



Government
of Canada

Gouvernement
du Canada

Federal Adaptation Policy Framework

Contents

About the Framework.....	2
Context.....	2
Vision Statement.....	3
Objectives	3
The Federal Role	4
1. Generating and sharing knowledge	4
2. Building adaptive capacity to respond and helping Canadians take action	4
3. Integrating adaptation into federal policy and planning (mainstreaming)	5
Criteria for Identifying Federal Priorities	6
1. Nature of impacts and vulnerability	6
2. Appropriateness of federal action	6
I. Unique federal role and responsibility	6
II. Unique federal capabilities	6
III. Timeliness of action	7
IV. Effectiveness of action	7
3. Mainstreaming ability	7
4. Collaboration potential	7
Glossary.....	8

Recommended citation: Government of Canada (2011), *Federal Adaptation Policy Framework*, Environment Canada, Gatineau, QC

About the Framework

The Federal Adaptation Policy Framework guides domestic action by the Government of Canada to address adaptation to the impacts of climate variability and change. It sets out a vision of adaptation in Canada, objectives, roles of the federal government, and provides criteria for setting priorities for action. While adapting to climate change requires a long-term vision, this framework is aimed at targeting medium-term strategies.

Climate change impacts are already being observed across a wide range of federal services, programs, policies, and regulations and all must adapt. Implementation of this framework is intended to result in adaptation considerations being proactively and explicitly included in federal processes, in order that adaptation planning and programming occurs as part of ongoing federal activities. The framework will support decision-making in federal organizations' planning of adaptation elements in their programming and in central agencies reviewing of programs with adaptation elements. It calls for consideration of climate change impacts, without prescribing how or when to adapt.

This domestic framework will also serve as input to the development of Canada's international policy on climate change adaptation.

Context

The Earth's climate is already changing and it will continue to change in the medium-term, regardless of the effectiveness of global measures to reduce greenhouse gas emissions. The Intergovernmental Panel on Climate Change (IPCC) agrees that the rate of change will exceed that to which humans or ecosystems can easily adjust without explicit planning and action by decision-makers.

The impacts of a changing climate are evident in every region and sector across Canada. Higher temperatures, declining sea and lake ice, diminishing glaciers, melting permafrost, more heat waves, more violent storms, and increased coastal erosion are some of the changes being observed. The North is particularly vulnerable to the impacts of climate change, as they are experiencing changes that are more extreme and occurring at a faster rate than the rest of Canada. The impacts of many recent severe weather events demonstrate that Canadian communities, critical infrastructure and human health are vulnerable to climate change. Some of the most widespread impacts in Canada are related to waterways and water resources, which affect agriculture, fisheries, energy production, transportation systems, municipalities, and recreation. Climate change impacts are not only physical; they can have long-lasting economic, social, environmental, and human health effects. While there will be negative impacts as a result of climate change, Canada will also experience benefits such as longer agricultural and ice-free shipping seasons and expanded tourism and recreation opportunities.

FEDERAL ADAPTATION POLICY FRAMEWORK

Canadians need to adapt to the changing climate by taking action to reduce negative consequences and to take advantage of new opportunities that the changes may bring. Climate-sensitive decisions can no longer be based solely on historical climate data.

According to the IPCC, adaptation is the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects that moderates harm or exploits beneficial opportunities. Adaptation requires making decisions in the face of the uncertainty inherent in the prediction of future climate change and variability, in the cumulative impact of climate impacts, and of future socio-economic challenges and opportunities. Adaptation involves reducing vulnerability and strengthening resilience to climate change and variability. Adaptation is best guided by incorporating new scientific information (e.g., future climate models and scenarios) into existing risk management processes.

Vision Statement

Recognizing the need to adapt to climate change, the wide variation in climate impacts across Canada, and the many groups that are involved in adaptation, the Government of Canada adopts the following vision:

Canada is resilient to a changing climate by successfully adapting to the challenges and opportunities, and ensuring the health, safety, and security of Canadians and Canada's environmental, social, and economic wealth in a long term and sustainable manner.

Objectives

The following are the objectives of the Federal Adaptation Policy Framework:

1. Canadians understand the relevance of climate change and associated impacts on their quality of life.
2. Canadians have the necessary tools to adapt to climate change effectively.
3. The federal government, as an institution, is resilient to a changing climate.

