

A photograph of two people carrying a long green canoe on their shoulders. They are standing on a sandy shore covered with fallen autumn leaves. The background shows a body of water and a forest with colorful foliage under a cloudy sky. A large white curved graphic element is overlaid on the right side of the image.

Toward a National Adaptation Strategy for Canada:

Key insights from global peers

IISD REPORT



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Toward a National Adaptation Strategy for Canada: Key insights from global peers

June 2021

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Funding provided by:





Acknowledgements

IISD would like to thank the Insurance Bureau of Canada for its financial support toward the preparation of this report, which enabled its creation. The authors would also like to thank Craig Stewart and Robin Edger of the Insurance Bureau of Canada for their input throughout the development of this report, which has strengthened the final product.

We also want to express gratitude to the following individuals for taking the time to share their valuable insights regarding national adaptation planning processes in their countries: Sarah Anderson, Marie-Caroline Badjeck, Laniel Bateman, James Butler, Emma Corbett, Mariella De Soissons, Matthew Godsoe, Frances Pimenta, Allison Rokke, Frédéric Schafferer, Mark Stafford Smith, Liviu Stirbat, and Kazuaki Takahashi. We recognize that the opinions expressed in this report are those of the authors.

Finally, we would like to thank our colleagues, Richard Florizone, Daniel Morchain, and Julie Dekens for their inputs to the report's content, and Catherine Burge and Elise Epp for their work on its accompanying infographic.



Executive Summary

In December 2020, Canada’s federal government announced its new climate plan, [A Healthy Environment and a Healthy Economy](#), which included a commitment to developing Canada’s first-ever national adaptation strategy (NAS). This endeavour will require careful thought, dedicated resourcing, and an approach tailored to Canada’s governance structure and adaptation needs. Recognizing that Canada has some catching up to do, the federal government can learn from international good practice and design a process that will produce an ambitious and inclusive adaptation strategy, one that protects and prepares Canadians in a changing and increasingly uncertain climate.

Global progress on the development of national adaptation strategies and plans has been steady over the last 20 years, although it is difficult to assess whether this has translated into accelerated and effective implementation on the ground. Moreover, the current financing gap, where the availability of financial resources is not keeping pace with the growing adaptation needs, risks limiting the utility and impact of adaptation planning. This dynamic is also reflected within Europe, a region that is significantly advanced in its adoption of national adaptation strategies and plans. The COVID-19 pandemic may be an inflection point for adaptation action around the world, as recovery efforts may potentially divert attention and resources away from adaptation or, conversely, usher in more resources for adaptation if deliberate and strategic linkages are made between the two agendas.

Within this global and regional picture of progress, a closer look at 12 adaptation policy instruments from 11 countries provides some insights into how different countries are approaching efforts to mobilize adaptation action at the national level. The countries selected for review represent a mix of policy instruments (e.g., assessments, strategies, plans, and programs) and experience (e.g., recent vs. 10+ years). These countries are Australia, Fiji, France, Kiribati, Germany, Japan, the Netherlands, New Zealand, South Africa, Switzerland, and the United Kingdom. The policy instruments were assessed in terms of the degree to which they addressed social inclusion, the emphasis on scientific assessments of climate vulnerability and risks, the use of detailed frameworks for prioritizing risks and adaptation solutions, the number of defined adaptation actions, the inclusion of adaptation targets and indicators, and references to progress reporting.

The country review revealed that legislative backing for adaptation action at the national level is on the rise, with more countries adopting laws in recent years. In addition to this, the ongoing commitment to iteratively address climate change impacts is demonstrated by the fact that more than half of the policy instruments have recently been updated or are about to be updated. Most countries reviewed have codified, in their national adaptation policies, the responsibility for coordinating adaptation action at the national level and between jurisdictions.

In terms of social inclusion issues, almost all policy instruments reference them but very few emphasize matters such as gender equality regularly and throughout. Countries that have defined



cycles of climate risk assessment, planning, implementation, and review tend to emphasize scientific assessments and prioritization frameworks in their adaptation policies; those countries that prioritize climate risks do so in terms of magnitude, urgency, or need to act. The number of defined adaptation measures in national adaptation plans and programs ranges from 50 to over 300. In tracking adaptation progress, the use of targets is an emerging practice, while indicators are slightly more common although still largely focused on adaptation processes rather than outcomes. Moreover, most countries articulate a clear process and timeframe for progress reporting, and name the bodies responsible for overseeing its execution. Finally, some policies look at the international dimensions of climate risk, such as value chain disruptions and migration flows, and those of adaptation action, such as greater need for support in other parts of the world.

While Canada's federal government can glean a great deal from international experiences with national adaptation policies, it also has a solid domestic foundation upon which to build its NAS. This foundation consists of policies, institutions, and knowledge managed by different federal departments that address climate risk from different vantage points—namely, climate change adaptation and emergency management. Both areas have earlier federal policy frameworks that promote an integrated approach, which should inform the NAS, and both also have existing institutions that support interjurisdictional coordination. Importantly, looking beyond the federal level, a range of activities are taking place at the provincial, territorial, and municipal levels, within Indigenous communities, and by the private sector that must be leveraged in developing a coherent and impactful NAS.

