exacerbate pre-existing conditions and stresses on natural resources and wildlife. Ecosystems will shift, habitat loss will increase, oxygen and food production and water availability will diminish, and entire populations will be displaced as cities and regions become unlivable or inundated by rising sea levels.

ONLY COLLECTIVE ACTION WILL PREVENT CATASTROPHIC CLIMATE CHANGE

Cleaning up litter, consuming less plastic and driving less, while good for the environment, are not sufficient responses. While individual behaviors must change to curb demand for fossil-fuel based energy, climate change represents a systemic failure. Just 100 fossil-fuel companies are responsible for over 50% of global carbon emissions since the Industrial Revolution (CDP, 2017). More than ever, a political solution is needed to regulate virtually every sector of the economy.

MAKING SENSE OF AND RESPONDING TO CLIMATE DENIAL

The basic science of climate change and global warming has been well established for over a hundred years. There are social and psychological drivers for climate science denial, and there are common techniques and fallacies that climate deniers employ to distort climate science. Understanding this and the basics of climate science is critical in order to proactively address climate denial when it challenges our organization and the communities we support (see Appendix B for additional resources on Climate Denial).

SPEED OF WARMING

Anthropogenic (human-caused) emissions are causing global warming to increase at an alarming and accelerating rate. Climate change is no longer decades or centuries away from us, but is happening now.

We are already experiencing the effects of climate change and are locked into a certain amount of unavoidable global warming. Tipping points and positive feedback loops in Earth's climate system mean we could be locked into catastrophic global warming if we do not act immediately.

How much more warming will occur depends on our global response. Climate science tells us that we must act immediately and meaningfully to avoid catastrophic climate change. For example, to prevent global warming beyond 1.5 - 2° C, global emissions must peak by 2020 and fall to net zero by 2050.

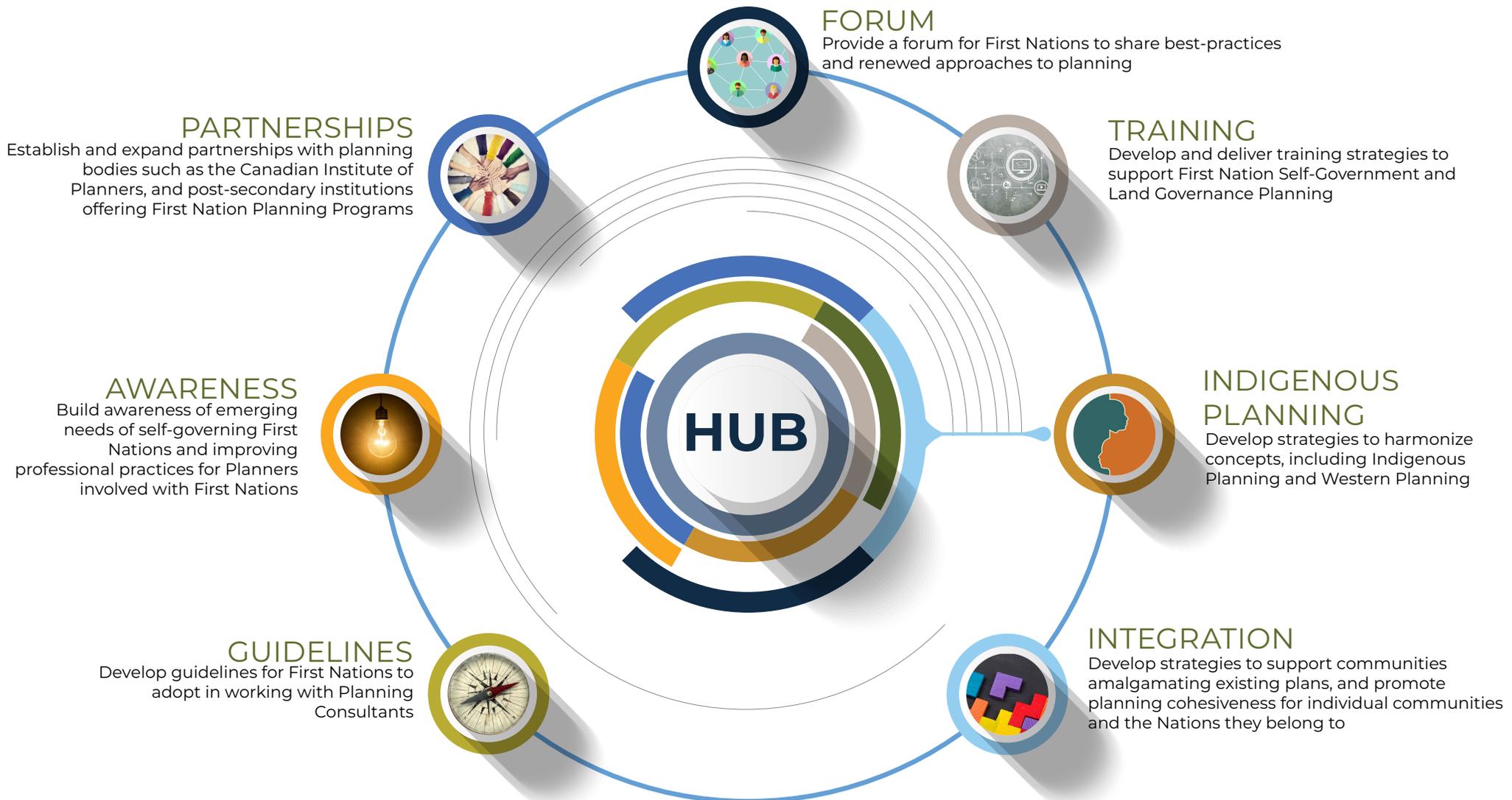
SCOPE OF IMPACTS

We cannot compartmentalize the impacts of a changing climate to a single type of event, e.g. sea-level rise, or flooding. Virtually every aspect of our lives depends on and now influences Earth's climate.

The effects of climate change are likely to exacerbate pre-existing environmental (habitat loss, species-at-risk, etc.) and social (migration, poverty, health, gender equality) issues. Extreme weather events will occur more frequently and less predictably.

The impacts on humanity will be all-encompassing and felt at all levels. As such our collective, global response must be equally all-encompassing (i.e. deep emission cuts in all sectors, new technologies, behavioral changes, and increased investment in low-carbon options).

First Nation HUB for Lands Governance Planning



Helping communities move away from the *Indian Act* by:

Decolonizing Land Use Planning in a New Era of First Nation Self-Government

Elevating and Re-establishing Traditional Indigenous Planning Practices

Promoting Cohesive and Holistic Environmental Planning informed by Climate Change



CHAPTER 3

INTERNATIONAL AND **CANADIAN**
CONTEXT OF CLIMATE CHANGE

UNITED NATIONS  NATIONS UNIES

INTERNATIONAL CLIMATE TALKS

"Indigenous peoples have the right to participate in decision-making in matters which would affect their rights."

-Article 18, United Nations Declaration on the Rights of Indigenous People (UNDRIP)

Canada is a part of a massive, albeit slow, global effort to combat climate change, called the United Nations Framework Convention on Climate Change (UNFCCC). The main purpose of the UNFCCC is to "avoid dangerous human interference in the climate system (UNFCCC, 2019). It was developed in 1992 at the Earth Summit in Brazil, along with two other important international conventions, regarding desertification and biological diversity. The three conventions are closely interlinked and work together. By participating in these discussions, Canada agrees to make climate and development-related commitments at the national level that are intended to align with the goals and objectives established at the international level.

Canada's actions are annually reported on and evaluated against important standards and objectives; these commitments are reported to the various entities of the United Nations (UN) that operationalize the conventions.

This section explores the UNFCCC in more depth. Note that Indigenous communities have not had adequate representation at these discussions, and lack decision-making power when it comes to implementing actions on national and state levels, despite progress made with UNDRIP, deliberate attempts of inclusion by indigenous organizations and other non-governmental organizations, and demonstrable successes by indigenous communities in contributing to climate change resilience.





UNFCCC

United Nations Framework Convention on Climate Change

- Came into force in 1994
- Near universal membership
- Canada is a signatory

Purpose: To prevent humanity's dangerous interference with Earth's climate systems

UNCCD

United Nations Convention to Combat Desertification

- Came into force in 1996
- Near universal membership
- Canada is a signatory

Purpose: To combat desertification and mitigate the effects of drought through national action programs.

UNCBD

United Nations Convention on Biological Diversity

- Came into force in 1993
- Near universal membership
- Canada is a signatory

Purpose: To promote the conservation of biological diversity, to promote the sustainable use the components of biological diversity, and to promote the fair and equitable sharing of benefits arising from genetic resources.