The Federal Role

Given the broad health, environmental, social, and economic impacts of climate change, the federal government must take action to ensure that it effectively integrates climate change considerations into its own programs, policies, and operations and facilitates action by others. These roles are accomplished by:

1. Generating and sharing knowledge

The Government of Canada plays a crucial ongoing role in the generation and provision of scientific information to support evidence-based decision-making related to climate change impacts and adaptation. In some cases, the federal government hosts knowledge and expertise not found elsewhere in Canada. This includes a range of activities, such as periodic national assessments of climate change, development of innovative new technologies and practices, ongoing environmental monitoring, research in specific areas (e.g. climate change projections, climate change effects on forests, and transportation infrastructure), and support for and engagement with stakeholders in the development of tools for adaptation. This role capitalizes on federal strengths in science and technology that are not replicated outside the Government. It is also essential to the understanding of critical issues and the ability of stakeholders to develop and apply effective responses.

The Government of Canada is well positioned to mobilize economies of scale to generate and deliver fundamental knowledge and information that can be applied across the country. Sharing information, both within the federal government, the international community, and with other external stakeholders (e.g., academia) will increase awareness of climate change impacts, assist with capacity building, and reduce adaptation costs in all regions and sectors. By participating in the generation of new information and tools, the federal government will ensure that this is made public.

Knowledge of climate variability, change, impacts, and adaptation options is a fundamental input to both internal and external adaptation. Further research and modeling to address knowledge gaps, such as socio-economic considerations and refining information at local-scales, will lead to better and more targeted adaptation. Although our climate variability and change knowledge is incomplete, there is now enough information to implement adaptation measures.

2. Building adaptive capacity to respond and helping Canadians take action

The federal government plays a key role in helping to build the capacity of the private sector, other levels of government, communities, and organizations to assess and manage the risks and complexities of a changing climate and to take effective and sustainable action. These efforts should continue. The federal government is particularly well-positioned to support the development and dissemination of climate change information, guidance, and tools that help Canadians to adapt.

The federal government's ability to facilitate collaboration amongst many different stakeholders can be leveraged to build broad-based awareness and understanding of climate change in order to motivate and promote action at all levels across the country. For example, the government could engage stakeholders and facilitate expert discussions on assessing the need for adaptation and ways to adapt within their domains, and providing decision-making tools that others can use¹. Further, collaborative action across governments, economic sectors, communities, and disciplines can increase the effectiveness and efficiency of adaptation measures.

3. Integrating adaptation into federal policy and planning (mainstreaming)

Managing the potential impacts of climate change is also part of an organization's risk management considerations. According to the Treasury Board of Canada Secretariat's Framework for the Management of Risk, "Effective risk management equips federal government organizations to respond actively to change and uncertainty by using risk-based information to enable more effective decision-making." While there are some anticipated benefits, impacts from climate changes are projected to be mostly negative and could affect all aspects of Canadian society. As such, it is the responsibility of each federal organization to apply its experience in risk management to the climate change issues that could affect its continued ability to deliver on its mandate. In this way, federal organizations can build the capacity to proactively manage uncertainty that stems from climate change and make informed decisions about how best to minimize negative impacts and maximize opportunities.

As Canada's largest organization, with operations in all regions of the country, an effective way for the federal government to advance adaptation efforts across Canada is to lead by example, specifically by building resilience into federal assets, programs and services against the impacts of climate variability and change. This means ensuring that climate change considerations are integrated into federal activities, such as policy and planning processes. Factoring climate variability and change into policy, programs, and operations is one of the most important ways the government can contribute to adaptation and is consistent with the government's risk management approach of enhancing the protection of public assets and resources and strengthening planning and decision-making. Experts agree that integrating climate variability and change information into policy, planning, and decision-making is more effective and more cost-efficient than addressing adaptation in isolation.

Via integrating adaptation into federal policy, planning, and operations adaptation planning and decision-making will become part of ongoing management processes, rather than an independent policy or program domain, and will be accomplished within existing government structures. By integrating adaptation, the government itself adapts, and in so doing can mobilize its authorities, investments, and economic instruments in support of adaptation actions across the country. Integration will require building internal capacity, disseminating information, and developing new knowledge.

