Canada’s Adaptation Communication to the United Nations Framework Convention on Climate Change
Preamble
Canada is pleased to submit its first Adaptation Communication to the United Nations Framework Convention on Climate Change (UNFCCC). This Adaptation Communication was prepared in recognition of Article 7 of the Paris Agreement, Decision 9/CMA.1, and draft supplementary guidance prepared by the UNFCCC's Adaptation Committee (AC19/GUID/6B), and is being submitted in conjunction with Canada's latest Nationally Determined Contribution.

It is increasingly acknowledged that adaptation actions must accelerate to keep pace with climate impacts. The Paris Agreement recognized the need to increase adaptive capacity alongside limiting global temperature increase. The Global Commission on Adaptation’s 2019 flagship report also underlined the need for greater urgency to adapt in view of climate impacts on human and economic development, and outlined the triple dividend of adaptation investment—avoided losses, economic benefits, and social and environmental benefits.

The following sets out Canada’s existing policy context for adaptation and climate resilience. Recent actions are highlighted below and, wherever appropriate, cross-references to existing sources of information have been made, particularly to Canada’s Seventh National Communication to the UNFCCC. This Adaptation Communication will be updated as domestic work is completed on a National Adaptation Strategy for Canada.

National circumstances
Canada’s national circumstances are described in detail in its Seventh National Communication. This includes details on its governance structures, as well as Canada’s unique population, geographic, economic and climate profiles. Canada looks forward to updating this information in its next National Communication.

Impacts, risks and vulnerabilities
Detailed information on impacts, risks and vulnerabilities can be found in Canada’s Seventh National Communication. The following contains illustrative updates since 2018.

Scientific research shows that climate change is disproportionately affecting Canada, causing the country to warm two times faster than the global average and three times faster in Canada’s North. Given the global nature of climate change and the lag in the climate system’s responses to global mitigation efforts, even as Canada takes action and global emissions are reduced, Canada’s climate will continue to change. According to Canada’s Changing Climate Report (2019), these changes are expected to include more extreme heat, less extreme cold, longer growing seasons, shorter snow and ice cover seasons, earlier spring peak streamflow, thinning glaciers, thawing permafrost, and rising sea levels. The frequency, intensity, and duration of extreme events like heatwaves, wildfires, and flash floods are projected to increase over the coming decades. Slow-onset and incremental impacts are gradually altering ecosystems, communities and livelihoods. For example, slow-onset impacts can include rising sea levels, thawing permafrost, or shortening cold periods that affect winter access to remote
communities that rely on ice roads. Cascading impacts are triggering secondary effects that spread throughout social and economic systems.

A variety of impact and risk assessments have been carried out in Canada on community, regional, national, and sectoral dimensions, contributing to a diverse body of knowledge of how climate change risks affect Canada’s various regions and sectors. A series of national assessment reports led by the federal government – Canada in a Changing Climate – provide the most up-to-date syntheses of knowledge on climate change. The assessments are developed through a rigorous, open process that ensures relevancy and credibility, and engage a broad partnership of subject-matter experts and assessment users from all orders of government, Indigenous organizations, universities, professional and non-governmental groups and the private sector. The latest report to be released in this series is the National Issues Report (June 28, 2021), which focuses on climate change impacts and adaptation issues that are of national importance or that would benefit from an integrated, cross-Canada perspective. This includes chapters on cities and towns; rural and remote communities; water resources; ecosystem services; costs and benefits of impacts and adaptation; economic sector perspectives; international dimensions; and climate disclosure, litigation and finance.

Reports led by external organizations are also helping to identify key climate impacts, vulnerabilities and risks across Canada. The Council of Canadian Academies is a not-for-profit organization that convenes subject matter experts to assess the evidence on complex scientific topics of public interest to inform decision-making in Canada. In 2019, the Council convened a panel of experts to develop a report on Canada’s Top Climate Change Risks. The report provided an approach for understanding and categorizing climate change risks, and identifying significant and priority areas of concern on a national level in Canada. The report identifies a series of risks grouped into 12 top risk areas facing significant losses, damages, or disruptions over the next 20 years. The Council of Canadian Academies panel identified physical infrastructure, coastal communities, northern communities, human health and wellbeing, ecosystems, and fisheries as the top six areas of risk. Other major risk areas identified were agriculture and food, forestry, water, governance capacity and geopolitical dynamics. The report also recognized the severe impacts to Indigenous Peoples’ ways of life caused by climate change; however, the panel acknowledged that they did not have the expertise to fully assess the risk to Indigenous Peoples’ ways of life and identified the need to further assess this risk area with Indigenous Peoples.