UNDRIP

United Nations Declaration on the Rights of Indigenous People

- Adopted in 2007
- Officially adopted by Canada

Constitutes the minimum standards for the survival, dignity and well-being of indigenous people



According to the UNFCCC, industrialized, developed countries (known as Annex 1 countries), including Canada, have an ethical burden to address climate change and support, both financially and technologically, developing nations to do the same. It is recognized that wealthy nations “are the source of most past and current greenhouse gas emissions” (UNFCCC, 2019), although developing countries such as Brazil, India and China contribute significant emissions. The UN also recognizes that economic development is vital to the world’s poorest countries, that climate change is the biggest threat to achieving sustainable development, and that wealthy, developed countries must help contribute to sustainable development.

This ethical responsibility of developed nations is at the heart of a core concept known as climate justice.



SUSTAINABLE DEVELOPMENT

In 2015 at the United Nations Sustainable Development Summit in New York, the member states of the UN adopted the **2030 Agenda for Sustainable Development**, guided by 17 sustainable development goals (SDG); see figure 5, below. Together with the UNFCCC and other conventions and agreements, the UN has attempted to provide a roadmap for sustainable, low-carbon and resilient development under a changing climate, ensuring that developed countries provide adequate support for developing countries, and ensuring that important socio-economic conditions improve, particularly for the world's poorest people and for indigenous people (UNFCCC 2019).

FIGURE 5. SUSTAINABLE DEVELOPMENT GOALS AS OUTLINED IN THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT. SOURCE: UNITED NATIONS DEVELOPMENT PROGRAMME, 2019.



What does sustainable development mean for First Nations in Canada? With First Nation land under enormous developmental pressures, the concept of sustainability requires careful consideration within each community. In a carbon constrained economy, sustainable development will not simply mean development with green features. Climate-friendly development will be those projects that incorporate the SDG's and either have a net zero or negative greenhouse gas contribution.

However, if First Nations in Canada are to embark upon a climate-resilient development pathway, support is needed to develop the capacity and governance tools for communities to properly assess and regulate development on their lands, including the ability to enforce greenhouse gas emission standards.

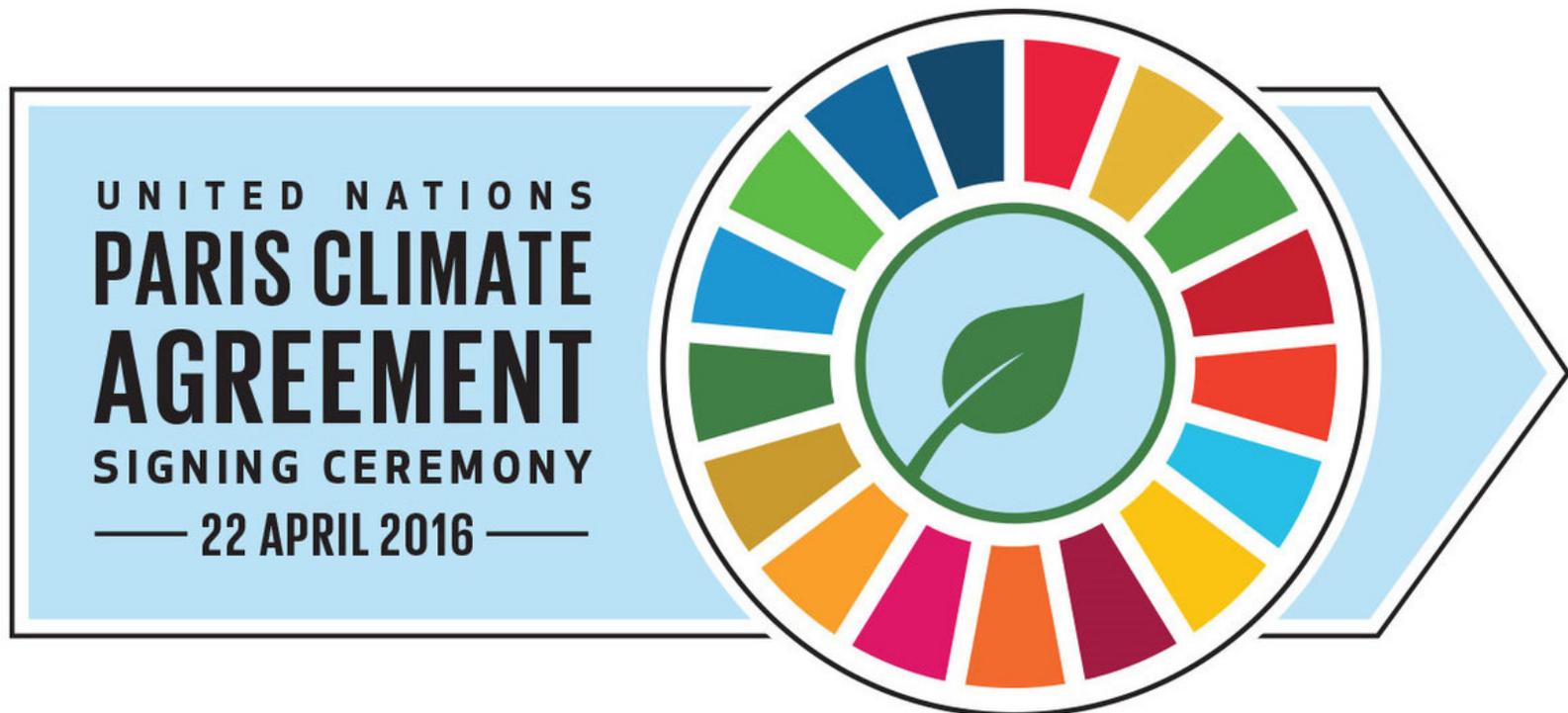
PARIS AGREEMENT

Annex 1 countries are required by the UNFCCC to make emission reduction commitments (known as Nationally Determined Contributions, or NDC's), report regularly to the UNFCCC on their climate-related policies and measures, and submit annual inventories of greenhouse gas emissions. Developing countries are also required to report and submit inventories, though this is contingent upon adequate funding being made available to them to do so. Each year, signatories to the UNFCCC meet at the annual Conference of the Parties (COP) to hold climate-related talks. At COP21 (i.e. the 21st gathering of the COP) in Paris, 2016, world leaders signed the Paris Agreement.

The main purpose of the Paris Agreement is to commit signatory countries to strengthen the global response to climate change by limiting the global temperature increase to less than 2° Celsius (C), and to make substantial commitments to try to limit warming to 1.5° C. The difference between 1.5° and 2° C warming is substantial and is explored further below.

Other key points of the Paris Agreement include:

- Acknowledgement of the important role of indigenous people and traditional knowledge in climate adaptation policies
- Developed countries must continue to take the lead and provide financial resources to help developing countries
- Developed countries must provide \$100 billion for climate-related financing to developing countries starting in 2020
- Aiming for greenhouse gas emissions to peak as soon as possible, and achieving rapid reduction in emissions by 2050
- A review of national commitments every five years (the first one starting in 2023)
- Recognition of the specific needs of vulnerable countries, including small islands developing states



1.5° C GLOBAL WARMING

The difference between 1.5° and 2° in terms of projected impacts is substantial. The Intergovernmental Panel on Climate Change (IPCC), the body created by the United Nations Environment Programme (UNEP) for assessing the science related to climate change, released a much-anticipated report in October 2018 that summarizes over 6,000 published articles from climate scientists all over the world. This report (IPCC 2018) urges countries to commit to limiting global warming to 1.5° C and presents the scientific evidence to explain the difference between 1.5°C and 2.0° C global warming as follows:



A limit of 1.5° C global warming means less extreme weather where people live

By 2100, sea level rise would be 10cm lower with 1.5° C of warming as compared to 2°. This means that 10 million fewer people exposed to sea level rise



1.5° C warming has a lower impact on biodiversity and species extinction, with lower risk to fisheries and the livelihoods that depend on them

There would be a smaller reduction in crop yields with a limit of 1.5° C warming



Global population exposed to water shortages would be 50% less with global warming of 1.5° compared to 2° C

Several hundred million fewer people would be exposed to climate-related risk and be susceptible to poverty by 2050 with a limit of 1.5° C warming



Current climate models predict that, based on a business-as-usual scenario for existing trends in emissions and land-use, we could be facing global heating of 4° Celsius or more by the year 2100 (Vince 2019). Such a change in Earth's average temperature would have cascading effects and be catastrophic for virtually every species living on the planet (World Bank, 2012). Greenhouse gas emissions must peak by 2020 and begin an immediate decline, reaching net zero by approximately 2050. According to the IPCC, at our current rate, we will reach 1.5° C of warming between 2030 and 2052, but warming will continue to rise, possibly out of control, if emission trends do not decline.