The NAS will need to be grounded in the best available understanding of current and projected climate risks and effective adaptation actions. In this regard, there are a range of national assessments, expert panel recommendations, and Task Force efforts related to different aspects of adaptation and disaster risk management that should be brought together in formulating the NAS. As the federal government plans for and prepares its NAS, it also should look for opportunities to achieve greater integration of its disaster risk management and climate adaptation efforts in the areas of policy and governance, the provision of climate services, the implementation of risk reduction measures, financing, and its monitoring, evaluation, and learning system.

Taken together, this foundation of domestic capacities and international practice provides the federal government with a wide range of issues and options to consider in both the process of developing Canada's NAS and the topics it might cover. This analysis offers 13 mutually reinforcing considerations organized into four main categories. Woven throughout all of them are the recurring themes of institutions, engagement, process, accountability, and inclusion.

1. Set the stage for a successful NAS development process
 - a. Define the exact role and purpose of the NAS
 - b. Specify clear institutional arrangements for the NAS
 - c. Build an inclusive and progressive engagement process



2. Include core elements for mobilizing federal action on adaptation
 - a. Develop a unified approach to climate risk assessment at the national level
 - b. Enable policy alignment around climate-resilient development
 - c. Advance reconciliation with Indigenous Peoples in Canada
 - d. Design a clear framework and system for tracking progress in adaptation
3. Facilitate early and sustained action
 - a. Bridge the implementation gap
 - b. Create a knowledge management strategy
4. Position Canada as a leader on adaptation
 - a. Put gender equality and social inclusion at the heart of Canada's approach to adaptation
 - b. Recognize the employment and labour aspects of adaptation
 - c. Elevate the role of nature in managing climate risks
 - d. Address adaptation issues outside of Canada's borders

The opportunities in developing Canada's first-ever NAS are numerous and exciting. It will be an important step towards consolidating the various recent investments the federal government has made in climate risk management and towards crafting a unified vision and approach to preparing and protecting Canadians as they confront the accelerating impacts of climate change.



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Acronyms and Abbreviations

APA	Adaptation Action Plan (Germany)
AFN	Assembly of First Nations
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Germany)
CCA	Council of Canadian Academies
CCME	Canadian Council of Ministers of the Environment
DRR	disaster risk reduction
ECCC	Environment and Climate Change Canada
EU	European Union
FPT	federal, provincial, and territorial
GBA+	Gender-Based Analysis Plus
ICA	Indigenous Climate Action
ITK	Inuit Tapiriit Kanatami
KJIP	Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management
M&E	monitoring and evaluation
MEL	monitoring, evaluation, and learning
MNC	Métis National Council
NAP	national adaptation plan
NAS	national adaptation strategy
NbS	nature-based solutions
NCCRA	National Climate Change Risk Assessment
NDC	nationally determined contribution
NRCan	Natural Resources Canada
OECD	Organisation for Economic Co-operation and Development
PCF	Pan-Canadian Framework on Clean Growth and Climate Change
PCI	Plataforma Climática Indígena
SD	science-driven
SI	science-informed
TORs	terms of reference
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change



1.0 Introduction

The majority of Canadians believe climate change is a crisis that needs to be urgently addressed. While federal efforts have been underway for over a decade to identify and address the risks of climate change in Canada (see section 4), a dedicated national adaptation strategy or plan has not yet been developed. This is about to change, however, with the federal government's commitment, under its new climate plan, [A Healthy Environment and a Healthy Economy](#), to developing Canada's first-ever national adaptation strategy (NAS). Recognizing that Canada has some catching up to do, the federal government can learn from international good practice and design a process that will produce an ambitious and inclusive adaptation strategy, one that protects and prepares Canadians in a changing and increasingly uncertain climate. This paper reviews the global trends in adaptation planning, summarizes federal adaptation efforts to date, and builds on both to lay out some of key considerations for Canada's NAS.

As efforts around mitigation have accelerated, the case for adaptation in Canada has only strengthened. The latest science shows that Canada is warming twice as fast as the rest of the world and that the effects are being felt through more extreme heat, longer growing seasons, shorter snow and ice cover seasons, and a rising sea level (Bush & Lemmen, 2019). Severe weather events in 2020—one of the warmest years on record—caused CAD 2.4 billion in insured damage, the fourth highest on record (Insurance Bureau of Canada, 2021). In fact, the last decade has seen the cost of weather-related disasters rise from 1% to 5% or 6% of annual gross domestic product growth, and many households, jobs, and critical infrastructures across Canada are vulnerable to climate damages (Sawyer et al., 2020).

The growing domestic need for an adaptation strategy or plan has been reinforced by international policy commitments. Specifically, when Canada ratified the Paris Agreement in 2016, it signed up to a global framework for climate action which, among other things, requires countries to engage in adaptation planning and implementation.

The commitment in *A Healthy Environment and a Healthy Economy* (p. 66) states that the Government of Canada proposes to

develop Canada's first-ever National Adaptation Strategy, working with provincial, territorial and municipal governments, Indigenous peoples, and other key partners. The strategy would establish a shared vision for climate resilience in Canada, identify key priorities for increased collaboration and establish a framework for measuring progress at the national level. This work will help inform where the Government of Canada should best target its policies programs and investments going forward.