The economic costs associated with climate change impacts are also high, projected to grow, and are incurred by governments, communities, the private sector and individual Canadians. In Canada, average insurance payouts related to extreme weather are estimated to have more than quadrupled to $1.8 billion per year over the past decade, and uninsured losses are roughly three to four times that amount. More frequent and growing costs from recent climate-related disasters include flooding across the prairies and southern Ontario from 2013-2018, wildfires in Slave Lake (2011) and Fort McMurray (2016) Alberta, and British Columbia (2017 and 2018). These fire events each cost over $1 billion; Fort McMurray alone cost almost $9 billion. In 2018, it was estimated that severe weather resulted in $2 billion in losses to farmers, the fourth highest cost on record.
The Canadian Institute for Climate Choices (the Institute) is an independent research organization established in January 2020 through Government of Canada funding to provide analysis to help Canada move toward clean growth in all sectors and regions of the country. The Institute has a program of work focused on the costs of climate change, with a series of reports planned over two years. In December, the Institute released the initial report in the series, *Tip of the Iceberg: Navigating the Known and Unknown Costs of Climate Change for Canada*. Beyond acute hazards and associated costs, the Institute notes that slow onset climate change impacts are also expected to result in significant and growing costs. For example, thawing permafrost in the Northwest Territories could lead to $1.3 billion in costs over the next 75 years, equivalent to about 25 per cent of current territorial GDP, through damages like weakened infrastructure. Furthermore, the report states “without adaptation, accelerating climate change will increasingly impact health, ecosystems and Indigenous rights, lands and practices in ways that are harder to quantify in economic terms, yet remain highly consequential.” On June 2, 2021, the Institute released the second report in the series, titled, *The Health Costs of Climate Change: How Canada Can Adapt, Prepare and Save Lives*. While the report acknowledges that not all health and social impacts can be quantified and that economic values do not capture the full extent of the risks, it identifies climate change as a significant health threat and provides an economic analysis of some of the many climate impacts linked to health, quality of life, healthcare, and labour productivity.

Overall, climate change is affecting all facets of society, the economy, and governance across Canada, in both acute and incremental ways. These crosscutting impacts pose serious risks to the health and wellbeing of Canadians, communities and the economy.

*Implementation of adaptation action and plans*

*Canada’s Seventh National Communication provides a detailed account of adaptation action and plans implemented up to 2018. The following provides a high-level summary of action and plans across Canada while also highlighting more recent federal efforts.*

Over the past two decades, all orders of government, Indigenous Peoples, businesses, individuals, and civil society have taken individual and collective action across Canada to address climate risks. In 2016, the Pan-Canadian Framework on Clean Growth and Climate Change was established as the primary mechanism for collaboration on climate change across government jurisdictions, including on adaptation. Through the Pan-Canadian Framework, as well as through individual action, federal, provincial, and territorial governments have been implementing actions to share knowledge, build capacity and invest in on-the-ground adaptation initiatives.

The federal government is advancing climate change adaptation domestically by generating and sharing knowledge, building adaptive capacity to respond, and helping Canadians take action. Since 2018, notable federal actions include:

- In December 2020, under its *strengthened climate plan, A Healthy Environment and a Healthy Economy*, the Government of Canada committed to develop a National Adaptation Strategy. To advance this commitment, the federal government committed to work with provincial, territorial and municipal Governments, Indigenous Peoples, and other key partners, including
youth, to develop the strategy. The strategy will establish a shared vision for climate resilience in Canada, identify key priorities for increased collaboration, and establish a framework for measuring progress at the national level.