THE CANADIAN CONTEXT

Canada represents roughly 0.5% of the world's population but is annually responsible for about 726 megatonnes (Mt) of greenhouse gas emissions, or approximately 1.6%, of global emissions.

This puts Canada among the top 10 global emitters both in terms of total emissions and on a per capita basis.

Little data exists for GHG emissions from First Nation and indigenous communities in Canada, though it is likely that the GHG contribution from these communities is very small, both in terms of total emissions and on a per capita basis. For inventorying and reporting on national GHG emissions, Canada relies on accounting for natural carbon storage through land-use, land-use change and forestry (LULUCF). Where do indigenous rights and governance roles fit into this picture?

The four largest emitting provinces in Canada are Alberta, Ontario, Quebec and Saskatchewan. Alberta and Saskatchewan have per capita emissions that are nearly the highest in the world, at 68 and 67 tonnes per person per year, respectively.

BC, Ontario, and Quebec have per capita emissions of around 10-14 tonnes per person, which is in line with some countries in Europe.

The difference between provincial emissions is largely due to demographics, economic and political circumstances, and the distribution of natural resources.

Provinces that have emissions reduction targets for 2020 and 2030 vary widely across Canada. Even if all these targets were met, total Canadian emissions would still be well above Canada's targets for 2020 (622 Mt) and 2030 (525 Mt) (Boothe and Boudreault, 2016).



Reports commissioned and performed by the Government of Canada (see figures 8, 9 and 10, below) have found evidence of climate change already widespread in Canada. The Auditors General found that Canada will not meet its 2020 emissions reduction target (17% below 2005 emissions), and that 7 out of 12 provinces and territories did not even have a target for reducing emissions. The report also found that governments are not fully assessing the risks of climate change, are not coordinating their actions across jurisdictions, and are not reporting on their progress in regular and timely manners. Canada's target for 2030 (30% below 2005 emissions) cannot be reached without substantial investment and coordination across the country, far beyond what is currently taking place (Office of the Auditor General of Canada, 2018; Lewis, 2019).

Climate change is projected to intensify in Canada:

- Several major areas of risk have been identified, including agriculture and food, water, fisheries, forestry, geopolitical dynamics, governance, capacity, human health & wellness, physical infrastructure, coastal communities, northern communities and Indigenous ways of life
- Warming in Canada is on average occurring at double the rate of global warming
- While precipitation is expected to increase for most of Canada, summer rainfall may decrease in some areas, leading to an increase risk of water shortages in the summer
- Warming is predicted to intensify extreme weather events
- Coastal flooding is expected to increase due to sea-level rise and areas of the Arctic and Atlantic Ocean will experience longer and more widespread sea-ice-free conditions (Bush and Lemmen, 2019; Council of Canadian Academies, 2019).



FIGURE 8: REPORT COMPLETED BY ECCC, DFO AND NRCAN.
SOURCE: BUSH AND LEMMEN, 2019.

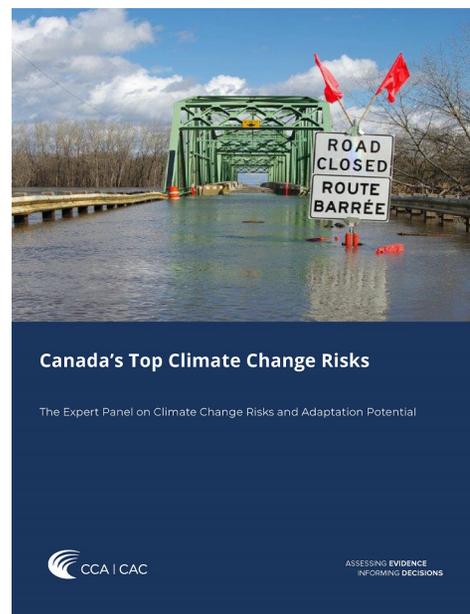


FIGURE 9: REPORT COMMISSIONED BY THE TREASURY BOARD OF CANADA IN 2019.
SOURCE: COUNCIL OF CANADIAN ACADEMIES, 2019.

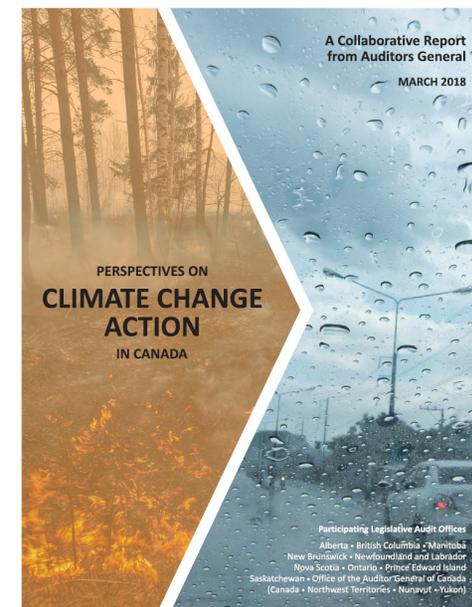


FIGURE 9: A COLLABORATIVE REPORT FROM CANADA'S AUDITORS GENERAL.
SOURCE: OFFICE OF THE AUDITOR GENERAL OF CANADA, 2018.

The Federal Government's Pan Canadian Framework on Clean Growth and Climate Change (PCF) represents Canada's Nationally Determined Contribution (NDC), or its commitment to the obligations outlined in the UNFCCC (Government of Canada, 2019).

The PCF establishes Canada's plan to meet its established emission reduction targets, achieve economic growth and increase climate resilience in Canada. Among the pillars of this framework is Canada's commitment to "renewed nation-to-nation, government-to-government, and Inuit-to-Crown relationships with First Nations, the Metis Nation and Inuit...consistent with the Government of Canada's support for the United Nations Declaration on the Rights of Indigenous People" (Government of Canada, 2019).

The PCF establishes a Canadian Centre for Climate Services, which will work with provincial, territorial governments, indigenous peoples and others to support adaptation decision-making. It includes billions in funding for low carbon economic growth, supporting green infrastructure, public transit and clean technology.

Without meaningful progress on climate change, indigenous rights & interests are being put further at risk. Without meaningful involvement in the conception, design and implementation of climate policies & strategies, based on the full implementation of UNDRIP, indigenous peoples face a potential further undermining of their rights and interests through climate action.

Canada must support First Nations along a climate resilient development pathway that aligns with existing international commitments, including UNDRIP and the Sustainable Development Goals.

PAN-CANADIAN FRAMEWORK



on Clean Growth and Climate Change

Canada's Plan to Address Climate
Change and Grow the Economy

An underwater photograph of a stream with a rocky bed. Several salmon are visible, showing their characteristic pink and red colors. The water is clear, and the sunlight creates shimmering patterns on the rocks. A single white leaf is floating near the top left.

CHAPTER 4

THE INTERSECTION OF INDIGENOUS RIGHTS
AND THE CLIMATE EMERGENCY

CULTURAL AND ECOLOGICAL INTERDEPENDENCE

Ecosystems and indigenous cultures are interdependent. Indigenous people interact with and shape some of the most ecologically diverse landscapes in Canada and throughout the world, through patterns of resource use and governance systems. Indigenous peoples have adapted to a changing climate since time immemorial and have struggled with rapid environmental changes since colonization and expansionist, capitalist economies began transforming indigenous territories. Indigenous people are already among the most marginalized, vulnerable and impoverished people in the world, and due to this close relationship and interdependence with nature, rapid changes associated with climate change will impact the use, protection and management of important species and areas, affecting the cultural, economic and ecological relationship that indigenous peoples hold. Indigenous people will undoubtedly bear the brunt of the climate catastrophe, yet they have minimal access to resources to cope with the risks and impacts (International Work Group for Indigenous Affairs, 2008). Below is a summary of the known and suspected impacts from climate change on indigenous communities in Canada (Council of Canadian Academies, 2019). See Appendix C for more information.

LOSS OF OPPORTUNITIES AND CONNECTION

Less ability to practice cultural activities such as hunting, harvesting, fishing and foraging. Rapid fluctuations and unpredictable changes in the environment lead to a loss of connection with the land.