This endeavour will require careful thought, dedicated resourcing, and an approach tailored to Canada's governance structure and adaptation needs. The country's federated system combined with its constitutional relationship with Indigenous Peoples will call for extensive and meaningful engagement. Adaptation is context-specific, and Canada is comprised of many ecological, socio-



cultural, linguistic, legal, and political contexts. As the second biggest country in the world, with 15 eco-zones and 38 million inhabitants distributed very unevenly in urban and rural settings, Canada experiences climate impacts in a wide range of ways. Developing a national strategy that addresses this complexity, diversity, and scale will be challenging, but Canada cannot afford to wait any longer.

The purpose of this paper is to outline some key issues and considerations that should inform the development of Canada's NAS. The aim is to provide a starting point and direction for the process so that the federal government can get started quickly. These issues are rooted in international experience and good practice, which were gleaned through document reviews and stakeholder consultations, and will be highlighted throughout the document.



2.0 Adaptation Laws, Strategies, and Plans: What is the difference?

Adaptation governance at the national level is critical to mandating, coordinating, and allocating resources for adaptation action at the sub-national and local levels. This can be done through laws passed by national legislative branches, as well as through decrees, policies, strategies, and plans (all referred to as “policies” in this paper) issued by national executive branches.

Countries around the world have passed laws or acts that oblige national governments to take action on adaptation and that outline the rules and regulations for doing so. These laws have either been part of broader climate change laws or acts (e.g., New Zealand, United Kingdom), or have been stand-alone adaptation laws or acts (e.g., Japan). While the emphasis of most national climate legislation efforts still tends to be on mitigation, adaptation is getting an increasing share of attention—especially in developing countries, which have contributed least to climate change but are disproportionately affected by its impacts.

In terms of adaptation policies, many countries have developed a NAS, a national adaptation plan (NAP) or both. Strategies are typically broader in scope than plans, laying out the case for adaptation and the need for a policy response. They can provide a general framework—including a vision, objectives, and principles—for coordinating adaptation efforts at the national level, including a process for engaging stakeholders, assessing climate risks and vulnerabilities, and prioritizing measures.

National adaptation plans are often more implementation-focused. For countries that have a NAS, the NAP is about translating the strategy into concrete activities. The activities are often assigned to responsible agencies or jurisdictions, with timelines, possibly an indicative budget, and some basis for measuring progress. The idea is to develop such plans regularly—e.g., every five to ten years—as adaptation needs evolve. These plans should be shaped by the latest climate science, the ways climate impacts are being experienced, and the results and lessons from implementing earlier adaptation actions. Indeed, national adaptation planning processes are continuous and iterative.

Finally, some countries may develop a hybrid adaptation policy, combining the high-level strategic aspects of a NAS with the implementation-oriented elements of a NAP. This is often the case for developing countries that are taking their cues from the national adaptation plan process as [defined and mandated by the United Nations Framework Convention on Climate Change](#) (UNFCCC). This comprehensive process involves many steps, including articulating a national vision on adaptation, aligning it with a country’s development goals, prioritizing and implementing adaptation actions, and assessing and reporting on progress.



Canada's commitment under the *A Healthy Environment and a Healthy Economy* plan is to develop a NAS, although many elements typically contained within a NAS appear in Canada's previous adaptation policy documents. Moreover, the aim of identifying key priorities and a framework for measuring progress suggest a more operational aspect to the strategy. As such, for the purposes of this paper, experiences and lessons were drawn from a wider range of adaptation policies, not just NASs.



3.0 Key Trends in Global Progress on Adaptation Strategies and Plans

Significant progress has been made in adaptation planning over the last 20 years. The United Nations Environment Programme's (UNEP) recent *Adaptation Gap Report 2020* assesses global progress in adaptation planning. The authors recognize a positive trend towards embedding adaptation in policies and decision-making around the world, noting that 72% of countries have adopted at least one national-level adaptation planning instrument—such as a plan, strategy, policy, or law—and that another 9% are in the process of developing one (UNEP, 2021, p. xii). Canada is included among the countries that has an adaptation planning instrument, although it is unclear if this determination is based on the Adaptation Policy Framework, the Pan-Canadian Framework on Clean Growth and Climate Change, or another instrument.

However, it is difficult to assess whether more planning has translated into the achievement of adaptation targets and objectives. Despite overall progress in planning, the levels of engagement and the quality of planning instruments vary from country to country. Moreover, there is no agreed-upon methodology for ascertaining the adequacy and effectiveness of adaptation planning, or whether adaptation planning is actually helping countries meet their adaptation objectives. Nonetheless, the UNEP report proposes and examines five dimensions that shape adequacy and effectiveness: comprehensiveness, inclusiveness, implementability, integration, and monitoring and evaluation (M&E). Of these dimensions, the least amount of progress is observed under implementability and M&E. For implementability, 28% of countries use regulatory instruments such as standards and building codes, while only 8% of countries use incentives, such as taxes or subsidies, to encourage adaptation action. In terms of monitoring and evaluation, about a third of countries have M&E systems in place, are monitoring their adaptation efforts, have evaluated (or are planning to evaluate) their adaptation plans, or have done more than one of these.