- Recent federal investments totaling $3.79 billion for a suite of adaptation policy and programs led by key federal departments and agencies will help advance efforts in a number of priority areas. These investments include funding for:
  - Infrastructure Canada to top up the Disaster Mitigation and Adaptation Fund, to support projects such as wildfire mitigation activities, rehabilitation of storm water systems, and restoration of wetlands and shorelines;
  - Infrastructure Canada to establish a Natural Infrastructure Fund to support natural and hybrid infrastructure projects and help to improve well-being, mitigate the impacts of climate change, and prevent costly natural events;
  - Infrastructure Canada and the Standards Council of Canada to renew the Standards to Support Resilience in Infrastructure Program, continuing work to update standards and guidance in priority areas such as flood mapping and building in the North;
  - Parks Canada Agency and Natural Resources Canada to enhance wildfire preparedness in Canada’s National Parks and support increased mapping of areas in Northern Canada at risk of wildfires, respectively; and
  - Indigenous Services Canada to support First Nations and Inuit as they manage the health impacts of climate change, such as access to country food, impacts of extreme weather events, and mental health impacts of climate change on youth.

- The Canadian Centre for Climate Services is multidisciplinary team that works with partners and stakeholders to deliver climate services, provide access to climate information, and build local capacity to take action. In 2019, the Centre supported the development of a new online climate portal – climatedata.ca – in collaboration with leading climate organizations and leading-edge technology developers. It provides an interactive environment that allows users to explore, visualize and download high-resolution climate data and information tailored to their specific needs.

- Through the Climate Resilient Buildings and Core Public Infrastructure Initiative, Canada is leading globally in integrating future climate considerations into design of public infrastructure to drive climate resilience. In November 2020, future-looking climate data was published that includes temperature, precipitation and wind data, based on over 660 locations across Canada to inform building and infrastructure codes and standards. The future climate design data has already been integrated as part of Waterfront Toronto’s Green Building Requirements, one of the first times such data has been required.
Nature-based solutions to enhance resilience

Nature-based solutions to adapt to climate change are being implemented at all levels and can bridge the challenges of climate change and biodiversity loss while providing multiple co-benefits, such as enhancing carbon sinks, improving environmental quality, and supporting health and wellbeing through access to nature. Nature-based solutions are also recognized for the ability to provide targeted infrastructure services, including those traditionally delivered by grey infrastructure, such as management of storm water, wastewater, flooding, and mitigating temperature extremes. Federal, provincial and territorial governments are working together under the Canadian Council of Ministers of the Environment to build awareness and capacity of nature-based solutions to enhance resilience, for example, through the publication of Best Practices and Resources on Climate Resilient Natural Infrastructure. Beyond the new Natural Infrastructure Fund referenced above, the federal government is working, through Infrastructure Canada’s Disaster Mitigation and Adaptation Fund, with provincial, territorial and municipal partners to support natural infrastructure projects to enhance resilience to key climate impacts. For example, with funding from this program, Montreal is creating one of largest urban green spaces in the world to strengthen wetlands ecosystem health and improve flood resilience in vulnerable parts of the city. Enhanced climate resilience is also being achieved as a co-benefit through federal programs to advance natural climate solutions, for instance by:

- **Investing up to $3.2 billion over 10 years** to partner with provinces, territories, non-government organizations, Indigenous communities, municipalities, private landowners, and others to plant two billion trees on provincial and federal Crown lands, in cities and communities, on farms and on private rural and urban lands;
- **Investing up to $631 million over 10 years** to work with provinces, territories, conservation organizations, Indigenous communities, private landowners, and others to restore and enhance wetlands, peatlands, grasslands and agricultural lands to boost carbon sequestration; and
- **Investing over $185 million over 10 years** to help to develop and implement farming practices to tackle climate change, as well as an additional $200 million for immediate, on-farm climate action to accelerate emission reductions with projects to improve nitrogen management and increase adoption of cover cropping, among other actions.
- Continuing to support partnerships with Indigenous communities across the country through the establishment of new Indigenous Protected and Conserved Areas and Indigenous Guardians programs.