FOOD SOVEREIGNTY AND ECOLOGICAL RISKS

Less access to wildlife, shifting ecosystems, altered harvesting cycles, impacts to important species and species-at-risk, Impacts on water quality/quantity, air quality, increase in invasive species, decrease in the provision of critical ecosystem services

HEALTH & WELL-BEING AND THE POTENTIAL FOR HARM

Climate-driven changes to the environment are negatively affecting mental health and well-being, exacerbating existing stresses and problems, such as the suicide crisis. Increase risks from extreme weather, disasters and in performing traditional activities (e.g. hunting on sea ice or during unpredictable extreme weather)

RELIABILITY OF TRADITIONAL KNOWLEDGE

Ecosystem changes are occurring so rapidly that indigenous peoples are finding it more difficult to predict natural processes. Elders report that within one generation, climate change has made the environment unpredictable, decreasing the reliability of traditional knowledge

THE ECONOMY, HOUSING & INFRASTRUCTURE

Need for well-built, energy efficient and climate-resilient buildings. Services (water, sewer, gas, electricity, solid-waste and waste water, security & enforcement) will be strained. Transportation, connectivity and accessibility will be stressed, particularly in remote communities. Impacts to resource development, tourism, energy production and consumption will impact economies

CULTURAL IMPACT

Climate change is affecting the integrity and social cohesion of indigenous cultures and economies. Indigenous languages, traditional activities, intergenerational knowledge transfer, sacred and heritage sites are all at risk

“Recognizing indigenous peoples’ rights to their territories and resources is the most effective way to safeguard biological diversity and protect the ecological integrity of critical ecosystems. Ecological knowledge systems and resource management strategies of indigenous peoples play a key role in implementing truly sustainable conservation strategies and policies.”

-United Nations Permanent Forum on Indigenous Issues (UNPFII, 2018).



INDIGENOUS PROTECTED AND CONSERVED AREAS

The protection of nature is vital in the response to the climate crisis. In combination with reducing greenhouse gas emissions to net zero by 2050, the conservation of nature and the preservation of critical ecosystem services (e.g. carbon storage, food production, habitat quality, air and water purification, etc.) forms an integral part of the international response to climate change.

The Aichi Biodiversity Targets, established through the United Nations Convention on Biological Diversity (UNCBD), require countries, including Canada, to conserve 17% of terrestrial and inland water, and 10% of coastal and marine areas by 2020 (Convention on Biological Diversity, 2019). Leading conservation scientists are issuing calls for a “Global Deal for Nature” (GDN) that maintains and restores at least 50% of the Earth as intact natural ecosystems by 2050 (Science Advances, 2019).

The UNPFII has recognized that conservation strategies can actually put indigenous rights & interests further at risk, and can lead to increase harassment and criminalization of indigenous peoples when they defend their territories or exercise their rights over lands and resources (UNPFII, 2018). However, when conservation is driven by indigenous people, it can achieve multiple positive outcomes, including increased climate resilience and the promotion and protection of indigenous rights.

Examples of successful initiatives include indigenous led conservation in Costa Rica, the recognition of the rights of the Whanganui River in New Zealand, and indigenous led conservation in Canada including the Gwaii Haanas National Park Reserve on Haida Gwaii, the Great Bear Rainforest, and the Tribal Parks of the Tla-o-qui-aht First Nation on Vancouver Island.

BENEFITS OF INDIGENOUS-LED CONSERVATION (SOBREVILA, 2008; ICE, 2018)

PRESERVING ANCESTRAL KNOWLEDGE

ADDRESSING CLIMATE CHANGE

ACHIEVING NATIONAL TARGETS & INTERNATIONAL COMPLIANCE

RECOGNITION AND EXERCISE OF INDIGENOUS JURISDICTION

RESTORING, RECONCILING & HEALING

ADDRESSING THE CAPACITY GAP

Research demonstrates that indigenous led-conservation initiatives are more effective than neighboring projects such as parks or other management areas in conserving species and vital ecosystem services, they are more sustained and cost effective, they promote participation, cooperation and co-governance, and they advance cultural revitalization and reconciliation (Sobrevila, 2008).

Indigenous communities possess intimate knowledge of ecological systems which is built into the governance orders that maintain those ecosystems. Indigenous place-based philosophies help ensure and reinforce the interdependence of humanity and nature.

Despite the recognition of the importance of traditional knowledge, the impacts on traditional knowledge resulting from climate change, and the effectiveness of indigenous jurisdiction in conserving and maintaining vital ecosystems, indigenous peoples are not acknowledged and are overlooked in the conceiving and designing of climate change strategies (International Work Group for Indigenous Affairs, 2008).

The participation of indigenous peoples in shaping new economies and governance systems is necessary in the response to climate change. Agreements made under UNFCCC should be made in full conformity with UNDRIP and the principle of Free, Prior and Informed Consent (FPIC).

Canada must lead by example in ensuring that indigenous peoples are fully and effectively involved in the conception, design and implementation of climate change strategies.

Indigenous communities in Canada are already faced with a huge capacity shortfall. The FAFNLM has been quite successful in re-building indigenous governance and management capacity over reserve lands and resources. Yet ongoing capacity gaps affecting governance, planning, environmental protection, law development, compliance and enforcement, dealing with legacy issues from the *Indian Act*, and more will intensify from climate change. Responding to climate change must include adequate and sustained funding, training, support and leadership.





CHAPTER 5

COMMUNITY RESPONSES TO THE CLIMATE CRISIS

UTILIZING THE FRAMEWORK AGREEMENT

Signatory First Nations are seeing the benefits of the FAFNLM as an effective governance tool in the response to climate change. Along with recognition of governing authority, the FA offers a unique and well-established means for communities to move away from the *Indian Act* and to exercise their own authority over their lands and resources, with the added support of the LAB and FNL MRC on important governance issues like climate change.

Founded on the principles of community participation, accountability, and transparency, the FAFNLM empowers communities with core governance tools vital to sustainable development in an era of climate disruption.

PLANS, LAWS AND STRATEGIES

- Climate-informed Planning
- Comprehensive Community Planning
- Land-Use Planning
- Environmental Management Planning
- Environmental Assessment and Protection Laws
- Climate Action Strategies, Stewardship Strategies, Conservation Plans
- Flood Protection Laws
- Development standards and procedures

ENVIRONMENTAL STANDARDS

- Setting environmental standards that meet or beat Federal and Provincial regulatory requirements,
- allowing for meaningful enforcement and penalties against serious environmental infractions

AUTHORITY TO INVEST

- Authority to invest in new, low-carbon economic opportunities without Canada's approval
- renewable energy
- net-zero and passive housing options
- energy-efficient buildings

AUTHORITY OVER SPENDING

- Authority to direct Own Source Revenue towards capital projects without Canada's approval
- Climate change adaptation initiatives (e.g. infrastructure upgrades, flood mitigation projects, wildfire prevention, ecological restoration, etc.)

PARTNERSHIPS AND COLLABORATIONS

- Authority to enter into partnerships and agreements (e.g. Universities, local government, private companies) to address community-specific climate concerns
- Capacity regained to function as a governing authority, gain leverage, respond to challenges and take advantage of opportunities

FLEXIBILITY

- No one size fits all approach, each community can respond to issues as needed
- Flexibility to utilize "Two-Eyed Seeing" and incorporate the best of both Traditional Knowledge and Western Science into planning, governance and decision-making

LEADING THE WAY

First Nations continue to lead the way on climate-resilience and adaptation. Utilizing the tools of the FAFNLM, the following communities provide a small snapshot of the projects being undertaken by First Nations in response to climate change.



INTEGRATING ABORIGINAL TRADITIONAL KNOWLEDGE AND SCIENCE TO MONITOR CLIMATE CHANGE
MAGNETAWAN FIRST NATION

A community-driven project that embodies the principle of “Two-Eyed Seeing” by bringing together the knowledge of the elders with modern science. With funding from Indigenous Services Canada (ISC), a partnership was formed between Magnetawan First Nation, McMaster University, Laurentian University, Boreal Water Futures and Anishinabek/Ontario Fisheries Resource Centre to learn about the impact of climate change on significant, at-risk indigenous lands and species. The project will involve elders and youth (Mosna 2018).



CLIMATE OBSERVATORY
GEORGE GORDON FIRST NATION

With funding from ISC, George Gordon First Nation constructed a weather station in winter 2018 that will inform the community in real time of environmental changes occurring in their territory. Data will be collected from the weather station to initiate and inform a community conservation strategy (CIRNAC/ISC 2019).



LONG-TERM HYDROLOGICAL MONITORING PROGRAM TO MEASURE CLIMATE CHANGE IMPACTS
KATZIE FIRST NATION

Katzie will be developing a long-term hydrological monitoring program to study changes in water quality and quantity, the distribution and breeding of plants, fish, amphibians and birds and their association with climate change (ibid).



