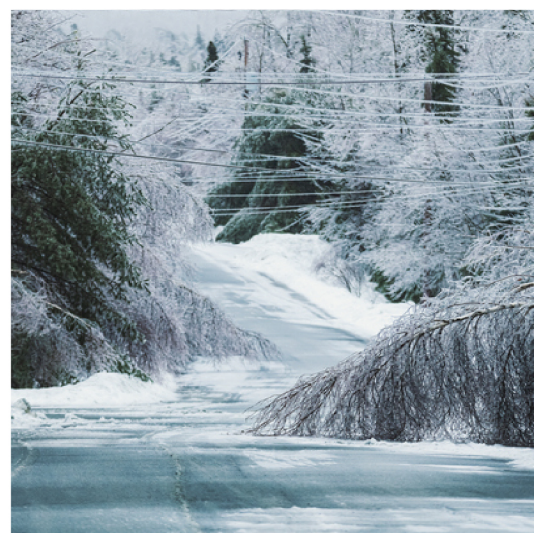


Canada's Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030

Building a **safe and resilient Canada**





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Canada's submission to the United Nations Office of Disaster Risk Reduction on its national progress to implement the Sendai Framework for Disaster Risk Reduction.

Aussi disponible en français sous le titre : Examen à mi-parcours de la mise en œuvre du Cadre d'action de Sendai pour la réduction des risques de catastrophe 2015-2030

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Message from the Minister of Emergency Preparedness

On behalf of the Government of Canada, I am pleased to submit Canada's Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction, and to be one of 187 signatories to the United Nations' Sendai Framework for Disaster Risk Reduction (2015-2030) which provides concrete actions to protect society from the risk of disaster.

As disasters continue to grow in frequency and severity, the Government of Canada recognizes the ongoing importance of implementing the principles of the Sendai Framework. We remain steadfast in our efforts to support disaster risk reduction and climate change adaptation in Canada and around the world and are committed to realizing the Sendai Framework's four priorities for action.

In May of this year, I had the opportunity to meet with partners at the Global Platform for Disaster Risk Reduction and discuss our progress on the advancement of the Sendai Framework. Canada continues to pursue a collaborative and whole-of-society approach to disaster risk reduction and climate change adaptation. The Government of Canada recognizes the linkages between climate change, disaster risk and sustainable development, and understands the importance of working with partners, including governments, stakeholders, and Indigenous Peoples, to strengthen Canada's capabilities to prevent, mitigate, prepare for, and recover from disasters.

Canada officially advances the Sendai Framework through the Emergency Management Strategy for Canada: Towards a Resilient 2030 which helps to improve our understanding of disaster risks, strengthen our governance mechanisms, and build evidence for targeted investments in disaster risk reduction. Developed collaboratively with the provinces and territories, the Strategy helps to enhance disaster preparedness to mitigate impacts and equip us for a more effective response as we move from risk to resilience.

We are also implementing a number of initiatives, including the development of a National Risk Profile and launch of Canada's first National Adaptation Strategy, which aim to enhance whole-of-society collaboration and governance to strengthen resilience and to improve understanding of disaster risk in all sectors of society.

To maintain a strong preparedness posture in the face of more frequent natural disasters and extreme weather events, we have made investments in domestic non-government organizations, which have enabled them to recruit, train and build their response teams and mobilize quickly to provide relief to Canadians in times of need, including in response to large-scale emergencies.

Canada is committed to working in partnership with Indigenous communities and incorporating traditional Indigenous knowledge into our emergency management and response efforts. Our government recognizes that when we understand, respect, and leverage this traditional knowledge, which comes from the people who have been managing and mitigating disasters for millennia, everyone benefits, and we are stronger for it.

As we mark the halfway point of the framework's lifecycle, we recognize the important progress that has been made on national emergency preparedness, mitigation, response, and recovery. However, there is still much work to be done at the local, regional, and national levels. Building on the strong foundations achieved over the past seven years, Canada is committed to an inclusive, whole-of-society approach to building resilience and effective disaster risk reduction.

The Honourable Bill Blair, P.C., C.O.M., M.P.

President of the King's Privy Council for Canada and
Minister of Emergency Preparedness



1. Methodology and process

Canada's submission to the United Nations Office of Disaster Risk Reduction on its national progress to implement the Sendai Framework for Disaster Risk Reduction was developed as a whole-of-government report, including contributions from departments and agencies across the Government of Canada. Coordination was led by Public Safety Canada (PS) through its Emergency Management and Programs Branch.

To prepare Canada's midterm review, PS coordinated with federal departments and agencies to create an inventory of federal programs and initiatives which have been or are seeking to advance the implementation of the four priority areas of the Sendai Framework. In doing so, this report lays out the structure and intent of these initiatives, identifies intended outcomes, seeks to demonstrate progress on the Sendai indicators, and outlines challenges and opportunities for their implementation. While input was not solicited from every jurisdiction across Canada, this report intends to provide international partners with a strategic level view of how the Government of Canada and its whole-of-society partners are working together on disaster risk reduction domestically and around the world.



2. Highlights and introduction

Canada is one of 187 signatories to the Sendai Framework for Disaster Risk Reduction (2015-2030), a non-binding international agreement adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015.

As disasters continue to grow in frequency and severity, the Government of Canada recognizes the ongoing importance of implementing the principles of the Sendai Framework. The Government of Canada will remain steadfast in its efforts to support disaster risk reduction here in Canada and around the world and is committed to realizing the Sendai Framework's four priorities for action:

1. Understanding disaster risk;
2. Strengthening disaster risk governance;
3. Investing in disaster reduction for resilience; and
4. Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

This year marks the halfway point of the framework's lifecycle, which provides an opportunity for signatory states to highlight progress and achievements in national emergency preparedness, mitigation, response and recovery between 2015 and 2022. It is also an opportunity to demonstrate the inherent interdependencies between disaster risk reduction, climate adaptation and the SDGs as highlighted in the recent [Global Assessment Report on Disaster Risk Reduction 2022](https://www.undrr.org/gar2022-our-world-risk)¹.

¹ <https://www.undrr.org/gar2022-our-world-risk>

International Milestones

While advancing the priorities of the Sendai Framework, the Government of Canada has linked new international disaster risk reduction initiatives with broader global commitments, including the [Paris Climate Change Agreement](#)² and [Sustainable Development Goals](#)³. In doing so, the Government of Canada has collaborated with multilateral institutions and international partners to support a broad range of disaster risk reduction activities around the globe and to provide international humanitarian assistance in response to complex, protracted emergencies and natural disasters. Throughout this report, various international disaster risk reduction initiatives will be presented, including notable financial contributions in support of the:

- Green Climate Fund;
- Global Environment Facility;
- Integrated Disaster Risk Management Program (Asian Development Bank);
- African Risk Capacity Agency;
- Caribbean Disaster Emergency Management Agency;
- Climate Risk and Early Warning Systems (World Meteorological Organization).

Domestic Milestones

The Government of Canada is working to maintain ongoing dialogue and active participation with provinces, territories, municipalities and Indigenous partners to take strong action to prepare for future emergencies, including extreme weather events caused by climate change, with a focus on proactive prevention/mitigation efforts and ensuring robust response and recovery capabilities. At the same time, the Government of Canada is committed to ensuring transparent decision-making and advancing reconciliation with First Nations, Métis and Inuit partners by supporting collaborative, community-driven initiatives that strengthen the governance and service delivery for Indigenous people regarding emergency preparedness, management and recovery.

In Canada, emergency management and disaster risk reduction is a shared responsibility across all sectors of society. The Government of Canada can deploy federal assets and exercise leadership at the national and international levels relating to disaster risk reduction, but local and regional activities are primarily led by the

² <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

³ <https://sustainabledevelopment.un.org/?menu=1300>

provinces and territories. To encourage progress on the four priorities for action of the Sendai Framework, the Government of Canada has collaborated openly with its whole-of-society partners, including local and regional governments, to encourage the implementation of new disaster risk reduction initiatives. Throughout this report, various domestic disaster risk reduction initiatives will be presented, including these notable milestones:

- Canadian Agricultural Partnership;
- Canada's renewed Wildland Fire Strategy;
- Canada's 2030 Emissions Reduction Plan.
- Emergency Management Strategy for Canada: Toward a Resilient 2030;
- National Strategy and Action Plan for Critical Infrastructure;
- Pan-Canadian Framework on Clean Growth and Climate Change, and;
- The upcoming release of Canada's National Adaptation Strategy.



3. Retrospective review

3.1 Context shifts and new issues – retrospective 2015–2022

Since 2015, Canada's physical and social landscapes have continued to change due to the impacts of natural and human-induced hazards and disasters. To address these emerging challenges, the Government of Canada has worked to renew Canada's approach to climate change and disaster risk reduction through the signing of the 2015 Paris Agreement and the implementation of the Sendai Framework.

While implementing both frameworks, Canada has experienced numerous challenges as a result of the growing frequency and severity of disasters with some of the most expensive years for disaster losses ever in Canada occurring over the last decade. Disaster losses are likely to continue to increase in the foreseeable future in part due to climate change, the impacts of which are already being felt across Canada, increasing the frequency and intensity of hazards such as floods, wildfires, drought, extreme heat, tropical storms, coastal erosion, and, in Northern Canada, damage to seasonal ice roads and melting permafrost. These hazards pose significant risks to communities, individual health and well-being, the economy, and the natural environment.