Non-governmental organizations and the private sector are also taking action. For example, the Municipal Natural Assets Initiative, Swiss Re, and the Insurance Bureau of Canada are partnering on a pilot project to develop insurance products that could provide new incentives for local governments to undertake natural asset management. Once launched, the new insurance products would help Canadian local governments protect natural assets such as forests and wetlands. The project aims to replicate two existing nature-based insurance models successfully executed in Mexico and the Netherlands.
Internationally, Canada was a convening country and funding partner of the Global Commission on Adaptation—a two-year international initiative launched in 2018 to raise the profile of climate change adaptation and to mobilize adaptation solutions. This included working with Mexico to lead the nature-based solutions action track with the goal of accelerating the uptake of nature-based solutions at scale. The Commission concluded with the Climate Adaptation Summit in January 2021, which included an anchoring event for the nature-based solutions action track hosted by Canada. This event was the third most highly attended of the 27 sessions, with more than 10,500 international participants and with over 65,000 social media impressions. At the event, Canada and its partners released a call to action to the international community to continue to advance work on nature-based solutions for adaptation.

Canada works with a number of multi-lateral groups to advance adaptation knowledge and action globally. For example, Canada has supported the World Health Organization in developing tools and guidance to enhance the climate-resilience and environmental sustainability of health systems. Canada also actively contributes to the Global Resiliency Dialogue—a collaboration of building code developers and researchers from Australia, Canada, New Zealand and the USA to inform the development of building codes informed by climate science in order to improve the climate resilience of buildings and communities in the face of intensifying risks due to climate change.

Canadian provinces and territories are also taking strong action to adapt and build resilience to climate change. All provinces and territories have adaptation strategies and/or plans, most of which are nested within broader climate plans, or have committed to developing one. This adaptation planning is complemented by emergency management and disaster risk reduction planning, implemented to address various types of emergencies and disasters including those that are climate-driven. A total of 11 provinces and territories have undertaken or are planning to undertake risk assessments of varying scope. Nine have committed to progress reporting on adaptation actions and, of those, three either have developed or are planning to develop adaptation indicators. Joint federal-provincial-territorial actions are being advanced through a number of initiatives, including the Northern Pan-Territorial Adaptation Partnership, the Regional Adaptation Collaboratives, and regional climate hubs in the Prairies and Atlantic Canada.

Beyond provincial and territorial efforts, Canadian cities and communities are actively planning for climate risks by undertaking risk assessments and developing adaptation strategies that inform city planning and infrastructure, encouraging action by homeowners and businesses, and putting in place measures to advance local action (e.g., land-use by-laws, policies and zoning regulations, public health measures, etc.).

Indigenous Peoples and National Indigenous Organizations are also continuing to demonstrate climate leadership. Inuit Tapiriit Kanatami developed the National Inuit Climate Change Strategy, and the Assembly of First Nations declared a climate emergency in 2019. The Métis Nation is building capacity to address the increasing impacts of climate change on the health and well-being of their citizens and communities. Regional-level initiatives and strategies are also being advanced and many Indigenous communities are implementing community-based adaptation initiatives.
In the private sector, Canadian companies are integrating climate considerations into their investment, planning, and operational decisions in order to improve their long-term resilience and competitiveness. In 2019, the Bank of Canada committed to assessing the impact of climate change on Canada’s financial sector. The financial sector itself increasingly recognizes the need for disclosure of climate change risk, and the insurance industry and accounting profession are leading efforts to quantify risks and support actions to disclose and address them. Canada has recently joined the international Coalition for Climate Resilient Investment, a private sector-led initiative that aims to develop and advance solutions for a practical integration of climate risks in investment decision-making, including in physical infrastructure at a national level. On the ground, professional associations (e.g., engineers, planners, accountants, insurers, foresters, nurses, doctors) are working in collaboration with the federal and provincial governments to develop training and guidance to inform and equip their members to be able to address a changing climate in their professional practice.

Civil society and non-governmental organizations in Canada, including youth-led organizations and initiatives, are advancing adaptation action, awareness, and knowledge in a diversity of ways from the community to national level.

**Support to developing countries**

Efforts to support climate action in developing countries is detailed in Canada’s Seventh National Communication and fourth Biennial Report.

During the G7 Leader’s Summit, Canada announced that it will double its climate finance commitment to $5.3 billion over five years. This commitment includes increased support for adaptation, as well as nature and nature-based solutions. Canada also announced that it will increase its provision of grants to 40 per cent, up from 30 per cent previously, for improved access by impacted communities.