The financing gap risks limiting the utility and impact of adaptation planning.

Financing for adaptation is grossly insufficient and is not keeping pace with growing needs. The UNEP report authors estimate that annual adaptation costs are already USD 70 billion among developing countries—an amount expected to grow significantly in coming decades without urgent mitigation action. However, the Organisation for Economic Co-operation and Development (OECD) found that donors committed USD 16.8 billion in 2018 (OECD, 2019)—far short of the needed amount—and there have been criticisms that donors have over-reported adaptation finance amounts (CARE, 2021). Similarly, the Global Center on Adaptation's *State and Trends in Adaptation Report 2020* also recognized this shortfall in adaptation finance in its assessment of the global state of adaptation planning. The report notes positive trends in adaptation planning but cautions against the “widening finance gap” and calls for greater efforts on tracking progress and improving state and non-state actors' understanding of adaptation.

COVID-19 has affected global progress in adaptation. The authors of both the *Adaptation Gap Report 2020* and the *State and Trends in Adaptation Report 2020* recognize the significance of



the COVID-19 pandemic in shaping the global adaptation landscape for better or worse. While the pandemic has the potential to divert attention and resources (both financial and human) from adaptation planning and action, both reports acknowledge the potential positive benefits for adaptation if the large-scale investments being made by governments through COVID-19 recovery packages seek to create strategic and intentional linkages with actions that build climate resilience and that are well aligned with countries’ climate adaptation priorities.

European countries have made considerable progress on adaptation planning. Moving from the global to the regional level, European Union (EU) member states are advancing on their NASs and NAPs (see Figure 1 below). The 2021 *EU Strategy on Adaptation to Climate Change* reports that “all Member States now have a national adaptation strategy or plan; adaptation has been mainstreamed into the EU’s policies and long-term budget; and the Climate-ADAPT platform has become a key reference for knowledge on adaptation” (European Commission, 2021, p. 3).

Figure 1. Overview of national climate change adaptation strategies and plans in Europe.

EEA Member States	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria													*		
Belgium															
Bulgaria															
Croatia															
Cyprus															
Czechia															
Denmark															
Estonia															
Finland										*					
France															
Germany											*				
Greece															
Hungary														*	
Ireland															*
Italy															
Latvia															
Lithuania															
Luxembourg														*	
Malta															
Netherlands												*			
Poland															
Portugal											*				
Romania												*			
Slovakia														*	
Slovenia															
Spain															
Sweden														*	
United Kingdom															
Iceland															
Liechtenstein															
Norway															
Switzerland															
Turkey															

 No adaptation policy adopted	 NAS and national adaptation plan (NAP) adopted
 National adaptation strategy (NAS) adopted	* NAS revision adopted

Source: European Environment Agency (2020).



Progress in adaptation planning and mainstreaming in Europe is not matched by progress in implementation. The European Environment Agency (EEA) found that “implementation of adaptation is still in its early stages in many countries because of a lack of funding or other barriers” and that only “some countries have started to monitor the implementation of adaptation activities.” In assessing the robustness of adaptation planning among European Union members, it also noted that

process-based information on the planning of adaptation at the national level is available from countries reporting to the EEA. Information on the implementation of adaptation at different levels is patchy at best. The assessment of outlooks relies primarily on expert judgement (EEA, 2020, p. 187).

Thus, both global and regional trends suggest that while the development of policy instruments has accelerated in recent years, and has established a critical enabling environment for adaptation, this is not necessarily translating into accelerated implementation. As well, information about the extent and impact of this gap is further complicated by limited progress in M&E of adaptation.

3.1 A Snapshot of Selected Adaptation Planning Instruments

Within the global picture of progress presented above, a selection of 12 policy instruments from 11 countries was examined in greater detail to draw insights and lessons for the development of Canada’s first-ever NAS. With Canada looking to move quickly on developing a policy instrument that accelerates coordinated action on adaptation across Canada, a range of approaches, policy instruments (e.g., assessments, strategies, plans, and programs), and experience (e.g., recent vs. 10+ years) were selected for review. These are summarized in Table 1 below.

Table 1. Selection of policy instruments driving adaptation action at the national level

Country	Description of adaptation policy instrument
Australia	Australia’s National Climate Resilience and Adaptation Strategy (2015) focuses on how the country is managing climate variability and change. It sets out a vision for a climate-resilient future and principles to guide adaptation practice. The strategy builds on the 2007 National Climate Change Adaptation Framework, which identified priorities for action, increasing knowledge and capacity, and reducing the vulnerability of eight priority sectors and regions. An updated strategy is to be released in the latter half of 2021.
Fiji*	Fiji launched its first National Adaptation Plan in December 2018, which serves to implement the adaptation component of the National Climate Change Policy (updated in 2018). The NAP includes 160 adaptation priorities across 10 system and sector components. It is preceded by a NAP framework (2017), which articulates the goals, mandate, approaches, and principles, as well as the formulation and coordination mechanisms for the Plan.