Tsleil-Waututh Nation
PEOPLE OF THE INLET

LAND USE PLAN **TSLEIL-WAUTUTH NATION**

Tsleil Waututh Nation recently completed and adopted their Land Use Plan utilizing their Land Code. The LUP references the TWN Stewardship Policy, a territorial declaration of Aboriginal Rights & Title for TWN which guided TWN's independent Environmental Assessment of the proposed Trans Mountain Pipeline Expansion project. The LUP also contains a section on climate change and commits TWN to further planning to mitigate against and adapt to climate-related impacts and vulnerabilities of TWN reserve lands, setting targets, milestones and measurable indicators of success, reducing TWN's contributions to climate change, engaging and educating TWN members about climate change, and conducting continual monitoring of both climate impacts and TWN's responses.



WIND FARM **HENVEY INLET FIRST NATION**

Henvey Inlet First Nation (HIFN) partnered with Pattern Canada to jointly develop a 300 Megawatt wind project, the largest of its kind in Ontario and the largest First Nation wind partnership in Canada. The project created more than 1000 on-site jobs during construction, 20 permanent jobs for operations and maintenance, annually produces enough electricity to power over 100,000 homes, and provides annual, stable revenue for HIFN (Henvey Inlet 2019).

These are just a few examples of what FA signatory communities are doing to respond to and prepare for climate change. While more and more communities move out of the *Indian Act* into self-government and start to think about and plan for climate change, the impacts associated with climate disruption will become more severe and opportunities for meaningful action will be missed unless drastic action is taken both in the spirit of climate resilience and reconciliation.

The demands on the LAB and FNLRC will grow. As the signatories to the FAFNLM consider amendments that could expand the scope of the FAFNLM, communities will look more and more to indigenous institutions for leadership, training and support, networking and knowledge sharing. The FNLRC and the First Nation HUB for Lands Governance Planning are currently developing and delivering curriculum and training around climate change. Canada must take advantage of this opportunity to advance indigenous jurisdiction in response to this climate emergency and provide sufficient, sustained and predictable funding and capacity support for indigenous communities and organizations.

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APPENDIX A

RESOURCES FOR FURTHER LEARNING

LEARNING RESOURCES

[Climate Change Starters Guidebook: An Issues Guide for Education Planners and Practitioners](#). Published by UNEP, UNESCO, WHO and others. An excellent resource for educating about climate change, climate science, adaptation and mitigation.

[NASA - Climate](#)

Features up to date information, news, and indicators related to climate change.

[Pacific Climate Institute Climate Insights](#)

Provides free short courses on climate change.

[Canadian Climate Atlas](#)

Features Canadian-specific information on climate change, including climate change projections, high resolution maps, and local data for download.

[Indigenous Climate Action Network](#)

A Canadian-based not-for-profit organization focused on indigenous-led climate justice organization.

[Federation of Canadian Municipalities toolkit](#)

A toolkit for Municipalities and First Nations to work together on economic partnerships.

[Canadian Institute of Planners Policy on climate-informed planning](#)

The Canadian Institute of Planners (CIP) has developed a climate change policy for its members, to help better define the role of planners in meeting the complex challenge of climate change and building resilient communities.

[Understanding Climate Science Denial](#)

Short course on understanding climate science denial.

[Climate Change and First Nations: Recommendations for Action.](#)

Report prepared by the Centre for Indigenous Environmental Resources for the Assembly of First Nations, 2006.



APPENDIX B

GLOSSARY DEFINITIONS

AND CORE CONCEPTS



GLOSSARY, DEFINITIONS AND CORE CONCEPTS

2030 Agenda for Sustainable Development

Represents a global agenda for sustainable development captured by 17 sustainable development goals (SDG), including climate action, reducing poverty, promoting gender rights, education, clean water, and more. The SDG's set the global sustainable development agenda until 2030, replacing the Millennium Development Goals (MDG), the framework for which expired in 2015.

Aichi Biodiversity Targets

Developed at the tenth meeting of the Conference of the Parties to the UN Convention on Biological Diversity (UNCBD) in Aichi, Japan, the Aichi Targets outlines 20 targets categorized into 5 strategic goals that signatories to the UNCBD agree to work towards, including: addressing the underlying causes of biodiversity loss, reducing direct pressure on biodiversity and promoting sustainable use, improving the status of biodiversity, enhancing the benefits provided by biodiversity and ecosystem services, and enhancing implementation through participatory planning. Notably, target 11 states that by 2020, signatories will protect 17% of terrestrial and inland water and 10% of coastal marine areas with high biodiversity and ecosystem services.

Carbon Source

Any process or activity, natural or human, that releases a greenhouse gas into the atmosphere, e.g. volcanoes, forest fires, fossil-fuel combustion.

Carbon Sink

A reservoir that takes up and stores carbon dioxide and other greenhouse gases, such as a forest, grassland ecosystems, the ocean, or artificial technologies such as carbon capture and sequestration.

Climate

Climate refers to the statistical properties of weather over time (ranging from months to decades or more), and includes average conditions and the range of variability, as well as the frequency of extreme events (see also weather).

Climate Justice

Expands the framing of climate change beyond simply environmental to one involving ethics, justice, equality, human rights and collective rights. A fundamental principle of climate justice is that those who are least responsible for causing climate change will likely suffer its gravest consequences. Those who are responsible for causing climate change have an ethical responsibility to play a lead role in combating climate change, adapting to climate change and building climate resilience.

GLOSSARY, DEFINITIONS AND CORE CONCEPTS (CONTINUED)

Climate Adaptation

Climate adaptation is reactive and refers to tackling the effects of climate change, such as the introduction of drought tolerant crops, building designs that are resilient to extreme weather, building flood-related infrastructure such as dikes, and conserving and restoring ecosystem services.

Climate Mitigation

Climate mitigation is proactive and refers to preventing climate change by reducing greenhouse gas emissions. This can be done through using low or no carbon energy sources, increasing energy efficiency and energy savings, utilizing carbon capture and storage, extending carbon sinks, and promoting low-carbon lifestyle and consumer choices.

Climate-resilient development pathways (CRDP)

CRDP's are emission reduction trajectories that reduce the threat of climate change through ambitious mitigation, adaptation and climate-resilience, but also strengthen sustainable development at multiple scales and efforts to eradicate poverty through equitable societal and systemic transitions and transformations.

Climate Risk

The potential for adverse consequences from a climate-related hazard for human and natural systems, resulting from the interactions between the hazards and the vulnerability and exposure of the affected system. Risk integrates the likelihood of exposure to a hazard and the magnitude of its impact. Risk can also describe the potential for adverse consequences of adaptation or mitigation responses to climate change.

Climate trend

a progressive change in the state of climate based on weather statistics evaluated over long periods of time, typically 30 years.

Conference of the Parties (COP)

Refers to a governing body of a UN Convention, such as the UNFCCC, UNCBD or UNCCD.

Desertification

A type of land degradation that occurs as dry land becomes a desert, caused by the over exploitation of soil resources by humans, and as global warming increases temperatures and decreases precipitation in certain areas.

GLOSSARY, DEFINITIONS AND CORE CONCEPTS (CONTINUED)

Ecosystem Services (ES)

The services that humans gain from natural ecological systems. Typically these are categorized into supporting services (e.g. nutrient cycling, soil formation), provisioning services (e.g. food production, natural medicines, energy and raw materials), regulating services (e.g. climate regulation, water and air purification, predation, pest and disease control), and cultural services (e.g. cultural and spiritual uses, recreation, science and education, and therapy). The concept of ES is being used as a mapping and valuation tool to elevate the value of nature and natural infrastructure, which is usually externalized and unaccounted for in modern economic accounting.

Extreme heat and heatwaves

High temperatures and high humidity extended over days at a time. The projected number of extreme heat days is projected to double in Canada over the next 30 years. Extreme heat is hazardous to human health, and vulnerable populations include the elderly, young children, people with chronic illnesses, people who work and exercise in heat, homeless people and low-income earners. Heat waves can also be damaging to agriculture, ecosystems, wildlife, fisheries and economic activities.

Extreme weather

Includes unexpected, unusual, unpredictable, severe or unseasonal weather, beyond the historical range of weather event distribution in a given area, and is linked to climate change. Extreme weather includes extreme heat waves, cold waves, hurricanes, cyclones, tornadoes.

Global mean temperature (GMT)

The estimated global average of near-surface air temperatures over land, sea ice, and sea surface.

Greenhouse Effect

The trapping of the sun's warmth in the lower atmosphere. As more greenhouse gas emissions are released from human activity (e.g. the burning of fossil fuels), the composition of the atmosphere changes, causing more heat to be trapped and resulting in an increase in global mean surface temperature (GMST).

Ice-sheet instability

Describes the potential for ice sheets to rapidly destabilize in a runaway fashion due to global warming, linking climate change to rapid sea-level rise.