In May 2016, wildfires broke out in northern Alberta resulting in the most expensive disaster in Canadian history. The city of Fort McMurray was hit by a massive system of wildfires that swept through the Regional Municipality of Wood Buffalo. In total, the Fort McMurray fires burned approximately 579,767 hectares of land causing the evacuation of over 90,000 people and destroyed 2,400 homes and businesses, including 530 other buildings that were damaged. At its peak, over 2000 firefighters were working to combat the fires daily, including helicopters and water bombers. In addition, Canada received help from 200 firefighters from the United States, 60 from Mexico and 298 from South Africa.

Through this tragic experience, Canada has learned to evolve its thinking on disaster recovery, as well as streamline its capacity to coordinate large-scale response efforts amongst municipal, provincial, federal and international partners. Moreover, lessons learned from the Fort McMurray wildfires have also pushed Canada's leaders to make new strides in the coordination of emergency management and disaster risk reduction through the publication of the third edition of the **Emergency Management Framework for Canada** in May 2017. In doing so, Canada has been able to incorporate an all-hazards approach to emergency management and has bolstered intergovernmental governance mechanisms that have led to greater whole-of-society action on resilience.

With the adoption of a modernized emergency management framework, the Government of Canada sought new ways to accelerate whole-of-society action on disaster risk reduction. In 2019, the Federal-Provincial-Territorial Ministers Responsible for Emergency Management endorsed Canada's **Emergency Management Strategy for Canada: Toward a Resilient 2030**. To develop Canada's strategy, whole-of-society partners used principles from the Sendai Framework to establish federal, provincial and territorial priorities that would seek to strengthen the resilience of Canadian society by 2030. In doing so, Canada's strategy uses the following five priority areas of activity to carry out initiatives aimed at strengthening our national ability to prevent/mitigate, prepare for, respond to, and recover from disasters through an all-hazards approach:

1. Enhance whole-of-society collaboration and governance to strengthen resilience;
2. Improve understanding of disaster risks in all sectors of society;
3. Increase focus on whole-of-society disaster prevention and mitigation activities;
4. Enhance disaster response capacity and coordination and foster the development of new capabilities; and
5. Strengthen recovery efforts by building back better to minimize the impacts of future disasters.

As in many countries, climate change has continued to accelerate the frequency and severity of hazards and disasters in Canada. Across Canada, wildfires, floods and heatwaves, or a combination thereof, have become a regular occurrence, requiring new efforts to support whole-of-society resilience. For instance, on June 29, 2021, the village of Lytton, British Columbia, set a national temperature record of 49.6°C as part of a heatwave experienced in Western Canada. The extreme temperatures and

wildfires in the region led to heat-related illnesses, deaths, and the displacement of thousands of people. Just months later, the same region of Canada experienced record-breaking rainfall, with some areas seeing up to 250 mm of precipitation in a three-day period, causing flooding and landslides resulting in multiple fatalities, evacuations, and damage to critical infrastructure and disrupted supply chains.

The Canadian Disaster Database, which tracks significant disasters has shown that the annual number of disasters has increased steadily since the 1970s and especially in the last decade. In total, Canada experienced over 200 major disasters between 2008 and 2020. The rapid pace at which these events are occurring often overwhelms the capacity of communities to mitigate, prepare for, respond to and recover from climate-related disasters.

Consequently, provincial and territorial governments have requested the use of the Canadian Armed Forces (CAF) to support disaster response through Operation LENTUS. Under this mechanism, the CAF has been able to provide support to jurisdictions across Canada, including emergency logistics and medical services, in their response to naturally-induced hazards. Despite the success of Operation LENTUS in supporting urban and remote Canadians in their time of need, the rising use of this mechanism has also demonstrated that further work is needed to promote whole-of-society resilience. The past two years have shown all of us that large scale emergencies – like a pandemic – can strain resources. The Government of Canada has invested in expanding a non-governmental **Humanitarian Workforce and Civilian Response Capacity**, which will strengthen national readiness and build the capacity of whole-of-society actors by funding non-governmental organizations (NGOs). This will allow these organizations to mobilize in response to emerging events more quickly and deploy critical on-the-ground support to provincial, territorial and local governments.

In parallel, the Government of Canada has been responding to the COVID-19 pandemic since early 2020 through dedicated and deliberate efforts in Canada and around the world. In doing so, the resilience of Canada's institutions has been tested in their ability to prevent, mitigate, respond and recover from direct and indirect impacts. For example, in the early months of the pandemic, the Government of Canada used various mechanisms, including heightened health and border measures, to ensure the safety of Canadians and stop the global spread of the virus. While Canada saw early success from these measures, supply chain challenges, such as the availability of medical supplies and the ability to mass produce vaccines, also

demonstrated areas in which the federal government will seek to improve its resilience as it prepares for future pandemic response.

The COVID-19 pandemic has demonstrated how interconnected the world is and the importance of embedding disaster risk reduction and climate change adaptation into national prevention and mitigation, preparedness, response and recovery efforts.

At the same time, in November 2021, the province of Newfoundland and Labrador incurred one of the most costly cyber-attacks in Canadian history due to a ransomware attack on its largest healthcare authority. As a result of this attack, healthcare providers across Canada's most eastern region were unable to support patients due to treatment delays and disruptions. To ensure that Canada is well positioned to adapt to and combat cyber risks, the Government of Canada will remain committed to the implementation of its **National Cyber Security Action Plan** due to its importance in bolstering whole-of-society resilience.

In 2021, the Prime Minister of Canada appointed a new **Minister of Emergency Preparedness** mandated to strengthen all aspects of Canada's emergency management system through a systemic, all-hazards, whole-of-society approach. In carrying out this mandate, Canada's new Minister of Emergency Preparedness is responsible for working with provinces, territories, municipalities and Indigenous partners to take strong action to prepare for future emergencies, including extreme weather events caused by climate change, with a focus on proactive prevention/mitigation efforts and ensuring robust response and recovery capabilities. Whilst leading this work, the Government of Canada is also advancing work towards reconciliation with First Nations, Métis and Inuit partners by building on collaborative, community-driven initiatives that honour self-determination and are premised on building resiliency.

3.2 Progress in risk assessment, information and understanding

Emergency management and understanding disaster risk are whole-of-society endeavors. In Canada, they are shared responsibilities across all-levels of government. Recognizing this, the Government of Canada is advancing its understanding of disaster risk in concert with all levels of government (provincial/territorial and municipal), Indigenous communities, and public and private stakeholders.

Risk assessment

A key element in building a stronger, more resilient Canada is empowering citizens to educate themselves and to take action to mitigate risks to their property and personal safety. A **national advertising campaign** has been developed and aimed to educate and inform a broad swath of Canadians about the risks they could potentially face in their region. This multi-year communications campaign is targeted at increasing Canadians' preparedness and readiness to respond to disasters and emergencies, helping to not only reduce the financial costs of disaster response and recovery, but enhance the resiliency of all individuals and communities in Canada. The most recent campaign, which ran from January to March 2022, was geo-targeted and regionally focused whenever possible, and included a multi-media presence on television, radio, web sites and apps, social media, as well as search engine marketing and ads, including weather-triggered digital banner ads on weather-related websites.

The Government of Canada also recognizes the importance of comprehensive risk data to inform risk assessments, support open and inclusive dialogue, guide decision-making, and mitigate disaster risk to Canadians. Budget 2019 invested in probabilistic models to better understand the risks posed by earthquakes, wildland fires, and floods. Likewise, the Government of Canada, in concert with all provinces and territories, has been leading whole-of-society consultations to develop Canada's all-hazard **National Risk Profile (NRP)**. The NRP is a strategic national disaster risk and capability assessment that uses scientific evidence and stakeholder input to assess representative scenarios, gather data from participants with relevant knowledge and expertise, and create a forward-looking picture of risk to strengthen resilience to natural and human-induced hazards. Evidence and stakeholder input that is gathered through the NRP initiative will be used to inform decision-making and strategic investments for disaster risk reduction and resilience building:

- In **Round 1** of the NRP (2021-22) whole-of-society risks for flooding, wildfires and earthquakes were evaluated, while **Round 2** of the NRP (2022-23) will assess a new set of whole-of-society risks from hurricanes, heat waves, and electromagnetic space weather events.
- As part of the NRP, the Government of Canada has updated its **All Hazard Risk Assessment (AHRA)** methodology to evaluate the impact and likelihood of all hazards that pose a threat to Canadians. The methodology assesses these impacts across five categories: people, economy, environment, government, and social function, and takes into account future risk drivers,

including climate change, population growth, urbanization and development in hazard areas.

- In addition to assessing risk using the AHRA methodology, the NRP employs a **Capability-Based Planning (CPB)** methodology to identify and measure the capabilities required to prevent or mitigate hazard impacts, respond, and recover. The CPB provides a common framework for measuring, coordinating, and mobilizing resources across jurisdictions, highlights existing gaps, and informs future investments.

The Government of Canada has established an **Emergency Management Assistance Program** which recently amended its terms and conditions to address all health emergencies. It provides funding to First Nation communities so they can build resiliency, prepare for all-hazards and respond to them using the four pillars of emergency management: mitigation, preparedness, response, and recovery. Under this program, funding is provided to communities, non-governmental organizations, provinces and territories to support on-reserve emergency management. Furthermore, it works in close partnership with multiple departments, agencies, provincial and territorial governments, and National Indigenous Organizations to effectively deliver emergency management services.