Country	Description of adaptation policy instrument
France	France's second Plan national d'adaptation au changement climatique ("National Climate Change Adaptation Plan") covers a period of five years (2018–2022) and further implements the country's 2006 National Adaptation Strategy. The Plan's 58 actions across six thematic areas build on the results of an evaluation from the country's first NAP (2011–2015) and were identified through a year-long consultative process involving 300 stakeholders from both within and outside of government. The stakeholder consultations were preceded by a presentation of scientific findings on climate change and its impacts relevant to the six thematic areas of the Plan.
Kiribati*	Kiribati's Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2019–2028 serves as the country's national adaptation plan. It prioritizes 104 climate adaptation and disaster risk reduction actions to support a more holistic and coordinated approach to climate risk management. It builds on lessons and assessments from the first version of the KJIP (2014–2023) by strengthening gender considerations and enhancing its alignment with more recently developed national policies, especially the Kiribati National Development Plan, the Kiribati 20-Year Vision, and the Climate Change Policy.
Germany	Germany's third Adaptation Action Plan (APA III), published in 2020, implements the country's adaptation framework, the 2008 Deutsche Anpassungsstrategie ("German Adaptation Strategy"). The country has implemented two Adaptation Action Plans (APA I and APA II), published in 2011 and 2015 respectively, and a progress report reviewed each APA to monitor and evaluate what was achieved, what was not, and what adjustments were needed in order to improve adaptation action.
Japan	Japan's 2015 National Plan for Adaptation to the Impacts of Climate Change articulates the country's vision and approach, and lists specific adaptation measures to be taken over ten years, both across government and within seven sectors. It is based on the country's 2013 Climate Change Impact Assessment, which assigned ratings of significance, urgency, and level of confidence to impacts across 56 sub-sectors. The Plan was strengthened by the 2018 Climate Change Adaptation Act, which commits the government to publishing impact assessments every five years, formulating and implementing NAPs, and tracking progress. The Plan also defines roles for different actors and levels of governance. A new impact assessment was released in 2020 and the NAP will be reviewed and revised accordingly in 2021.



Country	Description of adaptation policy instrument
<p>Netherlands (two policy instruments reviewed)</p>	<p>The Netherlands initiated its Deltaprogramma (Delta Programme) in 2008 to ensure flood protection and freshwater security in a changing climate. In 2012, the Programme was enshrined in the Dutch constitution with the passing of the <i>Delta Act</i>. Annual programs are presented to parliament. An average of EUR 1.3 billion per year in funding is committed between 2020 and 2034 through the Delta Fund established under the <i>Delta Act</i> (Government of the Netherlands, n.d.) Complementing the spatial adaptation actions of the Delta Programme, the Netherlands released its National Climate Adaptation Strategy (NAS) in 2016. It is focused on impacts in nine sectors and identifies six areas for government action. A 2017–2019 Implementation Program for the NAS was released in 2018 and a progress report for this period was published in February 2020.</p>
<p>New Zealand</p>	<p>The Climate Change Response (Zero Carbon) Amendment Act 2019 commits New Zealand to preparing a National Climate Change Risk Assessment (NCCRA) at least every six years and a NAP two years after each NCCRA, as well as monitoring and reporting on the NAP’s effectiveness two years thereafter. New Zealand’s first NCCRA was released in August 2020 and its first NAP is expected by August 2022. The Climate Change Commission established under the Act will lead future NCCRA processes and will monitor progress and report on the implementation of the NAP.</p>
<p>South Africa*</p>	<p>South Africa finalized its first National Climate Change Adaptation Strategy (NCCAS), which serves as its national adaptation plan, in August 2020. The NCCAS is organized around four strategic objectives and nine strategic interventions designed to achieve these objectives. The strategic interventions are broken down into actions, each of which has a lead agency, partners, time frame, and indicators associated with it. The NCCAS builds on the National Climate Change Response Policy (2011).</p>
<p>Switzerland</p>	<p>Switzerland’s second National Action Plan (2020–2025) continues to implement the country’s 2012 National Adaptation Strategy. Comprised of 75 measures at the federal level, 63 of which target sectors and 12 of which are cross-cutting, it assesses the progress of the first Action Plan and renews or continues many of its measures. The second Action Plan is based on a systematic assessment of risks and opportunities related to climate change, as well as climate and hydrological scenarios which were developed in 2018.</p>
<p>United Kingdom</p>	<p>The UK’s second National Adaptation Programme, or NAP2 (2018–2023), sets out over 150 policies and actions the government is or will be undertaking to address the six priority areas of climate change risk identified in the second Climate Change Risk Assessment (2017). NAP2 builds on the evaluation of the first Programme (2013–2018) and forms part of the obligatory five-year cycle of risk assessment and programming mandated by the 2008 Climate Change Act. The Programme is assessed every two years, with a progress report presented to Parliament.</p>

*IISD contributed to the development of the highlighted adaptation policies through the NAP Global Network, an initiative that advances adaptation planning and action in developing countries and for which IISD serves as the secretariat.