Canada’s previous $2.65 billion climate finance commitment helped advance adaptation efforts internationally. For example, Canada has contributed $4 million to the National Adaptation Plan Global Network, which supports adaptation planning in developing countries. Canada’s climate finance also supports the development of national adaptation plans indirectly through its contributions to multilateral funds, such as the Green Climate Fund, to which Canada has committed $600 million in total. As of April 2021, the Green Climate Fund portfolio allocation was almost exactly balanced between adaptation and mitigation. To date, the Green Climate Fund has approved 62 requests for support for the development of national adaptation plans and strategies in 61 countries, totalling $149 million (USD). Canada is also contributing $37.5 million to the Least Developed Countries Fund that has helped 51 countries implement urgent adaptation measures laid out in National Adaptation Programs for Action, as well as supported the formulation of National Adaptation Plans to help countries identify medium and long-term adaptation needs.

Canada also contributed $10 million to support the improvement of early warning systems in some of the most vulnerable communities through the World Meteorological Organization’s Climate Risk Early
Warning Systems project. These systems have been proven to reduce loss of life and economic hardship caused by tropical cyclones, floods, severe storms and forest fires. Additionally, Canada provided $20 million for the Canada-CARICOM Climate Adaptation Fund, which supports the needs and capacities of Caribbean countries for initiatives leveraging multilateral and private sector financing in areas such as agriculture, water infrastructure, and environmental sustainability.

Canada applies a gender lens to its climate finance with the Feminist International Assistance Policy adopted in 2017. This Policy aims to promote gender equality and the empowerment of women and girls including through environment and climate action focusing on adaptation, mitigation and water management.

**Contributions to other international frameworks**
Canada’s action on adaptation contributes to other international frameworks. As outlined in Canada’s Seventh National Communication, adaptation action helps to advance a number of the United Nations’ Sustainable Development Goals. The Government of Canada’s [Federal Sustainable Development Strategy](#) is the primary vehicle for sustainable development reporting and includes several goals that contribute to climate change adaptation and resilience including Effective Action on Climate Change and Modern and Resilient Infrastructure.

Climate change adaptation also shares important linkages to the nature agenda in Canada. Healthy, intact ecosystems can provide services that support enhanced climate resilience. Canada’s efforts on adaptation, in particular action advanced through nature-based solutions, complement commitments to protect 25% of Canada’s land and oceans by 2025 and other goals and targets under the Convention on Biological Diversity. This includes Target 5 of Canada’s 2020 biodiversity goals and targets under the Convention on Biological Diversity: “By 2020, the ability of Canadian ecological systems to adapt to climate change is better understood, and priority adaptation measures are underway”.

Adaptation measures also help to advance efforts under the Sendai Framework on Disaster Risk Reduction. The [Emergency Management Strategy for Canada](#) represents Canada’s domestic disaster risk reduction strategy and responds to commitments under the Sendai Framework. Given its all-hazard scope, the Emergency Management Strategy is advancing work on certain climate-driven hazards (e.g., flooding, wildfire) under all four pillars of emergency management: prevention/mitigation, preparedness, response and recovery. Under the Emergency Management Strategy, some important initiatives are being implemented. This work includes the continued development of a National Risk Profile that will create a forward-looking national picture of disaster risk and capabilities; the creation of an interdisciplinary Task Force on Flood Insurance and Relocation as a first step in creating a National High Risk Residential Flood Insurance Program with a separate, dedicated Steering Committee on First Nations Home Flood Insurance Needs; a two-year extension of the National Disaster Mitigation Program to cost-share flood mitigation programs with provinces and territories; and a review of the Disaster Financial Assistance arrangements, an important federal disaster financial relief program.
A number of geopolitical risks are exacerbated by climate. These risks include increased migration, geopolitical tensions, and increased needs for humanitarian assistance and foreign aid. Canada is playing an active role in advancing global cooperation on climate change and addressing its associated geopolitical risks through various international fora, including Asia-Pacific Economic Cooperation (APEC), La Francophonie, the Commonwealth, the G7, the Arctic Council, NATO and regional organizations. Recognizing that global population movement will be impacted by humanitarian and climate crises, Canada has joined the Global Compact on Safe, Regular and Orderly Migration and is a member of the Global Platform on Disaster Displacement.