In 2021, the Government of Canada established its **Centre for Integrated Risk Assessment** which will serve as the national centre of expertise to coordinate and oversee public health risk assessment. In doing so, this Centre will plan to optimize the government's ability to anticipate, detect and assess potential health risks to Canadians in both the immediate (signal detection) and long term (foresight). It is anticipated that the Centre will detect integrated public health signals and ensure that risk assessments are communicated to national leaders in a routine and timely manner to support decision-making, protect Canadians and increase public trust.

Climate change

As the Government of Canada has advanced the implementation of the four priority areas of the Sendai Framework, it has aligned its efforts with broader climate change commitments, including the Paris Agreement and United Nations Sustainable Development Goals, under the 2016 **Pan-Canadian Framework on Clean Growth and Climate Change**. Through the Pan-Canadian Framework, federal, provincial, and territorial governments have been implementing programming to share knowledge, build capacity and invest in on-the-ground adaptation initiatives.

Building on the Pan-Canadian Framework, Canada's **National Adaptation Strategy** (NAS) is being developed to outline a shared vision for a resilient Canada, establish priorities for collaboration, and align collective and individual actions for faster, coordinated, equitable, inclusive and systemic adaptation to the impacts of climate change. The NAS is being developed in two phases:

- In Phase I, the Government of Canada developed the framework of the Strategy, including long-term transformational goals, and medium-term objectives, working with experts and reflecting the input of provinces and territories, national Indigenous organizations, representatives, academia and civil society.
- In Phase II, the Government of Canada sought broader public, partner and expert input on specific measurable and achievable actions to be pursued under the Strategy.

To support the NAS, five expert Advisory Tables were convened, focusing on the following themes:

1. Health and Wellbeing;
2. Resilient Natural and Built Infrastructure;
3. Thriving Natural Environment;
4. Strong and Resilient Economy; and,
5. Disaster Resilience and Security.

Each Advisory Table is co-chaired by a federal department along with an external partner or stakeholder and includes diverse membership representing Indigenous peoples, youth, professional associations, the private sector, environmental organizations, academia, adaptation experts, and others. The Advisory Tables proposed transformational goals and concrete objectives for each theme. The work of the Disaster Resilience and Security Advisory Table has ensured that objectives related to emergency preparedness, disaster mitigation, security and disaster risk reduction are well integrated into the NAS.

To better understand Canada's risk to climate change, the Government of Canada has implemented a **Climate Lens Assessment** as a horizontal requirement applicable to the Canada Infrastructure Program, Disaster Mitigation and Adaptation Fund and Smart Cities Challenge. In doing so, the Climate Lens has provided meaningful insight

into the climate impacts of individual projects and has encouraged project planners to remain consistent with shared federal, provincial, and territorial objectives articulated in the Pan-Canadian Framework for Clean Growth and Climate Change.

Essentially, the Climate Lens is applicable to project applicants and has two components: a greenhouse gas mitigation assessment, which measures the anticipated greenhouse gas emissions impact of an infrastructure project, and the climate change resilience assessment, which employs a risk management approach to anticipate, prevent, withstand, respond to, and recover from climate change-related disruptions or impacts. Ultimately, the goal is to encourage behavioral change and consideration of climate impacts in the planning of infrastructure projects to support the Government of Canada's commitment to reduce Canada's GHG emissions by 40-45% below 2005 levels by 2030.

- In 2017, the Government of Canada launched **Canada in a Changing Climate: Advancing our Knowledge for Action**. This multi-year, collaborative initiative is delivering a series of authoritative reports that focus on how and why Canada's climate is changing, and how Canadians are adapting. Hundreds of subject-matter experts supported the development of the reports, comprising all orders of government, Indigenous organizations, universities, professional and non-governmental groups, and the private sector.
- The **Canadian Centre for Climate Services** was established in 2018 to provide information and support to those seeking to understand, and reduce their vulnerability to, climate change. The centre leads a Government of Canada-wide approach, collaborating with provinces, territories, and climate science experts to provide credible, useful and timely climate data, information, and tools for Canadians to consider climate change in their decisions.
- Canada's **Climate Resilient Built Environment** initiative is a five-year initiative (2021-2026) in support of climate resilience in public infrastructure by providing improved and climate-informed building codes and standardization of guidance documents. Research areas will include public transit, nature-based solutions for flood mitigation, buildings, roads, water/wastewater, bridges, urban heat islanding, and guidance for northern, remote and Indigenous communities. This initiative builds on the success of the **Climate-Resilient Buildings and Core Public Infrastructure Initiative's** (2016-2021) ground-breaking work to integrate climate resilience into building and infrastructure design, guides, and building codes.

- **Climate Science 2050: Advancing Science and Knowledge on Climate Change** has helped Canadians better understand the breadth of climate change science and knowledge needs and gaps that exist across Canada. Climate Science 2050 will continue to accelerate research in key areas that will enable progress toward a climate-resilient, net-zero Canada and inform national science investments and research planning, as well as support policy initiatives, such as Canada's National Adaptation Strategy and Canada's Net-Zero Emissions Accountability Act.
- **Climate Change Geoscience Program** conducts monitoring, modelling and research on the geological impacts of climate change, with a focus on permafrost processes, coastal changes, and glacier melt. In doing so, the program provides cutting-edge information and data to improve stakeholders' understanding of how Canada's landmass is affected by climate change to support land-use planning, infrastructure development, and to help industry and at-risk communities adapt and increase resilience.
- To protect Canada's shared great lakes and coastal wetlands, the Government of Canada has established a **Great Lakes Protection Initiative** to address the most significant environmental challenges affecting water quality and ecosystem health and to deliver on commitments under the Canada-United States Great Lakes Water Quality Agreement. This initiative focuses on eight priority areas for action, including evaluating and identifying at-risk nearshore waters, assessing and enhancing the resilience of the coastal wetlands and engaging Indigenous peoples in addressing Great Lakes issues.

Public alerting and early warning

In Canada, the **National Public Alerting System** is a shared responsibility among all levels of government and industry partners in the private sector. Through this joint alerting mechanism, the federal government leads collaboration with all public alerting stakeholders to improve the effectiveness and continued delivery of emergency alerting in Canada and with continental partners. For example, the Government of Canada supports the **Canadian National Seismograph Network** which oversees the ongoing operations and maintenance of a Canada-wide network of seismic sensors for monitoring seismic events in Canada. This Network provides authoritative and actionable information that improves decision-making and action-taking by government organizations, infrastructure operators, the public, and international stakeholders and improves outcomes when a hazardous event occurs.

To provide early notification information ahead of high-impact weather events, the Government of Canada offers a **Warning Preparedness Meteorology Program** that provides real-time information and insight before and during severe weather events to support local emergency management providers in preparing and responding to disasters, and increasing national resilience across the country. Since 2015, Canada's **Emergency Geomatics Service** has also supplied satellite-derived situational awareness products to emergency management officers around the world for 27 disaster events, including floods, ice jams, landslides, and volcanic activity. Satellite imagery delivered by Canada under the International Disaster Charter has directly supported natural disaster resilience at home and abroad by informing decision-makers on community resilience and adaptation and the ability to respond to disasters more effectively due to improved situational awareness.

To enhance community and individual resiliency to extreme heat events, Canada has developed its **Heat Alert and Response System**. This response system helps provinces prepare for extreme heat events by working with communities to develop plans and response measures, and warn residents about potentially dangerous heat events in their communities through the following five primary elements: Community Mobilization and Engagement, an Alert Protocol, Communication Plans, Community Response Plans, and an Evaluation Plan to improve the system. Specifically, the federal government has worked closely with partners to adapt the response system to meet the needs of rural communities.

As part of researching, monitoring and alerting related to geo-hazards, the Government of Canada has established the **Geoscience to Keep Canada Safe Program** to provide authoritative, accurate and timely hazard and risk information to assist decision-makers to better understand and act on geo-hazard risks. This program helps all levels of government (including international governmental organizations), the private sector, and professional organizations to prevent, mitigate, prepare for, respond to and recover from natural disasters, including earthquakes, tsunamis, landslides, volcanos and space weather events.

To ensure that Canada has a strong nuclear monitoring capability, the Government of Canada maintains a **National Data Centre** which regularly contributes to the Preparatory Commission of the Comprehensive Nuclear-Test-Ban Treaty Organization and support Canada's obligations under the Comprehensive Test Ban Treaty and the Comprehensive Nuclear-Test-Ban Treaty Act. Moreover, the Government of Canada also maintains a **Nuclear Emergency Response** capability, which includes a cross-

Canada network of real-time radiation monitoring stations, as well as a rapidly deployable air and ground-mobile radiation survey equipment that is capable of detecting, mapping and characterizing radiation in the aftermath of a nuclear and radiological incident. Data from the network is publicly available online, and in real time, which increases transparency in emergency communications.

Supporting Small Island Developing States and Least Developed Countries in adapting and increasing resilience to climate change is a key priority for Canada. From 2016-2022, Canada provided \$10 million CAD to the World Meteorological Organization for the **Climate Risk and Early Warning Systems** (CREWS) initiative. By supporting the establishment and strengthening of early warning systems, these funds contributed to enhancing resilience to high impact weather and climate events in Least Developed Countries in Southeast Asia, the Caribbean, and South Pacific.