GLOSSARY, DEFINITIONS AND CORE CONCEPTS (CONTINUED)

Intergovernmental Panel on Climate Change (IPCC)

Established in 1988 by the UN Environment Programme and the World Meteorological Society, and later endorsed by the UN General Assembly, the IPCC provides an internationally accepted scientific authority on climate change. The IPCC does not conduct climate-related research or monitor the impacts of climate change; rather, it assesses published literature and provides summary reports to the UNFCCC that must be approved, line-by-line, by participating countries.

Nationally Determined Contributions (NDC's)

NDC's describe a country's emission reduction target, as mandated by the UNFCCC.

Neoliberalism

The idea that society should be shaped by the free market, the economy should be privatized. What work private should work publicly. Public sector should follow private sector rules, and subsidize the private sector. Reached its height in the 1970's. Liberalism is essentially the idea that people should be free to live their lives without a great deal of interference from the government, and that we should all be treated equally in the eyes of the law. Neoliberalism is a new take on classical liberalism that benefits large corporate interests. Under neoliberal policies, the free market loses connection with democratic principles, benefiting powerful corporate capitalist interests versus individuals. Private corporations begin to take a stronghold in the public sector.

Ocean Acidification

As more carbon dioxide is released into the atmosphere, more is absorbed by the oceans. This results in a lowering of the ocean's pH level, causing ocean waters to become more acidic, posing a serious threat to marine food webs, ecosystem productivity, fisheries and global food production.

Representative Concentration Pathways (RCP)

RCP's represent different scenarios for global greenhouse gas emission trajectories adopted by the IPCC to guide climate models. The trajectories are used to determine likely concentration of GHG's in the atmosphere based on socio-economic factors. Different RCP scenarios predict the peak of GHG emissions at different times which help climate models predict the rate and severity of climate change.

GLOSSARY, DEFINITIONS AND CORE CONCEPTS (CONTINUED)

Sea level rise

Rising seas are caused by thermal expansion of warmer water due to global warming, and the melting of land-based ice-sheets and glaciers. Data and satellite measurements indicate that sea-level rise is occurring at approximately 30cm per century and could rise by 1-3 metres by the year 2100 depending on humanity's response to climate change.

Tipping Points and Positive Feedback Loops

Tipping points refer to thresholds in Earth's climate system that when crossed cannot be reversed, and often lead to positive feedback loops. An example is with melting permafrost in the Arctic. As the permafrost melts due to rising temperatures, methane and other greenhouse gases stored in the permafrost are released, resulting in further warming.

United Nations Framework Convention on Climate Change (UNFCCC)

Signed by world leaders at the Rio Earth Summit in 1992, came into force in 1994. The main purpose of the UNFCCC is to provide a framework to prevent humanity's dangerous interference with Earth's climate systems. The Conference of the Parties (COP) to the UNFCCC meet annually to negotiate and make commitments on climate change.

United Nations Convention on Biological Diversity (UNCBD)

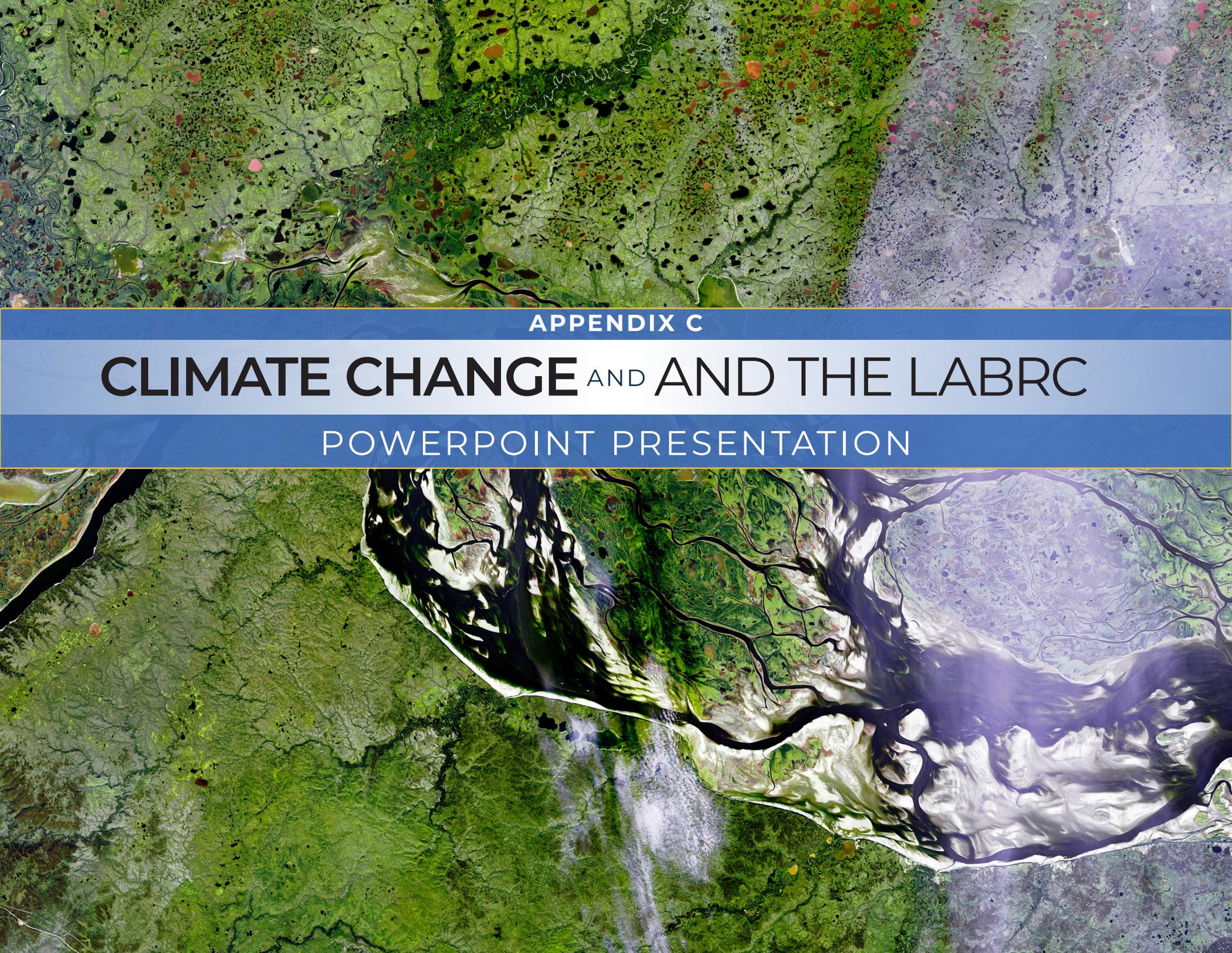
Signed by world leaders at the Rio Earth Summit in 1992, and came into force in 1993. The UNCBD serves three purposes: to promote the conservation of biological diversity, to promote the sustainable use of the components of biological diversity, and to promote the fair and equitable sharing of benefits arising from genetic resources

United Nations Convention to Combat Desertification (UNCCD)

Adopted by world leaders in 1994 and came into force in 1996, this convention aims to combat desertification and mitigate the effects of drought through national action programs.

Weather

Weather refers to the day to day activities of things like temperature, precipitation, and winds. Weather is what we experience when we step outside (see also climate).



APPENDIX C

CLIMATE CHANGE AND THE LABRC

POWERPOINT PRESENTATION



**FIRST NATIONS
LAND MANAGEMENT
RESOURCE CENTRE**

Climate Change and the LABRC

Presented by
Stephen McGlenn
Stefanie Recollet
Jennifer Predie



Introduction to Climate Change

- **What is it**
 - Climate change is a long-term shift in weather conditions identified by changes in temperature, precipitation, winds, and other indicators. Climate change can involve both changes in average conditions and changes in variability, including, for example, extreme events.
- **What's causing it**
 - natural factors: changes in volcanic activity, solar output, and the Earth's orbit around the Sun
 - human activities: burning fossil fuels (producing carbon dioxide, a greenhouse gas), conversion of land for forestry and agriculture
- **What's happening because of it**



Photo: Craig Hilts/
prairiefirephoto.com



Photo: James Anderson



Photo: Jesse Winter/
jessewinter.net



Photo: Mike Grandmaison/
grandmaison.mb.ca



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daisygilardini.com



Photo: Mike Grandmaison/
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Photo: Nick Hawkins/
nickhawkinsphotography.com

<https://www.canadiangeographic.ca/article/photos-how-climate-change-transforming-canada>