**Gender-responsive adaptation action and Indigenous climate leadership**

Around the world, the impacts of climate change are exacerbating social and economic inequalities, and are experienced differently by men and women. Climate change has a disproportional impact on the most vulnerable members of society such as Indigenous populations, women, the elderly and children and the intersectionality of these identities. Left unchecked, the impacts of climate change can threaten health, quality of life and gender equality goals.

Policies and programming for adaptation can help to support a number of goals under the Government of Canada’s Gender Results Framework. These goals include greater and more equitable education and skills development (e.g., through improved access to tools, resources, and training on climate change monitoring, adaptation and mitigation), as well as economic participation and prosperity (e.g., through investments in making the health sector more resilient—a sector that is more diverse and has a higher proportion of women in both leadership and working-level positions than other sectors). Adaptation measures can also help advance Framework goals related to addressing gender-based violence and access to justice (e.g., reducing stress related to coping with the impacts of climate-related emergencies and associated increases in the incidence of violence in affected communities by mitigating climate-related hazards and creating safer and more resilient communities), and advancing poverty reduction, health and well-being.

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**Gender-responsiveness in the Government of Canada’s Disaster Mitigation and Adaptation Fund**

One of the Government’s flagship adaptation funding program, the $3.4 billion Disaster Mitigation and Adaptation Fund, integrates gender considerations in a number of ways. For example, the beneficiaries of funded projects (e.g., those that reduce service disruptions) will include women, seniors, youth, Indigenous peoples and persons with disabilities. Additionally, Infrastructure Canada will apply the Community Employment Benefits reporting framework to every project approved through the Disaster Mitigation and Adaptation Fund to encourage proponents to actively address inequality, to foster inclusive economic growth and to build the foundation for inclusive procurement practices. The Community Employment Benefits reporting framework will help increase employment opportunities in all Disaster Mitigation and Adaptation Fund projects for targeted groups, such as apprentices, Indigenous peoples, women, persons with disabilities, veterans, youth, new Canadians, small- and medium-sized enterprises and social enterprises.
Indigenous knowledge is critical to understanding and responding to climate change risks. Supporting Indigenous self-determination, recognizing Indigenous Peoples’ rights, and acknowledging the value of Indigenous knowledge is critical to reducing risks and to adapting effectively. To that end, in 2016, the federal government committed to strengthening its collaboration with Indigenous Peoples as partners in developing real and meaningful outcomes that position them as drivers of climate action in the implementation of the Pan-Canadian Framework. Following the joint commitments made by the Prime Minister and the National Leaders of the Assembly of First Nations, Inuit Tapiriit Kanatami and the Métis National Council, the federal government established three distinctions-based senior bilateral tables in 2017. These tables are based on the recognition of rights, co-operation, and partnership, and are helping to foster a collaborative approach to ongoing engagement with Indigenous Peoples and are supporting Indigenous climate leadership.

**Next Steps for Adaptation Policy in Canada**

Canada is now working to develop its first-ever National Adaptation Strategy (NAS). A NAS will help Canada respond to the shared reality of climate change by bringing together and building on the resources, knowledge, and expertise of Canada’s adaptation community. It provides an opportunity to expand upon the Pan-Canadian Framework on Clean Growth and Climate Change, to unite all levels of government, Indigenous Peoples, municipalities, private companies, academia, civil society, youth, and all Canadians in a whole-of-society approach to climate change adaptation.

The strategy will be collaborative and action-oriented, aimed at developing a shared understanding of climate change challenges and risks, outlining a shared vision for adaptation, and developing a framework of shared purpose to align collective and individual actions. The NAS will establish priorities for collaboration and foster results in the form of reduced climate change risks and increased adaptive capacity.

To help ensure that actions are holistic and link to other social, economic, and environmental priorities in Canada, the NAS will seek to:

- Build on plans strategies, and actions being advanced by all orders of government and by Indigenous Peoples;
- Contribute to advancing reconciliation and support Indigenous climate leadership;
- Contribute to advancing equity and Just Resilience, and use of inclusive processes that empower and enable all Canadians to participate, including youth; and
- Generate jobs and support economic recovery from the COVID-19 pandemic as well as future emergencies and climate disasters.

Early engagement on the development of the NAS is underway, and partners and stakeholders have shown a high-level of interest to participate in preliminary discussions. Engagement and development will continue over the next two years with the intent to release Canada’s National Adaptation Strategy in 2023.