3.3 Progress in risk governance and management

The Government of Canada recognizes a responsibility to ensure that proactive disaster risk management is embedded into its domestic Emergency Management systems. Canada's respect for human dignity and commitment to engage and protect all people, including the most vulnerable, shapes domestic and international initiatives, in keeping with core principles of equity, openness and transparency.

International gender initiatives

The Government of Canada appreciates that women and girls can be powerful agents of change when given access and control over resources to prevent and mitigate disasters. Canada recognizes the differentiated vulnerabilities and needs of men and women to ensure gender-responsive and inclusive approaches to the design of disaster risk reduction mechanisms and policies. Ultimately, gender-smart finance can better inform investment decisions and support women's economic empowerment. Initiatives include:

- The Government of Canada contributed \$10 million CAD to the Asian Development Bank's **Integrated Disaster Risk Management Program** (2013-2021) which helped leverage \$656 million USD for programs that improve resilience and disaster risk management capacity in the Philippines, Vietnam, Cambodia and Laos. This Program has advanced gender equality by

implementing gender-focused projects to strengthen community resilience and to ensure women's participation in project activities while organizing policy dialogue to raise awareness and gain high-level commitment for advancing the role of women in resilience building.

- The Government of Canada's \$15 million CAD contribution to the **Climate Change Action for Gender Sensitive Resilience Project** (2018-2022) helped to further integrate gender equality and human-rights based approaches into disaster risk reduction, climate change adaptation and environmental management frameworks and interventions, by identifying and addressing gaps to ensure equal access for men and women across nine Caribbean countries.

International nuclear safety initiatives

Since 2014, Canada's **Federal Nuclear Emergency Plan** (FNEP) has formed the central framework for coordinating the planning for and response to a nuclear emergency. The FNEP integrates with Canada's all-hazards plan and Canada's **Federal Emergency Response Plan**, to provide an overarching response framework for nuclear emergencies that could impact Canada or Canadians. The FNEP also outlines the federal government's aim, authority, emergency organization and concept of operations for handling a nuclear emergency and is continually reviewed and exercised to help maintain national readiness.

To support global resilience to nuclear disasters, Canada has been participating in the International Atomic Energy Agency's Emergency Preparedness and Response Standards Committee. This committee is mandated to strengthen international nuclear emergency preparedness and response by reviewing and providing advice and guidance on the strategy, priorities and programme for the development of nuclear emergency preparedness and response safety standards. The outcomes are new and renewed international safety standards and guidelines for nuclear emergency preparedness and response, for use by the countries around the world in their nuclear safety programmes.

- In June 2018, Canada successfully conducted a **World Health Organization – Pan American Health Organization Joint External Evaluation**, which included a national assessment of chemical and radiological emergencies and evaluated readiness for health emergencies under the framework of the International Health Regulations core capacities.

- In June 2019, Canada successfully conducted an **International Atomic Energy Agency Emergency Preparedness Review** for nuclear emergency preparedness. A future review of Canada's system is planned for June 2023.

Domestic initiatives

Building on the Emergency Management Strategy for Canada, to support its governance and implementation, the federal, provincial and territorial governments jointly led the creation of a **Federal-Provincial-Territorial Emergency Management Strategy Interim Action Plan (2021-2022)** that outlines short-term plans and implementation outcomes under these five priority areas:

1. Continued Federal-Provincial-Territorial Government Engagement to Ensure Strong Pan-Canadian Cohesion for Emergency Management;
2. Improve Pan-Canadian Understanding of Disaster Risk;
3. Reduce Pan-Canadian Flood Risk;
4. Advance Emergency Communications across Canada;
5. Advance Efforts for Improved Disaster Recovery Programming.

This Interim Action Plan was intended to be released in 2020, however, due to priority efforts associated with the COVID-19 pandemic response, Action Plan activities were deferred to 2021-2022. Going forward, the Action Plan will adopt a two-year cycle, and be reviewed on a biennial basis by SOREM. The next FPT Action Plan will span from 2022 to 2024.

3.4 Progress in investment in risk reduction and resilience

As we continue to implement the Sendai Framework, the Government of Canada recognizes that it takes bold, ambitious steps to build resilient communities. Disaster, climate change and biodiversity loss disproportionately affect people living in vulnerable situations, particularly women and girls as well as Indigenous Peoples. The Government of Canada is committed to an inclusive whole-of-society approach in building resilience and to effective disaster risk reduction.

International initiatives in risk reduction and resilience

Proactive risk management

Displacement and migration caused by disasters and climate-related shocks are complex and cross-cutting issues, with significant implications for security, gender

equality, human rights, and border management. Consequently, Canada recognizes the need to increase coordination between development, humanitarian and peace programming efforts to effectively reduce people's needs, risks and vulnerabilities while supporting prevention, anticipation and early recovery. Acknowledging that disasters and crises generate humanitarian needs and undermine development, Canada is exploring opportunities to integrate disaster risk reduction into its **Triple Nexus Approach** (Humanitarian-Development-Peace) and Security agendas, since there is a clear financial benefit to investing in proactive risk management as opposed to a reactive emergency response to disasters.

In November 2021, Canada announced an additional \$10 million CAD for the **National Adaptation Plan Global Network**, a multi-donor global initiative that advances national climate adaptation processes in developing countries that demonstrated successful results over the past few years. Led by national governments, the process involves analyzing current and future climate change and assessing vulnerability to its impacts. This provides a basis for identifying and prioritizing adaptation options, implementing these options, and tracking progress and results.

Canada's contributions to climate and disaster risk finance

As the financial and non-economic losses caused by naturally induced disasters continue to rise, even countries with robust disaster risk management programs are still highly exposed to economic and fiscal shocks. Acknowledging that the public sector cannot address this issue alone, a key priority of Canada's climate finance support is to mobilize private finance through public investments. However, private investment for adaptation, resilience and loss and damage has been limited to date. Accordingly, Canada prioritizes grant financing where cost-effective market-based financing is not viable, such as adaptation projects in poor and more vulnerable countries. For example, Canada provides disaster risk assessment and financing tools to the Pacific Island Countries using the Pacific Catastrophe Risk Assessment and Financing Initiative.

Although innovative climate finance mechanisms exist to support climate action, access is often constrained by resource and capacity-related factors, high indebtedness, small economies/markets, and exclusion from Official Development Assistance by being upper-middle and high-income countries. Therefore, building capacity and removing barriers to accessing finance is fundamental to accelerating adaptation and resilience. Increasing the availability of climate finance in the Caribbean has been and will remain among Canada's top priorities. For example, as

part of the **2017-UN CARICOM High-Level Pledging Conference**, Canada made the largest bilateral commitment to the region's sovereign states for reconstruction and climate and economic resilience. Initiatives in the region include:

- The Canada Caribbean Disaster Risk Management Fund (2008-2022) was a competitive fund targeting community groups, NGOs and government agencies to implement small initiatives that would address climate change adaptation and disaster risk reduction. It has delivered 34 sub-projects in 11 countries following 9 calls for proposals.
- The Government of Canada's \$8.2 million CAD contribution (2018-2023) to the Caribbean Disaster Emergency Management Agency improved comprehensive disaster management in the Caribbean Region with a focus on people living in vulnerable situations, particularly women and girls. The project has improved regional emergency communications capacity, trained regional response teams, and funded local early recovery projects.
- The Government of Canada's \$20 million CAD contribution (2012-2020) to the Caribbean Development Bank's Community Disaster Risk Reduction Fund has supported projects in the Caribbean by improving community infrastructure and early warning systems while also raising awareness about climate change and disaster preparedness.

To increase capacity for climate risk reduction, Canada has been supporting a range of new tools for vulnerable economies, such as climate risk insurance. At the **2018 G7 summit in Charlevoix**, the Government of Canada announced \$100 million CAD to support the expansion of Climate Risk Insurance coverage in climate-vulnerable countries, including for Small Island Developing States and Least Developed Countries. Likewise, through support to various regional risk insurance platforms, including in Africa, the Pacific and the Caribbean, Canada has continued its engagement in the climate and disaster risk space. Previous initiatives included:

- From 2016 to 2021, Canada contributed \$40 million CAD to the African Risk Capacity Agency to support African governments to better plan, prepare and respond to extreme weather events and natural disasters that are exacerbated by climate change.
- In 2020, Canada contributed \$20 million CAD to establish the **Canada-CARICOM Climate Adaptation Fund** to support local capacity development and technical assistance in Caribbean Community countries for developing

innovative financing instruments and to catalyze private investment for climate adaptation.

Under **Canada's G7 Presidency** in 2018, Canada spearheaded work to identify a way forward to improve the accessibility of climate finance for developing countries, including Small Island Developing States and Least Developed Countries. By systematically looking at the connections between disaster risks, climate change and gender equality and by acknowledging the unique challenges faced by climate vulnerable countries, Canada ensures that the needs of the poorest and most vulnerable, at the local level, are at the heart of its work. For example, the Government of Canada contributed \$9.5 million CAD for a two-year initiative to develop the **Climate Finance Access Network** with the Rocky Mountain Institute. This initiative was designed in direct response to the climate finance challenges identified by developing countries, including capacity-building to secure climate financing for priority projects.