¹ Such as the Canadian Communities' Guidebook for Adaptation to Climate Change.

Criteria for Identifying Federal Priorities

In carrying out the federal role, it is recommended that federal departments and agencies give consideration to the following criteria when identifying climate change adaptation priorities:

1. Nature of impacts and vulnerability

Adaptation should be a priority where negative impacts are most severe or beneficial impacts are of the greatest potential. Severe impacts can occur in a number of ways, such as via a large impact on a small group (e.g. northern communities), or a small impact on a large group.

Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity². The nature of the resulting profile of potential vulnerabilities is an important input to adaptation decision-making. There may be thresholds where risks from impacts change, irreversible losses occur, or where impacts cease to be beneficial.

2. Appropriateness of federal action

Several criteria are useful for guiding priority setting and decision making for determining when and where it is appropriate for the federal government to act. These criteria should be considered in the order they are presented.

I. Unique federal role and responsibility

The nature of federal responsibility is a factor in setting priorities. Greater attention should be accorded to areas of sole federal responsibility (e.g., First Nations and Inuit, oceans, inter-provincial, and international matters), where the federal government has fiduciary or other direct responsibilities, is better positioned to act than other groups (e.g., gathering and disseminating climate change adaptation information, guidance, and tools), or has legislative authority (e.g., mainstreaming adaptation into federal policy and planning).

II. Unique federal capabilities

Greater consideration should be accorded to areas in which the federal government has the levers, assets, and capabilities that others do not have to generate knowledge, products, and services (e.g., decision-making tools, future climate data) necessary for adaptation in Canada.

² Intergovernmental Panel on Climate Change (2007): Appendix I: glossary; in *Climate Change 2007: Impacts, Adaptation and Vulnerability* (Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change); (ed.) M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson; Cambridge University Press, Cambridge, United Kingdom, p. 869-883, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-app.pdf>

For example, at present, the federal government operates some unique climate, oceans and freshwater monitoring networks and has expertise unparalleled in Canada in climate modeling. The resulting environmental data are key inputs to adaptation planning in organizations across Canada.

III. Timeliness of action

It is important to take cost-effective action in situations where inaction would result in increased negative impacts, including associated costs or forgone opportunities. Implementing adaptation should be a priority when existing provisions lock-in conditions inadequate for predicted future changes in climate. For example, costs associated with future climate-related failures in infrastructure could potentially be avoided by changing current infrastructure design protocols to become more resilient to predicted future changes in climate.

IV. Effectiveness of action

Federal action on adaptation should be directed towards areas where intervention is effective and efficient. Indicators of effectiveness and cost-efficiency are collaboration, which leverages federal investment, and broadly applicable products, services, policies, or actions.

3. Mainstreaming ability

Climate change adaptation must become the new business-as-usual for individuals and organizations across Canada. Knowledge and tools must support independent action and the integration of adaptation into existing objectives, strategies, policies and processes at all levels and stages. Policies and programs will need to be evaluated and revised as conditions change over time and new knowledge is generated.

4. Collaboration potential

The federal government should focus on priority-driven partnerships in order to integrate plans and actions among partners and support a coherent, targeted response in the key domains of health and communities, the economy, infrastructure, and natural systems.

Glossary

Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects that moderates harm or exploits beneficial opportunities.
Climate	The average weather, usually expressed in terms of the parameters temperature, precipitation, and wind.
Climate change	A change in the mean and/or the variability of climate parameters over a period of time ranging from months to thousands or millions of years.
Greenhouse gases	Gases, both natural and anthropogenic, that absorb infrared radiation in the atmosphere, causing warming of the earth. Water vapour, carbon dioxide, nitrous oxide, methane, and ozone are the primary greenhouse gases.
Mitigation	Intervention to reduce the sources or enhance the sinks of greenhouse gases.
Resilience	Capacity of people and systems to absorb negative impacts and respond to changing climate conditions.
Risk	A combination of the likelihood (probability of occurrence) and the consequences of an event.
Risk management	A systematic approach to setting the course of action under conditions of uncertainty, by applying management policies, procedures, and practices to the analysis, evaluation, control, and communication about risk issues.
Sink	Any process, activity or mechanism that removes a greenhouse gas, an aerosol, or a precursor of a greenhouse gas or aerosol from the atmosphere.