These selected policy instruments were reviewed against some of the aims for Canada’s NAS, such as institutional collaboration, identification of priorities, and measuring progress in adaptation. The following specific issues were highlighted in the review and are summarized in Table 2 below:

- **Legislation:** The existence of a climate act or law that obliges the national government to take action on adaptation (and if so, the year it was passed)
- **Policy:** The current policy instrument driving adaptation action at the national level
- **Year:** The year said policy instrument was published (in the table, the bolded year indicates the current version)
- **Institutional arrangements:** Policy instrument that defines the institutional arrangements for managing adaptation at the national level
- **Social inclusion:** The extent to which the policy instrument recognizes the differential vulnerabilities, needs, and capacities of various social groups and identifies strategies to address them, rated as follows:

0	No real mention of differential vulnerabilities or needs of social groups in relation to climate impacts and adaptation
1	Differential vulnerabilities acknowledged, including as a guiding principle
2	Some focused attention paid to social inclusion, usually in relation to specific climate risks or in specific sectors
3	Dedicated or consistent attention paid to social groups, including through targeted adaptation measures

- **Science-driven vs. science-informed approach:** The role and emphasis accorded to scientific assessments of vulnerability and risk in identifying adaptation solutions, and the use of detailed frameworks for prioritizing climate risks. Specifically:
 - **Science-driven (SD)** uses the latest climate and hydrological models, along with quantitative and qualitative assessments of vulnerability and risk, to strongly guide the identification of adaptation priorities. This approach often involves a clear methodological framework and a systematic process for prioritizing risks, as well as a strong reliance on scientists and other experts in making such determinations.
 - **Science-informed (SI)** draws from the latest or best available science, but also gives importance to insights and expertise—provided through consultation and engagement—from a wider range of stakeholders from across the national government and other jurisdictions, the private sector, and civil society. To identify adaptation priorities, the process draws more heavily on their knowledge of climate risks, current strategies for managing them, and accompanying needs and preferences. These processes may draw upon Indigenous knowledge.



- **Prioritization of climate risks:** The prioritization of the various climate risks identified in the adaptation policy instrument (e.g., by urgency, level of impact, confidence, and so forth)
- **Defined actions:** The identification of specific programs, projects, and other measures in the policy instrument (and estimated number of actions)
- **Adaptation targets:** The inclusion in the policy of adaptation targets that must be reached within a given timeframe
- **Indicators:** The inclusion of defined indicators for measuring progress in adaptation
- **Progress reporting:** Reference to progress reporting, including committing to or defining such process for progress reporting, or referring to how results from previous progress reports have informed the current policy



Table 2. Comparison of current adaptation policy instruments in 11 countries

	Legislation	Adaptation policy instrument	Year of publication	Institutional arrangements defined in...	Social inclusion	Science-informed vs science-driven	Risks prioritized	Defined actions	Targets	Indicators	Progress reporting
Australia		Strategy	2015		0	SI		0			
Fiji	Draft	Plan*	2018	Plan	2	SI		160			
France		Plan*	2011, 2017		1	SI		58			
Kiribati		Plan	2014, 2019	Plan	2	SI		104			
Germany		Plan*	2011, 2015, 2020	Strategy	2	SD		188			
Japan	2018	Plan	2015	Act	2	SD		323			Act
Netherlands		Strategy	2016		1	SI		~20			
	2011	Delta Programme	Updated annually	Act	0	SI					
New Zealand	2019	Risk assessment	2020	Act	3	SD		n/a	n/a		Act
South Africa	Draft	Plan	2020	Plan	2	SI		91			
Switzerland	2012	Plan*	2014, 2020	Act	0	SI		75			
UK	2008	Programme	2013, 2018	Act	0	SD		~150			Act

* Preceded by a national adaptation strategy or framework, which laid out in greater detail the vision, principles, approaches, objectives for adaptation action at the national level.

Update expected in 2021.

Indicators not defined in reviewed policy instrument but through a separate process or instrument.



3.2 Key Takeaways from the Review of Selected Adaptation Policy Instruments

The review found, unsurprisingly, that many countries have a tangled web of policy instruments for mobilizing adaptation action at the national level. Even in contexts where one instrument has emerged as the current basis for guiding government decisions, it builds on previous policies and iterations. Some high-level take-aways from the review of instruments include are as follows.

Adaptation legislation is on the rise: Half of the countries reviewed have legislative backing for adaptation action at the national level, whether through a stand-alone adaptation act or a broader climate change act; several countries are in advanced stages of drafting such legislation. Those countries that do have legislation use it as an opportunity to enshrine the institutional arrangements for adaptation and, in some cases, define its approach to progress reporting. However, legislation does not necessarily drive commitment to adaptation planning. For instance, Germany, which released its third adaptation plan in 2020, currently does not have any legislation focused on adaptation.

Adaptation planning is not only widely adopted but regularly updated: The policies in Table 2 were all produced in the last five to six years, reflecting the acceleration of adaptation planning globally. Almost half of the current policy instruments represent an update, with Germany ahead of its peers in launching a third adaptation plan in 2020. Those that were produced over five years ago (i.e., in 2015) are expected to be updated this year. Taken together, this is an encouraging trend. Adaptation policies that drive action are not treated as one-off efforts; they are regularly reviewed and revised, demonstrating an ongoing commitment to iteratively address climate change impacts.