To further address this issue, Canada fully delivered on its 2015 commitment to provide \$2.65 billion CAD over five years, and announced at the **2021 G7 Leaders' Summit** a doubling of its climate financing commitment, from \$2.65 billion to \$5.3 billion CAD over the next five years, to support developing countries' transition to low-carbon, climate-resilient, nature-positive, and inclusive sustainable development. In doing so, this commitment dedicates a minimum of 40% of funding to climate adaptation projects, and allocates a minimum of 20% of funding to projects that leverage nature-based climate solutions and projects that contribute to biodiversity co-benefits, while requiring at least 80% of climate finance projects to integrate gender equality considerations.

For many countries and communities around the world, addressing risks from naturally induced disasters and climate change is a matter of survival. Since the Sendai Framework is designed to work hand in hand with the 2030 Agenda and the Paris Agreement, the Government of Canada has been integrating disaster risk reduction into its work with multilateral development banks, the Green Climate Fund and the Global Environment Facility. Recognizing that adaptation and resilience support is urgently needed, the Government of Canada has contributed to the following international initiatives:

- Since 2015, the Government of Canada has been contributing to the **Green Climate Fund**, the climate financing mechanism under the United Nations Framework Convention on Climate Change. In doing so, Canada has actively

promoted the importance of mainstreaming disaster risk reduction across the Fund's work and has encouraged a paradigm shift towards low-emission and climate-resilient development.

- Since 2015, the Government of Canada has been the sixth largest donor (approx. \$460 million CAD) to the **Global Environment Facility**. The Facility's work has been primarily driven by its climate adaptation programming strategy under the Least Developed Countries Fund (LDCF) and Special Climate Change Fund (SCCF). The objective under these two funds is mainly adaptation to climate change through interventions aimed at improving the resilience of vulnerable communities and ecosystems through nature-based solutions. To date, the LDCF and SCCF have provided funding to more than 400 projects and supported the development of National Adaptation Programmes for Action in 51 countries.
- In parallel, the Government of Canada is working with the World Bank to build adaptation and resilience capacity for the most vulnerable around the world. For example, through its \$20 million CAD contribution to the **Canada-Caribbean Resilience Facility** (2018-2022), Canada provided support to strengthen public financial management systems to better respond to and manage after a disaster, channeling funds to priority areas and ensure government systems are resilient and adapted for emergency response. In addition, Canada has contributed \$3 million USD to the **Global Facility for Disaster Reduction and Recovery** (2020-2023), a global partnership administered by the World Bank that supports developing countries to understand, manage and reduce their risk to natural hazards and climate change.

Food security

Internationally, Russia's war on Ukraine is an additional, massive shock to global food systems that were already under threat from climate change, conflict and COVID-19. Given the impacts of climate change on water resources, water intensive sectors like agriculture are therefore facing food security risks. Moreover, long-term under-investment in agriculture and food systems, especially in the face of climate change, have left developing countries vulnerable to shocks. With the help of donors and investors including Canada's \$340 million CAD contribution (2019-2021), the **International Fund for Agricultural Development** has been able to support smallholder farmers to adapt to the effects of climate change and become more resilient to economic and climate shocks. Ultimately, funding from this initiative was

able to reach 123 million people in 2020 and has helped smallholder farmers to adopt gender-sensitive technologies and practices that help mitigate the carbon footprint of agriculture.

Domestic Initiatives in Risk Reduction and Resilience

The Government of Canada recognizes that urgent action is needed to address the interconnected crises of disaster, climate change and biodiversity loss, which disproportionately affect the poorest and most at-risk, particularly women and girls as well as Indigenous peoples. Investing in low-carbon, climate-resilient and nature positive economies is fundamental to preventing and addressing disaster impacts while building resilience. Canada is supporting nature-based solutions to deliver both climate and biodiversity co-benefits, helping to reduce the impacts of climate-related disasters in the process.

Domestic resilience

Domestically, the Government of Canada has been advancing the implementation of the Sendai framework since 2015 by shaping the national Emergency Management Strategy and taking a leadership role in strengthening resilience across the country. Initiatives such as the **National Disaster Mitigation Program** (2015-2022) have supported the government's commitment to work collaboratively with provinces, territories and Indigenous communities to build safer and more resilient communities by funding small-scale structural and non-structural flood mitigation projects.

To increase the resilience of communities that are impacted by natural disasters triggered by climate change, the Government of Canada launched its **Disaster Mitigation and Adaptation Fund** in 2018. In doing so, the federal government committed \$2 billion CAD over 10 years (2018-2028), and then an additional \$1.375 billion CAD in federal funding for a total of \$3.375 billion CAD over 12 years (2021-2033) to support infrastructure projects that build resilience to climate change impacts in communities. Notably, a minimum of \$138 million CAD will be allocated to support Indigenous specific proposals, particularly the **Climate Change Preparedness in the North Program** and the **Indigenous Community-based Climate Monitoring program**.

To increase the resilience of Canada's critical infrastructure, the Government of Canada has developed a **National Strategy and Action Plan for Critical Infrastructure** which sets out an all-hazards risk management approach to strengthening the resilience of critical infrastructure and helps communities adapt to the changing climate. Under this

strategy, the **National Cross Sector Forum 2018-2020 Action Plan for Critical Infrastructure** developed and distributed impact assessments during steady state and during disruptive events (e.g., floods, wildfires, hurricanes), which enhanced disaster preparedness and provided critical infrastructure stakeholders with information to enable a more effective response to disasters. In parallel, the **Investing in Canada Infrastructure Program** was launched to provide long-term, stable funding to help communities reduce air and water pollution, provide clean water, increase resilience to climate change, create a clean-growth economy and to ensure that families have access to modern, reliable services that improve their quality of life. Through this program, over \$33 billion CAD in funding is being delivered through bilateral agreements between the federal government and all provinces and territories.

To build the availability of experts and professionals who incorporate climate change impacts and adaptation in their practice, Canada's **Building Regional Adaptation Capacity and Expertise Program** (2017-2022) ensured that communities and businesses have access to the necessary capacity to take action. For example, this Program worked with partners and stakeholders to develop training, professional networks, internship opportunities, and a competency framework to strengthen the labour market availability of adaptation expertise.

To support Canada's health sector to prepare for and respond to the impacts of climate change, in 2018 the Government of Canada established the **Climate Change and Health Adaptation Capacity Building Program** (HealthADAPT). Through the HealthADAPT program, Canada supported partnerships across five provinces and territories to help health authorities understand how climate change impacts Canadians and national health systems. Likewise, evidence generated from HealthADAPT will continue to drive health systems to identify evidence-based adaptation options to help reduce the health effects of climate change and sustain adaptation planning.

Similarly, the **Canada Community-Building Fund** provides \$2.3 billion per year of predictable, long-term funding that helps communities build and revitalize their public infrastructure. In addition, the government allocated additional investments of \$2.2 billion to address infrastructure priorities in municipalities and First Nations communities in fiscal years 2018-19 and 2020-21. From 2014-15 to 2023-24, this represents more than \$26 billion in flexible, long-term funding for municipal infrastructure. Communities can invest funds under 19 different categories of infrastructure projects, including disaster mitigation, according to their municipal priorities.

Domestic food security

In Canada, the COVID-19 pandemic has impacted supply chains and intensified the food needs of priority populations and the operation of organizations working to improve food security. In response, the Government of Canada took a decisive approach to strengthening agricultural resilience through the creation of an **Emergency Processing Fund** (2020). This Fund committed \$77.5 million CAD to help companies implement changes to safeguard the health and safety of workers and their families due to the impacts of the pandemic and aid companies to improve, automate and modernize facilities to increase Canada's food supply. To enhance measures to prevent community based food insecurity, the Government of Canada \$330 million CAD invested into the **Emergency Food Security Fund** (2020-2021) to support food banks and other national food service organizations increase their food storage and distribution capacities as well as the quantity of food distributed to vulnerable individuals experiencing food insecurity.

To strengthen the resilience of Canada's agricultural sector to severe weather events, the federal government instituted the **Canadian Agricultural Partnership** (2018-2023). This Framework hosts a suite of cost-shared business risk management programs that are designed to respond to the needs of producers, regardless of size or type of operation, to ensure that producers are making the best resilience-based decisions for their operations and are well-placed to respond to any climate risks:

- To support discoveries in agricultural resilience, the Government of Canada committed \$70 million CAD (2017-2023) to establish **Canada's Living Laboratories initiative**, which focused on the collaborative development of improved management practices and tools between producers, scientists, and other sectoral partners, and \$185 million CAD through the **Natural Climate Solutions Fund** to reduce greenhouse gas emission and enhance climate resiliency.
- \$3 billion CAD was invested by the Government of Canada under the **Canadian Agricultural Partnership** (2018-2023) with provincial and territorial jurisdictions to support national on-farm environment and climate change efforts. Ultimately, the provinces and territories are responsible for the design and delivery of these programs which have been designed to address regional resilience needs, while advancing framework priorities, such as environmental sustainability and climate change.

Under the Canadian Agricultural Partnership, the Government of Canada has invested \$55 million CAD through the **AgriRisk Initiatives Program** (2018-2023) to support the development of new risk management tools through three streams:

1. The Research and Development stream provides financial assistance for industry-led research and development of new risk management tools, including insurance products.
2. The Administrative Capacity Building stream provides funding for building the administrative capacity to deliver new risk management tools.
3. The Microgrants provide funding for academic research proposals that address issues relevant to business risk management in the Canadian agriculture sector.