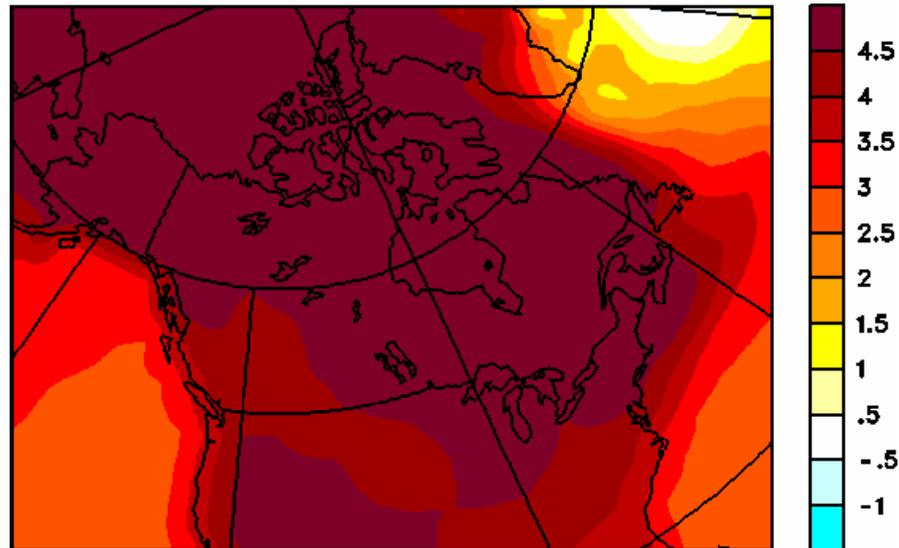
Introduction to Climate Change

- **What can we expect**

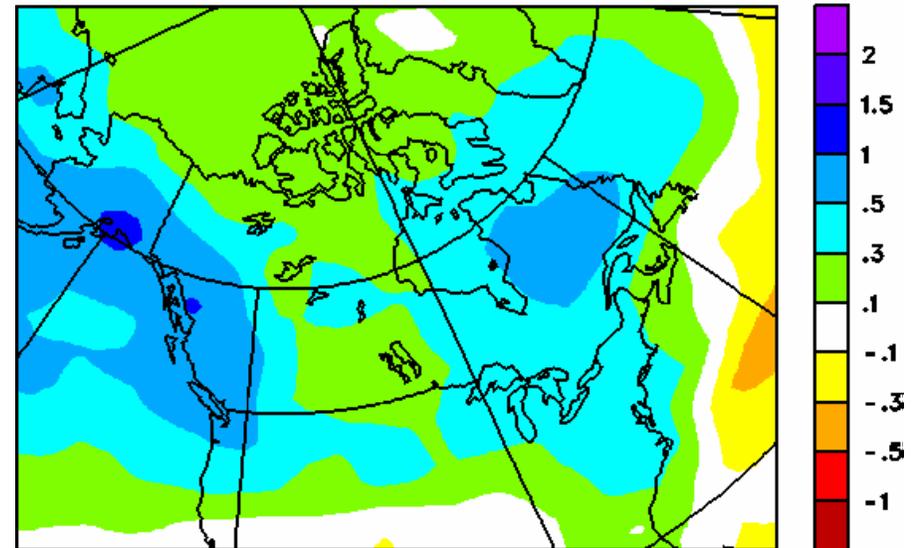
- Temperature Change Projections: http://climate-modelling.canada.ca/climatemodelgraphics/cgcm3-t47/animation_sresa2_st_pcan.shtml

- Precipitation Change Projections: http://climate-modelling.canada.ca/climatemodelgraphics/cgcm3-t47/animation_sresa2_pcp_pcan.shtml

CGCM3/T47 A2 5-yr mean temp. change yr=2100 vs 1981-2000



CGCM3/T47 A2 5-yr mean precip. change yr=2100 vs 1981-2000



Year:
2100

Framing the Issue



Crisis



Uncertainty



Cross-Sectoral



Multi-
Jurisdictional



Footprint



Ethics



Property rights



Aboriginal
rights & title



Human rights



Environmental
rights

How is it Affecting First Nation Communities?



Transportation, Connectivity & Accessibility to Services



Community Safety – Evacuations, Displacement



Sustenance, Food Security & Harvesting Cycles



Invasive Species & Species At Risk



Infrastructure – Housing Crisis



Water Quality & Quantity Issues



Economy: Commercial-Use



Air Quality - Human Health



Social – Loss of Cultural Practices & Suicide Crisis

Unique Opportunities presented by the FA



Laws and Strategies



FN authority to invest



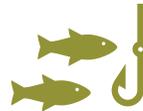
Meet or beat Federal & Provincial Standards



Partnerships



“Two-eyed Seeing”



Indigenous Protected and Conserved Areas – Canada Pathway 2020



Ecosystem Services and Valuation

What are some of our Communities doing about it?

Adaptation Projects

(Canada's First Nation Adapt Program – 2017-18)

- **Flood and Drainage Studies** (Membertou, Paqtnkek Mi'kmaw, Long Plain, Kitsumkalum)
- **Housing and Infrastructure Studies** (Wolinak, Squiala, Tzeachten, Yakweakwioose, Skowkale, Sumas)
- **Emergency Preparedness, Wildfire Management, Forest Fire Vulnerability Studies** (Paqtnkek Mi'kmaw, Mississauga, Fort Nelson, Shackan)

Monitoring Projects

(Canada's Indigenous Community-Based Climate Monitoring Program – 2018-19)

- **Hydrological Monitoring** (Katzie)
- **Wind and Water Monitoring** (Beausoleil First Nation)
- **Integrating ATK and Science to Monitor Climate Change** (Magnetawan, Temagami)
- **Weather Station/Climate Observatory** (George Gordon)

Other First Nation-Lead Initiatives

- **Incorporating climate change into Land Use Plans, Zoning** (e.g., Tsleil-Waututh Nation Land Use Plan) and **Environmental Management Plans** (Long Lake #58, Shawanaga)
- **Economic Development Initiatives** (e.g., Magnetawan is exploring 'Cap and Trade' options, Henvey Inlet's wind farm, Dokis' hydroelectric generating station)
- **Land Laws** (e.g., building codes to promote 'green' housing, consideration of climate change in EA laws, etc.)

Emerging Technologies and Opportunities



Carbon Capture (Squamish) -
Enhanced Oil Recovery



Indigenous Conservation

Ecosystem Services

SUPPORTING SERVICES:

(Ecosystem functions)

nutrient cycling, evolution, soil formation, spatial structure, primary production

PROVISIONING SERVICES:

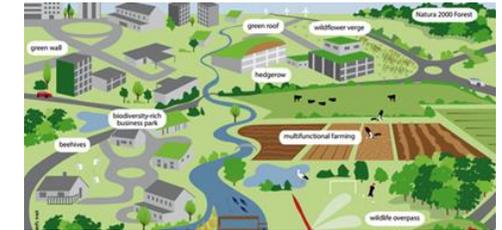
food, fresh water, fuel, wood, fiber, biochemicals, genetic resources

REGULATING SERVICES:

climate, flood, disease & water regulation, water purification, pollination

CULTURAL SERVICES:

spiritual, religious, recreation, ecotourism, aesthetic, inspirational, educational, sense of place, cultural heritage



Green Infrastructure



Carbon Economy



Green Energies



What are other jurisdictions doing?



Climate Emergency Declarations



Renewable Energy – Solar, Wind, Biomass District Heat



Electrifying vehicle fleets



Infrastructure – standards & design codes, green infrastructure



GHG Reduction targets and other strategic climate-related objectives in Planning



Funding: FN Adapt; Climate Change & Health Adaptation Program, Climate Monitoring Program, Clean BC

Where can/should Climate Change Planning Happen?