Defining institutional arrangements is essential to adaptation action: Most countries have codified the responsibility for coordinating adaptation action at the national level, as well as the jurisdictional responsibilities and the overall adaptation process, in a national act or strategy. This points to the importance of clearly establishing roles and responsibilities to ensure coordinated action horizontally at the national level as well vertically with sub-national actors.

Social inclusion issues are recognized but not very prominent in most adaptation policies: Almost all policy instruments refer to social inclusion issues, including gender equality. However, with the exception of New Zealand, few emphasize them throughout policy, placing them at the heart of a country's adaptation efforts. Given the clear links between social inclusion and climate vulnerability (as discussed in section 5.5), this finding suggests that there is a need for greater leadership in this area.

Both science-driven and science-informed approaches are used to define adaptation priorities: While two thirds of the reviewed adaptation policies were more science-informed than science-driven, further research is needed to fully understand why different countries opted for different approaches. Those countries that have defined cycles of climate risk assessment, planning or programming, implementation, and review (e.g., Germany, Japan, and the UK) tend



to emphasize the scientific assessments and prioritization frameworks in their adaptation policies. While New Zealand’s policy instrument was an assessment (rather than an adaptation plan or strategy), it addresses Indigenous knowledge by adopting a well-being framework, which is more consistent with the Maori world view, and by having a dedicated chapter on Maori perspectives. South Africa mentions combining science and traditional knowledge as a guiding principle and mentions Indigenous knowledge in relation to some of its strategic activities. Kiribati mentions traditional knowledge throughout its KJIP in terms of context, adaptation priorities, results, actions, and performance indicators.

For countries that prioritize climate risks, it is usually in terms of magnitude, urgency or need to act: Over half of the countries reviewed use some framework and methodology for prioritizing climate impacts, risks or adaptation actions; these policies include a description of how the prioritization process was undertaken, such as the information gathered, steps followed, and criteria used. Prioritization is more common in those countries where an adaptation strategy or plan was informed by a dedicated or commissioned climate risk assessment (e.g., Japan, Switzerland, the UK). Climate risks are often ranked in terms of their (current and future) magnitude, urgency, or need to act. Japan assigned confidence levels to the identified risks.

Most policies move beyond high-level categories of adaptation action to include defined measures: The number of adaptation measures contained in policies (usually in plans or programs) ranges from 50 to 323. Countries with only a NAS did not provide defined planned actions (e.g., Australia) or identified a smaller number of less-defined actions to be undertaken (e.g., Netherlands).

The use of adaptation targets is an emerging practice: The countries reviewed do not include many targets in their national adaptation policy instruments; a few appear in sections defining sectoral actions where targets were drawn from a related policy. For example, the UK’s 25-Year Environment Plan includes some goals (which could be translated into targets), while the Netherlands’ Delta Programme, which is foundational and adjacent to the country’s adaptation strategy and program, contains adaptation-relevant targets. More recently, there has been an increased use of targets in the adaptation components of nationally determined contributions (NDCs). Some examples pulled from this review include:

- **UK:** The goal from the 25-Year Environment Plan (2018) included in NAP2: “Create or restore, by 2042, 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits.”
- **Netherlands:** Under the Delta Decision on Flood Risk Management in the Delta Programme, “every resident of the Netherlands living behind a primary dyke or dam will have a minimum protection level of 10⁻⁵ (probability of fatality due to flooding not exceeding 1:100,000 per annum)” (Government of the Netherlands, 2021, p. 33). Targets like these are anchored in policy or law.



- **Fiji:** In Target 12 of its [enhanced NDC](#), the government commits that it will “establish 30% of our Exclusive Economic Zones (EEZ) as Marine Protected Areas and work towards 100% management of our EEZ by 2030 through the implementation of the National Ocean Policy” (p. 5).

More use of adaptation indicators, albeit largely process-based: Several of the adaptation policy instruments reviewed define indicators for measuring progress and results. Those that do this tend to emphasize process-based indicators (e.g., number of local governments that have formulated local adaptation plans) rather than outcome-based indicators. Several countries—such as Fiji, France, and the UK—are addressing the issue of adaptation indicators through a separate exercise that feeds into the adaptation policy. For example, Fiji has developed a M&E framework to accompany its NAP and France is currently undertaking a consultative process to develop a set of adaptation indicators.

Progress reporting is central to most adaptation policies: While the mandates came from different places—some come from legislation, others from policies—most countries have articulated a clear process and timeframe for progress reporting (e.g., every year, every two years), and have named the bodies responsible for overseeing its execution. Those countries that are on to their second national adaptation plans—such as France, Germany, Kiribati, Switzerland, and the UK—point to how the findings of progress reports or other assessments informed their current plans, thereby underscoring the iterative nature of adaptation decision-making.

Some national policies look beyond own borders in defining risks and adaptation actions: It is worth noting that some of the reviewed policies describe their role in supporting adaptation action within their region (e.g., Australia in the Pacific region) or in their overseas territories (France and Netherlands). Some policies also consider how climate impacts abroad will affect the country in areas such as trade, food security, migration, national security, financial services, and development cooperation (Netherlands, Switzerland, and the UK).



4.0 Foundations for Canada's National Adaptation Strategy

Canada's first-ever NAS should build on its current policy, institutional, and knowledge foundations. The status of these is briefly examined in this section.