The program has also supported the development of tailored insurance products in the poultry sector, enabled research in the swine sector to reduce the financial risks of disease outbreaks, and has supported the development of best management practices to address a variety of risk factors including those posed by disease, climate, and microbial resistance.

3.5 Progress in disaster preparedness, response and “build back better”

Preparedness

To bolster Canada’s preparedness for emergency response, the Government of Canada regularly conducts disaster response and emergency management exercise and prepares, maintains, tests and implements a **Federal Emergency Response Plan** (FERP). The Government of Canada provides knowledge, products and expertise to support provincial and territorial emergency response planning through Emergency Management Plans for geo-hazards which provides hazard and risk information and scenarios to support emergency planning by all levels of government.

In conjunction with the Federal Emergency Response Plan, the **National Emergency Strategic Stockpile** (NESS) is a federally owned stockpile that contains a supply of life-saving drugs, medical equipment and supplies and is intended to be leveraged as surge capacity to support disaster response during public health events and emergencies. In doing so, the NESS maintains a robust supply of key medical supplies and equipment, pharmaceuticals and social services supplies; maintains

robust quality assurance functions so products received and distributed by the federal government meet technical specifications and quality standards for use in the health care sector, and maintains warehousing and logistics infrastructure through first and third party logistics providers to manage assets.

The **Emergency Management Public Awareness Contribution Program** aims to bring about a shift in the preparedness and readiness of Canadians when it comes to disasters and emergencies, to reduce financial costs of disaster response and recovery, and to increase the resiliency of individuals and communities across provinces and territories. The program provides funding to increase the level of understanding of the risks associated with natural disasters and what can be done to prepare for and mitigate weather-related emergencies for vulnerable groups, particularly low-income Canadians, seniors, women, new Canadians and Indigenous communities.

To support Canada's Federal Nuclear Emergency Plan, the federal government exercises its emergency plans through simulated nuclear emergency preparedness exercises and situations. These situations are designed to evaluate the effectiveness of the response organization's emergency plans, procedures, and capabilities by identifying problems or gaps that can be resolved prior to a real emergency. Moreover, these exercises also identify good practices to be reinforced and provide opportunities for organizations and personnel to test their capabilities to respond to a particular component of a plan. Notably, the Government of Canada published its **Guidance on Planning for Recovery Following a Nuclear Emergency** in 2020, which is consistent with international best practices from the International Atomic Energy Agency and the International Commission on Radiological Protection.

To support Canada's chemical incident response, the Government of Canada co-hosted the International Symposium on **Community Recovery Following a Major Chemical Incident** in January 2022. The symposium was conducted virtually and co-hosted by the Chemical Events Working Group with the Global Health Security Initiative, of which Canada is a member country. In parallel, the Government of Canada has established an **Integrated Marine Response Planning Program** which aims to engage a broad range of stakeholders in the marine response planning process and reflect upon the risks and conditions that are needed to enhance capacity for preparedness and response to environmental emergencies in specific geographic areas. In doing so, this Program has strengthened Canada's capacity to conduct oil spill modelling and emergency response in the Pacific and Atlantic oceans.

Response

The Government of Canada maintains a national operations centre that provides stable, round-the-clock coordination and support for federal, provincial and territorial response in the event of a disaster. This operations centre identifies high-risk events that require coordination across federal departments and facilitates the development of integrated contingency plans.

While responding to a disaster, federal regional offices become an extension of the operations centre and assist provinces and territories with a coordinated federal response at the regional level. In an emergency, local authorities are the first responders and response is coordinated by the affected provincial or territorial emergency management office. Should a First Nation on-reserve community, provincial or territorial government require resources beyond their capacity to cope in an emergency or disaster, the federal government responds to any request for assistance by that First Nation on-reserve community, provincial or territorial government. As stated earlier in this report, the Government of Canada has invested in expanding a non-governmental **Humanitarian Workforce program** to strengthen national readiness and build the capacity of whole-of-society actors by funding non-governmental organizations (NGOs) to build and maintain a humanitarian workforce to provide all-hazards surge capacity in response to large-scale emergencies. The Government of Canada has provided funding to the Canadian Red Cross, St. John Ambulance, The Salvation Army, and the Search and Rescue Volunteer Association of Canada (SARVAC). This funding has allowed these organizations to mobilize in response to emerging events more quickly and deploy critical on-the-ground support to provincial, territorial and local governments.

During the COVID-19 pandemic, the Government of Canada established a **Healthy Communities Initiative** to help communities adapt public spaces and local services in a way that met people's immediate needs while respecting public health guidelines. This initiative allowed the Government of Canada to:

- create or adapt existing public places such as parks, commercial main streets, and indoor spaces to enable people to participate safely in cultural or physical activities as well as local businesses.
- deliver a range of transportation and mobility options that allow physical distancing while also making it easier for people to get around in their communities, whether they choose to walk, bike or ride public or private transit.

- provide digital solutions that connect people, facilitate citizen engagement and support the delivery of community services and activities.

To promote effective disaster response, the Government of Canada has established a national Coast Guard **Continuous Improvement Initiative** to enhance operational readiness, conduct exercises and respond to maritime incidents. This involves ongoing changes to policy and procedures based on lessons learned as well as a common and consistent methodology for exercise planning and execution. This preparedness will improve the Canadian Coast Guard's ability to develop and practice exercises, which will contribute to enhanced operational readiness and overall ability to respond to maritime incidents. These initiatives are expected to be completed in Fall 2022.

To strengthen disaster risk governance for Canada's coast guard, the Government of Canada's **Mass-Rescue Operations – Maritime Framework** is currently being developed to effectively outline the roles, responsibilities, authorities, and actions to be taken in support of regional Mass-Rescue Operations. Moreover, efforts are underway to update the Canadian Coast Guard's **Plan for Incident Management**, which will seek to provide direction on how the agency applies Incident Command System and broader Incident Management processes and procedures when responding to a disaster. Both the Framework and Plan for Incident Management are expected to be implemented by Fall 2022.

Build back better

In Canada, when a large-scale natural disaster occurs and provinces or territories cannot reasonably bear the response and recovery costs on their own, jurisdictions can request federal financial assistance through national **Disaster Financial Assistance Arrangements**. Since 2015, the Government of Canada has continued to provide federal funding in response to disasters and is committed to assisting provinces and territories with their emergency management responses to cyclical natural disasters. The 2021 Economic and Fiscal Update provisioned \$5 billion in 2021-22 for its share of recovery costs under the DFAA as well as other costs related to the recent natural disasters in British Columbia in 2021.

As disasters grow in frequency and severity across Canada, the Government of Canada has been reviewing its Financial Assistance program to ensure that there is an updated, comprehensive system available to provinces and territories for disaster recovery and to support the safety and well-being of Canadians. This effort is being

led by an external advisory panel of whole-of-society subject matter experts and is expected to provide recommendations on how to improve the disaster financing program by the end of 2022.

In 2018, the Government of Canada launched the Disaster Mitigation and Adaptation Fund (DMAF), committing \$2 billion over 10 years to invest in structural and natural infrastructure projects to increase the resilience of communities that are impacted by natural disasters triggered by climate change. Budget 2021 provided an additional \$1.375 billion in federal funding over 12 years to renew the DMAF.

Between 2020 and 2021, the COVID-19 pandemic caused significant disruptions to the national food system, as producers faced surpluses due to their products not being sold in the same volumes, while demands increased from food security organizations across Canada. In response, the Government of Canada implemented the **Surplus Food Rescue Program** as an emergency resilience and recovery measure. This \$50 million CAD initiative supported Canada's food system, food processors, and food producers, to ensure food availability for all Canadians. The program was designed to address urgent, high volume, perishable surplus products and to ensure that these surplus products were not wasted. The Program awarded all available funding to nine organizations, which included industry groups, processors, distributors and food security organizations. These organizations worked with over 100 different organizations to reduce the waste of surplus food and increase the availability of food for populations at risk of experiencing food insecurity.

Through the Government of Canada's **AgriRecovery Framework**, the federal government is capable of assisting agricultural producers to recover from natural disasters. This Framework provides federal funding for extraordinary costs related to natural disasters, including damages brought upon by droughts and wildfires. To support Canada's recovery mechanisms in the agricultural sector, a recent legislative review of Canada's Farm Income Protection Act examined the operation of Business Risk Management Programs, including the AgriRecovery Framework over the period of 2017-2021. The results of the legislative review were generally positive, with some areas for improvement identified, including the need to enhance the equity and efficiency of Business Risk Management programs, continuing to encourage the development and use of insurance and private-sector risk management tools by producers, and simplifying Business Risk Management programs to the extent possible.

At the outset of the COVID-19 pandemic, the Government of Canada committed to contributing to international efforts to address the pandemic by providing urgent funding, especially for those who are most vulnerable. In doing so, Canada has also shown leadership by participating in various international forums, initiatives and programming. For example, through the Pan American Health Organization, the Government of Canada contributed \$4.2 million CAD (2016-2022) to support the concept of Safe Hospitals and invested in the health sector of the region so that health services can continue to function after a disaster, including during the COVID-19 pandemic. Going forward, Canada will continue to work with its partners to embed climate action in recovery actions to build back better and greener from the global pandemic and to increase the use of disaster management materials and tools in the health sector.