Hazard mapping, Risk & Vulnerability Assessments

Climate Change Adaptation Plans

Land Use Planning and Planning tools

Community planning

Strategic Planning

Financial Planning: Asset Management & Capital plans

Community Energy planning - energy efficiency

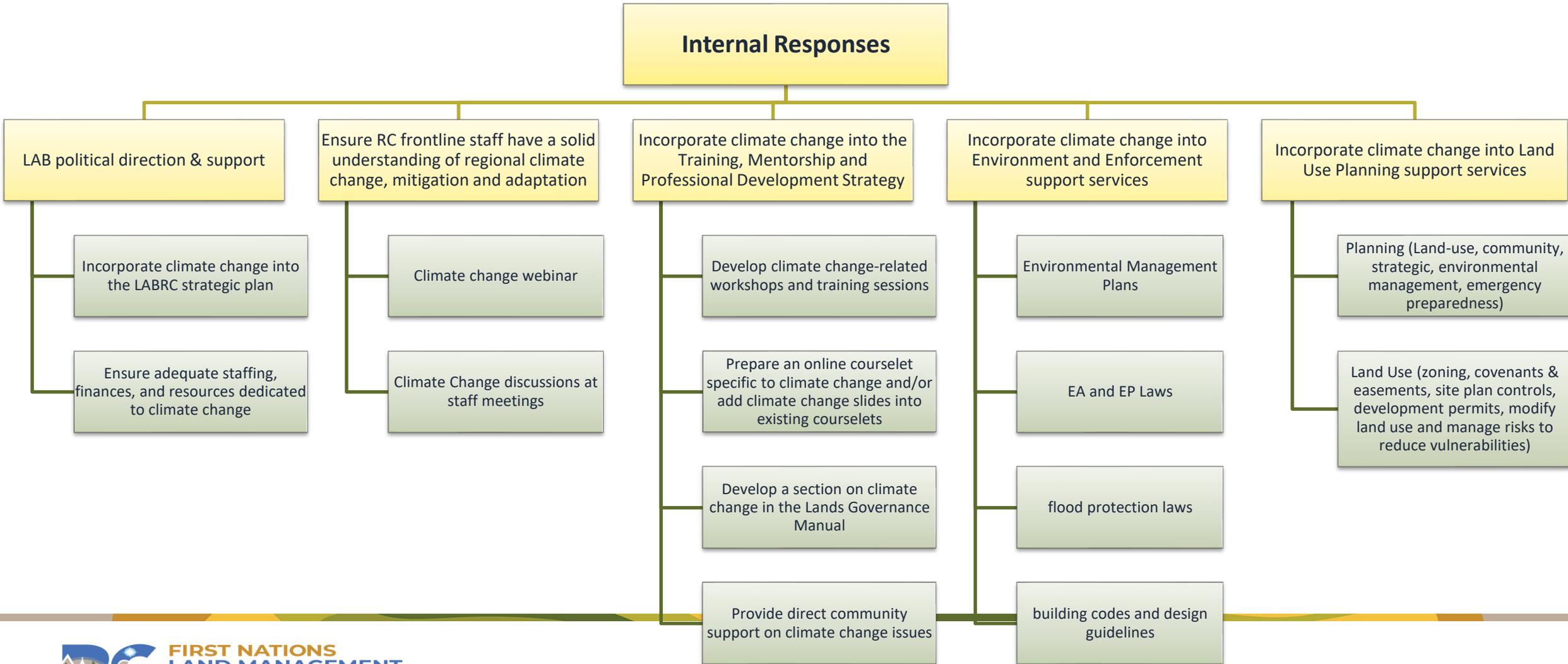
Environmental Management Planning & Environmental Assessments

Source Water Protection Planning

Waste Water

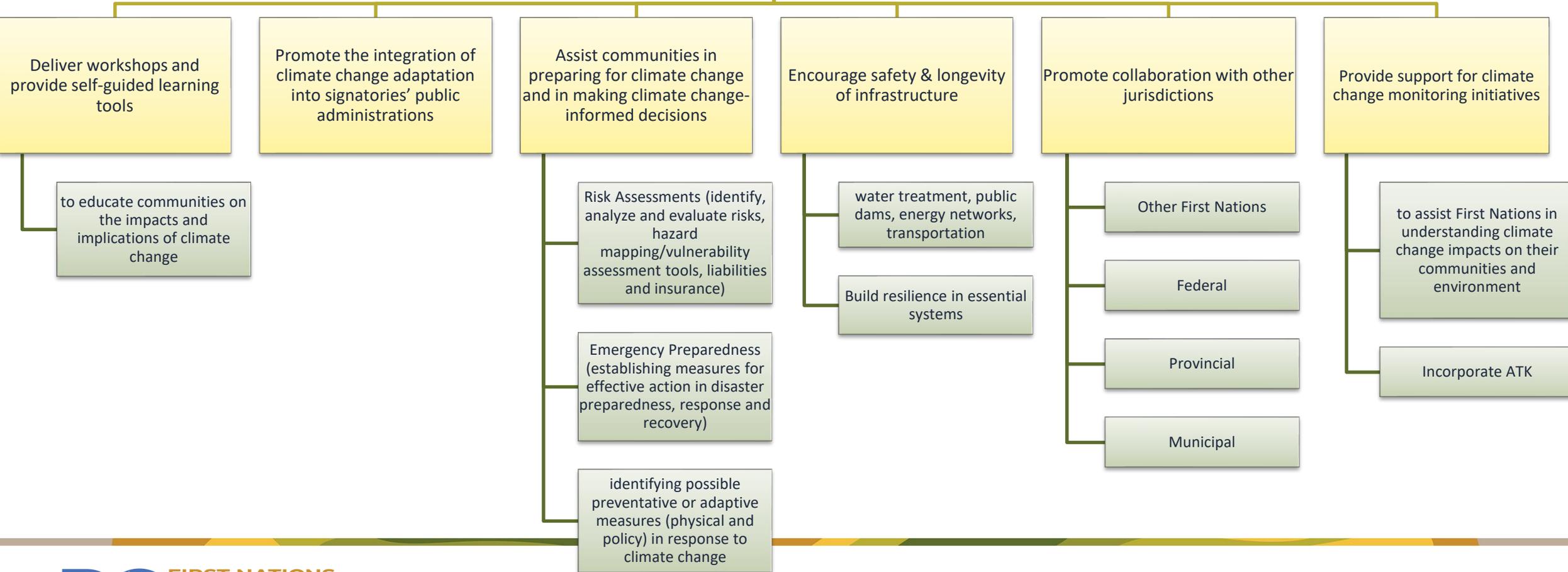
Solid Waste Management Planning – Hazardous Waste – waste reduction

How can the LABRC respond to increasing community concern about climate change?



How can the LABRC respond to increasing community concern about climate change?

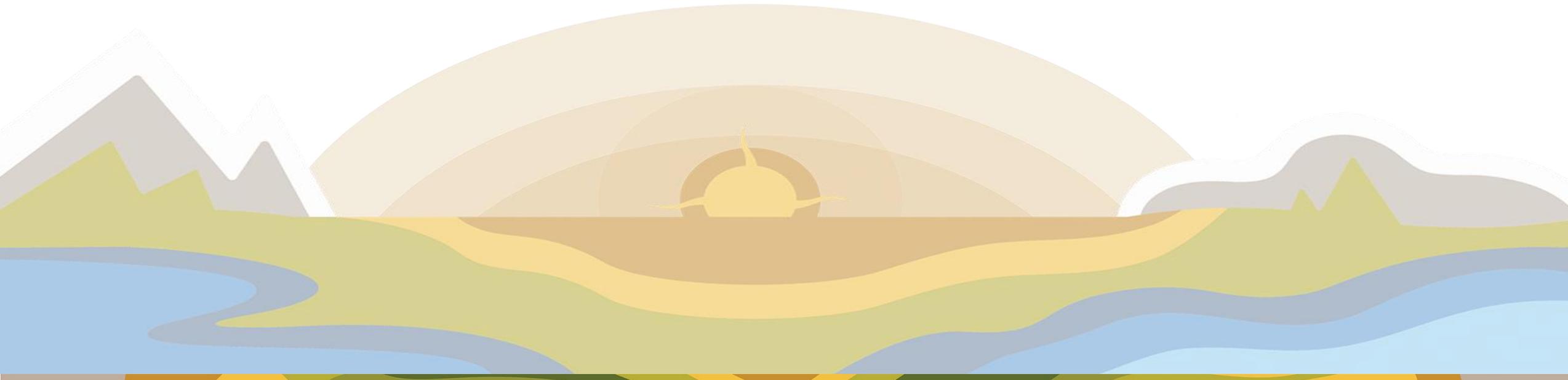
External Responses



Interactive Session: Climate Change and the LABRC

1. What kind of resources do you and your communities need to better understand climate change?
2. How can we best promote, amongst our signatory communities, making climate change-informed decisions and plans?
3. What resources should the RC acquire, produce or provide to assist our communities to adapt/become resilient to climate change impacts?
4. How can we build consensus as an organization in terms of our messaging and outreach regarding climate change?
5. How can we incorporate climate change awareness & advocacy into our strategic plan?

Questions & Discussion





**FIRST NATIONS
LAND MANAGEMENT
RESOURCE CENTRE**

THANK YOU!

For more information, please visit:

- <https://climate.nasa.gov/>
- <https://pics.uvic.ca/education/climate-insights-101> – short courses on climate change.
- <https://climateatlas.ca/planning-climate-change>
- <https://www.indigenousclimateaction.com/>
- <https://fcm.ca/en/resources/cedi/stronger-together-toolkit>
- <http://cip-icu.ca/ClimateChange>