3.6 Domestic and international collaboration, partnership and cooperation

In Canada, emergency management responsibilities are shared by federal, provincial and territorial governments, Indigenous peoples, municipalities/communities and individual citizens who have a responsibility to be prepared for disasters and contribute to community resiliency.

To support national resilience to wildfires, the Government of Canada has established a national **Wildland Fire Strategy** through which inter-jurisdictional wildfire agencies collaborate through the Canadian Interagency Forest Fire Centre (CIFFC), a not-for-profit corporation owned and operated by the federal, provincial and territorial wildland fire management agencies, to exchange firefighting personnel, aircraft, equipment and information. Moreover, the Government of Canada also finalized the establishment of the National Environmental Emergencies Operations Centre, which has become Canada's coordination hub for scientific and technical support during environmental emergencies. Specifically, this Centre has brought together scientific and technical advice for cleaning up hazardous material spills in all environments, a space to organize federal emergency preparedness and response activities to assist on-the-ground responders, and the capacity to provide specialized services such as localized weather reports, spill modelling, and clean-up advice.

Canada is actively engaged with international partners in planning for and responding to naturally-occurring and human-induced disasters. For example, the Government of Canada has partnered with the Federal Government of the United States to protect

coastal cities with a tsunami warning system that provides residents enough time to evacuate to higher ground. Canada shares seismic data with the United States' National Tsunami Warning Center, which issues tsunami messages for American and Canadian coastlines.

To support geomagnetic monitoring and space weather forecasting in Canada, the Government of Canada has an ongoing nation-wide network of geomagnetic observatories, acquisition of data regarding solar phenomena, provision of space weather phenomena forecasts to stakeholders, and recording of space weather event parameters for hazard and risk assessment science and engineering. To support international resilience to space weather, the Government of Canada participates in the **Australia-France-Canada-Japan Space Weather Consortium** for the provision of space weather forecasts to the International Civil Aviation Organization. By contributing to Consortium, Canada assists aviators around the world by providing sufficient warning of space weather phenomena that may negatively affect communications, navigation, and crew and passenger health.

To promote the resilience of new and existing infrastructure systems to climate and disaster risks, Canada is a member of the Coalition for Disaster Resilient Infrastructure. Canada will continue to contribute to this international initiative by sharing its experience with other stakeholders, while learning from its international partners. In 2020, Canada also joined the Coalition for Climate-Resilient Investment (CCRI), a UN Climate Action Summit and COP26 flagship initiative. For example, the Government of Canada is involved in CCRI's Systemic Resilience Forum, which is focused on advancing the practical integration of climate risks in public and private infrastructure investment decision-making.



4. Prospective review and commitments

As the Government of Canada looks ahead to 2030 and beyond, it is evident that there is still much work to be done at the local, regional and national levels to ensure that Canada realizes the intent of the Sendai Framework.

The intensifying complexity of events and severity of disaster impacts reinforces the value of an EM approach premised on a holistic and multidimensional understanding of risk. This emboldens the necessity of advancing trans-disciplinary research and cutting edge analytical tools to deepen our collective understanding of risk and support decision-makers at all levels of government and across the whole of society.

As we look to build resilience across Canada, it is important to emphasize that **Indigenous communities** are among those most impacted by emergencies due to their remote and coastal locations, insufficient access to emergency services, their dependence on natural ecosystems. The Government of Canada continues to encourage the federal, provincial and territorial governments within their areas of responsibility to provide First Nations, Métis and Inuit peoples and their communities with the capacity to integrate traditional knowledge and public awareness and education programs into disaster risk reduction. To this end, the federal, provincial and territorial governments will continue to prioritize a meaningful dialogue with First Nations, Métis and Inuit peoples to address their disaster risk reduction needs and emergency management priorities.

Underlying these initiatives is a focus on championing the empowerment of **women and girls**, both in Canada and around the world. This is especially important in the area of disaster risk reduction, where elderly people, children, women, Indigenous Peoples and racialized communities, and persons with disabilities face a number of vulnerabilities. The Government of Canada has made gender equity a priority in the programs mentioned in this report, while being at the forefront of the global effort to advance gender equality and empower women and girls through our **Feminist**

International Assistance Policy (FIAP), humanitarian efforts, and environment and climate action.

4.1 Commitments for realising the outcome and goal of the Sendai Framework

Canada is committed to continuing to develop a flexible and adaptable system for preparing and responding to disaster risks and increasing resilience and mitigation strategies to an increasingly complex and evolving hazard and risk landscape.

In addition, building on the strong foundations achieved over the past seven years, Canada is committed to taking a leadership role in developing a more effective response to disaster risk. The Government of Canada will continue to implement the Sendai Framework for Disaster Risk Reduction and make linkages with United Nations Initiatives where Canada is also fully engaged, such as:

- The United Nations' Sustainable Development Goals 2030, which recognizes that poverty reduction must complement strategies which improve health and education, reduce inequality, and spur economic growth;
- The United Nations Framework Convention on Climate Change and the Paris Agreement, which seeks to strengthen global response to climate change by increasing the ability of all to build resilience, reduce vulnerability and minimize loss and damage;
- The Glasgow Climate Pact, which calls for a doubling of finance to support developing countries in adapting to the impacts of climate change and for scaling up action and support for implementing approaches for averting, minimizing and addressing loss and damage.

4.2 Progress in risk assessment, information and understanding

To promote collaboration among whole-of-society organizations, the Government of Canada has established the **Emergency Management Public Awareness Contribution Program** to bring about a shift in the preparedness and readiness of Canadians when it comes to disasters and emergencies, to reduce financial costs of disaster response and recovery, and to increase the resiliency of individuals and communities across provinces and territories. The Program functions by providing

funding to whole-of-society organizations to increase the level of understanding of the risks associated with natural disasters and what can be done to prepare for and mitigate weather-related emergencies for vulnerable groups, particularly low-income Canadians, seniors, women, new Canadians and Indigenous communities.

To strengthen Canada's understanding of its national flood risk, the Government of Canada has established a **Task Force on Flood Insurance and Relocation** to strengthen nation-wide flood mapping; to provide better flood risk information to Canadians; and to examine options for low-cost residential flood insurance to residents of high risk areas that are prone to flooding. Likewise, the federal government is committed to advancing a low-cost national flood insurance program and action plan that will assist homeowners with potential relocation. Canada is advancing work on possible low-cost national flood insurance programs to address protection gaps in high risk areas, as well as exploring relocation for those at the highest risk of repeat flooding. The Task Force's final report on findings was released in 2022. The report provides evidence and information required to support decision-making and a way forward on a national flood insurance program, with special considerations for potential strategic relocation of those at most risk.

Starting in 2022, the Government of Canada is investing \$63 million CAD over three years for the **Flood Hazard Identification and Mapping Program** to complete flood hazard mapping of higher-risk areas and to make this flood hazard information accessible. This Program will be completed in partnership with Canada's provinces and territories, on a cost-sharing basis, with the goals of developing and disseminating flood hazard maps for higher risk areas, filling data gaps for understanding flood risk and vulnerability, and advancing consistent best practices and flood mapping approaches across jurisdictions. At present, the Government of Canada has up-to-date flood coverage for almost 20% of Canadians living in high-risk areas and is aiming for the public release of all national flood hazard and risk information by 2024.

To build Canada's risk awareness of earthquakes, the Government of Canada is currently operationalizing its **National Earthquake Risk Assessment Framework** to evaluate and prioritize earthquake risk reduction measures so that decision makers, planners and individuals can take informed actions that build disaster resilience at the community level. In doing so, Canada is developing a national earthquake risk assessment at the neighbourhood scale, based on indicators that support reporting on the Sendai Framework and domestic risk reduction objectives as well as developing a scenario library to support emergency planning to prepare for and understand the

potential consequences of earthquake events. In parallel, the Government of Canada is in the process of developing an **Earthquake Early Warning System** that will **provide** infrastructure operators and the general public with timely warning of earthquake shaking. Through the installation of seismic networks and development of alerting protocols, this warning system will allow whole-of-society partners to take immediate actions that will reduce casualties and damage that would otherwise be caused by the earthquake.

To build Canada's risk awareness to wildfires, the Government of Canada will be investing \$170 million CAD over 11 years to establish **WildFireSat**, Canada's new wildfire monitoring satellite system that is expected to be operational by 2028. WildFireSat will solidify Canada as a world leader in wildfire management and research and in the deployment of breakthrough wildfire management technology in space. The WildFireSat system will consist of satellites equipped with infrared sensors to measure the energy emitted by wildfires, capturing information around fire intensity and rate of spread. Moreover, it will also enable Canada to more accurately measure the carbon emitted by wildfire to support carbon reporting for international climate agreements.

To protect Canadians from health risk posed by drug and chemical exposures, the Government of Canada is seeking to implement by 2023 the **Canadian Surveillance System for Poison Information** surveillance tool. This tool will aggregate, analyse and interpret poison information from Canadian Poison Centres to provide timely safety alerts and review pan-Canadian trend data. In parallel, **Toxicovigilance Canada** is a pan-Canadian network which enhances the capacity for the timely detection, analysis and response to poisonings drug and chemical exposures. This network currently includes over 450 whole-of-society members, including poison centres, provincial health partners and toxicology laboratories, law enforcement and public safety professionals.

In 2023, the Government of Canada will publish its first public report on the **National Risk Profile** (NRP), which covers risks stemming from wildfires, floods and earthquakes. The report will document findings from risk and capability assessments, alongside additional context and narrative content from subject matter experts. Concurrently, the Government of Canada will also begin the second round of the NRP, which will cover hurricanes, heat waves and electromagnetic space weather events. In future years the scope of the NRP will expand to look at a broader range of hazards, including human-induced hazards.

4.3 Progress in risk governance and management

The Government of Canada recognizes that a robust disaster risk architecture must take place at the community, regional, national, and international levels to better align planning, policymaking and financing support with developing countries' needs for more results for people and the planet. To support this initiative, Canada's **Minister of Emergency Preparedness** will aim to make Canada more ready, prepared and resilient by 2030 and to successfully navigate our climate impacted future and risk landscape. This mandate includes the following thematic areas:

- Strengthening governance, coordination and integration across all-hazards, recognizing emergency management is a whole-of-society priority;
- Strengthening Inclusive Governance by working with First Nations, Métis and Inuit leaders, along with provincial and territorial governments and other stakeholders, to strengthen the governance for emergency preparedness, response and recovery;
- Bolster national readiness and resilience for future pandemics and emergencies, while enabling better access to interoperable all-hazards capabilities;
- Improve and promote a common understanding of disaster risks, and support strategic investments in risk reduction, including resilient infrastructure.

Through **Canada's 2030 Emissions Reduction Plan** and announcements in the 2022 Federal Budget, the Government of Canada reconfirmed its commitment to advancing Indigenous Climate Leadership to support the co-development of an Indigenous Climate Leadership Agenda and phased implementation of distinctions-based climate strategies. "Recognizing Indigenous climate leadership means investing in the agency of Indigenous Peoples and communities, supporting Indigenous-led and delivered solutions, equipping Indigenous Peoples with equitable resources, and ensuring appropriate access to funding to implement self-determined climate action (Strengthened Climate Plan, December 2020)."

This initiative will work with First Nations, Inuit, and Métis to build capacity and roadmaps for self-determined climate action, including Indigenous Peoples inclusion in climate governance and policy, and the transition to Indigenous-led and delivered climate programming. The goal of this overall initiative is to recognize and respect

Indigenous Peoples climate leadership and agency, to enable integrated community climate action and decision-making on mitigation and adaptation, and to couple climate action and reconciliation.

4.4 Progress in investment in risk reduction and resilience

International Commitments

Protecting and restoring biodiversity plays a vital role in strengthening resilience against the effects of climate-related disasters. In particular, nature-based solutions provide cost-effective and resilient alternatives which can help build resilience for vulnerable countries such as Small Island Developing States and Least Developed Countries. At the global level, nature-based solutions have become a major area of interest for countries to ramp up their adaptation and resilience efforts. For example, such solutions can be used to ensure sustainable marine and coastal management, addressing the issue of sea-level encroachment and offering hazard protection via shoreline stabilization as well as pollution and flood control.

Acknowledging that nature-based solutions can reduce the frequency of natural hazard occurrence but also the magnitude of their impacts, the Government of Canada is committed through its new **International Climate Finance Program**, to increase support for nature-based solutions and mainstream nature into climate-related investments in line with the G7 Nature Compact. The integration of nature-based solutions into all investments is fundamental for vulnerable countries that are increasingly exposed to rising sea levels, extreme climate events, and declining ocean health. Canada's initiatives using nature-based solutions include:

- The Government of Canada's \$3.9 million CAD **Natural Infrastructure for Water Security Project** aims to promote the conservation, restoration, and rehabilitation of natural ecosystems, to improve Peru's water security and climate risk resilience. Moreover, the project also aims to promote the participation and leadership of women in decision-making spaces and ensure the integration of gender considerations into national climate and water policies.
- The Government of Canada's \$10 million CAD contribution to the multi-donor Kiwa Initiative (2020-2026) has focused mainly on managing ocean resources, such as fisheries, in a sustainable way to promote food security and sustainable livelihoods. This project aims to make Pacific Island ecosystems, economies and communities, especially Indigenous women, more resilient to the impacts

of climate change through small to large-scale biodiversity conservation, nature-based solutions and climate change adaptation projects at local, national and regional levels.

By steadily integrating disaster risk reduction into its ongoing and future climate finance programming, the Government of Canada will foster positive results in reaching vulnerable countries as well as supporting adaptation and resilience. Ongoing initiatives in the field include:

- Canada contributed \$250 million CAD (Phase 1 - 2012-2037) and \$223.5 million CAD (Phase 2 - 2019-2044) to establish the **Canadian Climate Fund for the Private Sector in the Americas** at the Inter-American Development Bank Group. One unique feature of the Fund is the innovative way in which blended finance was used to achieve strong gender outcomes by using a performance-based incentive program to encourage its private sector clients to integrate gender considerations into their operations.
- Canada contributed \$275 million CAD to the **Canadian Climate Fund for the Private Sector in Asia** (2013-2037) to support efforts to pursue a low-carbon and climate-resilient development path for the region. This includes gender-responsive activities related to disaster risk management, water supply management, agriculture and forestry, land use management, natural resource management, resilient infrastructure, coastal protection, clean and renewable energy, sustainable transport, and waste management.

Domestic Commitments

Under the **Canadian Agriculture Partnership** ending in 2023, up to \$690 million CAD is available through the AgriInnovate and AgriScience federal programs to enhance the competitiveness of the sector through science, research, and innovation, and are focused on accelerating the pace and adoption of practices that encourage climate change mitigation and adaptation.

To strengthen the resilience of Canada's agriculture and agri-food production sectors, the Government of Canada recently began the development of its **Sustainable Canadian Agricultural Partnership** (2023-2028). This Framework will seek to encourage supply chain resilience, further promote the reduction of greenhouse gas emissions in Canada and position producers and processors to seize economic opportunities from evolving consumer demands.

The Government of Canada, in consultation with the agriculture and agri-food sector, Indigenous Peoples, and other stakeholders, is looking to develop a **Green Agriculture Plan** for Canada (2022-2040) that will seek to address long-term agri-environmental issues to advance national sustainability and resilience efforts. The Plan is intended to be comprehensive, integrated, and will focus on five priority areas: climate mitigation, adaptation, soil health, biodiversity and water. Broad engagement details on the Plan is anticipated to be completed in 2023.

To ensure the safety of mariners in Canadian waters, the Government of Canada is committed to renewing its **Oceans Protection Plan** to further advance its ability to prepare for, mitigate, and respond to, incidents and hazards. Through the renewal of the Oceans Protection Plan, Canada will advance a suite of initiatives under the **Coastal Marine Response Network** that will augment marine emergency response capacity across Canada. This Network will build a system of marine emergency responders, including Indigenous and coastal communities, and will be achieved through support for training, on-water exercises, and funding for response equipment and tools to build a network of responders across Canada, with a particular emphasis on remote communities.

To promote resilience in Canada's transportation sector, Canada is modernizing its **Incident Management System** to effectively contribute to the development and maintenance of departmental, federal and international emergency management plans and arrangements at the strategic and operational level. Under this system, the Transport Canada Situation Centre will continue to provide 24/7 support by monitoring emerging or potential safety and security threats and communicating timely information with key partners. Additionally, the Aviation Operations Centre is Transport Canada's national point of contact for civil aviation emergency management activities and will continue to monitor the National Civil Air Transportation System (NCATS) on a 24/7 basis and respond to emergencies that require the attention or coordination of concerned functional branches, including regional offices and other departments or agencies.

4.5 International collaboration, partnership and cooperation

The Government of Canada has built on the lessons learned from the first seven years of implementing the Sendai Framework. Canada has adopted a whole-of-society, all-hazards approach to planning for disasters and, in conjunction with provinces and territories, has developed a national Emergency Management Strategy and Action

Plan. Ongoing initiatives, including data collection for the National Risk Profile, improved methods for complex analysis of risk, and Canada's work to develop its National Adaptation Strategy are examples of work leading to more adaptable and resilient emergency management in Canada.

To promote international collaboration on disaster risk reduction, the Government of Canada recently agreed to establish the **NATO Climate Change and Security Centre of Excellence** in Montreal, Canada. This Centre of Excellence will assist NATO, its Allies, and other global partners to better understand, adapt to, and limit the impact of climate change on security. Specifically, the Centre will support NATO's work on climate and security; provide Allies with a central location to pool their knowledge, develop effective responses to the security impacts of climate change; and can provide a platform for outreach with diverse global actors and entities addressing elements of this same challenge. Canada's leadership on this initiative aligns closely with UNDRR's guiding principle to promote effective, meaningful and strong international cooperation and global partnerships.

Between September 2022 and March 2023, the Government of Canada will be hosting a series of meetings as part of an international **Open Geospatial Consortium Disaster Pilot** to convene on how open geospatial standards-based services can enable decision-making in the context of drought and associated disasters. This Consortium will have three main priorities: identify the types of geospatial information required to support drought and associated disaster management, identify which stakeholder groups require drought-related geospatial information, and how Open Geospatial Consortium standards can enable geospatial information to flow between these stakeholders.