4.1 Policy Context

The existing policies guiding federal adaptation planning and action are the Federal Adaptation Policy Framework established in 2011,¹ the Pan-Canadian Framework on Clean Growth and Climate Change agreed to in 2016, and the recently released *A Healthy Environment and a Healthy Economy* plan. These are complemented by Canada's National Disaster Mitigation Strategy released in 2008 and its 2017 Emergency Management Framework and 2018 Emergency Management Strategy for Canada.

The [Federal Adaptation Policy Framework](#) provides broad guidance on the Government of Canada's medium-term adaptation efforts. It establishes a vision for a climate-resilient Canada where “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” (Government of Canada, 2011, p. 3). The policy also lays out a set of objectives, and defines the federal government's role in adaptation as being to:

- Generate and share the knowledge needed for evidence-based decision-making.
- Facilitate collaboration between different stakeholders and help build the capacity of other governments, the private sector, and civil society to adapt.
- Mainstream adaptation into federal policy and planning.

The policy provides criteria to guide federal departments and agencies as they determine their role and priorities in advancing climate change adaptation. While calling for climate change impacts to be considered in decision-making, it does not prescribe how or by when adaptation action will be undertaken (Government of Canada, 2011). As noted by the Commissioner for Environment and Climate Change in its [2017 review of federal progress on climate change adaptation](#), the policy also “does not set priorities or identify concrete actions with targets, timelines, and accountabilities” (Office of the Auditor General of Canada, 2017, p. 8). The Commissioner also found that limited progress had been made on the implementation of the Federal Adaptation Policy Framework by the time of its review, as only five of the 19 departments examined had assessed the climate risks relevant to their areas of responsibility, mainstreamed

¹ The Federal Adaptation Policy Framework was republished and made publicly available in 2016 (Office of the Auditor General, 2017).



these considerations into their corporate risk management activities, and taken adaptation measures (Office of the Auditor General of Canada, 2017).²

The [Pan-Canadian Framework on Clean Growth and Climate Change](#) (PCF) was released in December 2016. Its content was developed through working groups involving the federal, provincial, and territorial (FPT) governments and engagement with Indigenous groups. Input from businesses, non-governmental organizations, and the public was provided through website submissions, town halls, and in-person sessions (Government of Canada, 2016a). One of the PCF's four pillars for climate change policy and action is adaptation and climate resilience. Actions under this pillar focus on “translating scientific information and Traditional Knowledge into action, building climate resilience through infrastructure, protecting and improving human health and well-being, supporting particularly vulnerable regions” (namely northern and coastal locations), and “reducing climate-related hazards and disaster risks” (Government of Canada, 2016a, p. 28). Across the pillar, particular emphasis is given to increasing the resilience of Indigenous communities. The PCF marked “the first time that federal, provincial and territorial governments identified priority areas for collaboration to build resilience to a changing climate across the country” (Government of Canada, 2017, p. 192). Several programs have been initiated across a range of federal departments to support the implementation of the adaptation and climate resilience pillar of the PCF (see Annex 1).

The recently released *A Healthy Environment and a Healthy Economy* plan builds on the PCF. Although primarily focused on how Canada will achieve its announced goal of net-zero emissions by 2050, the plan also calls for a more “ambitious, strategic and collaborative approach to adaptation” (Government of Canada, 2020a, p. 66). This objective is to be achieved in part by development of the NAS in collaboration with the provinces, the territories, municipalities, Indigenous groups, and other key partners.

Canada's response to the impacts of climate change is also shaped by its disaster and emergency management frameworks and strategies implemented under the *Emergency Management Act* (2007). The Act sets out federal responsibilities with respect to the “prevention and mitigation of, preparedness for, response to and recovery from emergencies” (Government of Canada, 2007). To support the implementation of the Act, [Canada's National Disaster Management Strategy](#) was introduced in the following year. It establishes a joint vision and principles for disaster mitigation and marks a shift towards a greater focus on reducing or preventing disasters given their rising costs and the positive return on investment of mitigation actions. The Strategy also proposes a governance model “that addresses the current piecemeal approach to mitigation by concentrating informed decision-making into an effective framework” that “engages and enhances local-level responsibility” and enables broad stakeholder engagement (Government of Canada, 2008, p. 4).

Emergency management in Canada is presently guided by its third Emergency Management Framework (2017) and Emergency Management Strategy (2018). Both are aligned with the

² These five departments were Fisheries and Oceans Canada, Health Canada, Indigenous and Northern Affairs Canada, NRCan, and Transport Canada (Office of the Auditor General of Canada, 2017).



Sendai Framework for Disaster Risk Reduction 2015–2030, which sets out global targets and priorities for achieving an overarching goal of preventing new and reducing existing disaster risk (United Nations, 2015). As such, [An Emergency Management Framework for Canada](#) places greater focus on disaster prevention and mitigation, as well as building back better following an emergency. The Framework lays out principles to guide FPT emergency management plans and actions, and a governance structure to facilitate coordination and collaboration between jurisdictions (Ministers Responsible for Emergency Management, 2017).

The [Emergency Management Strategy for Canada](#) builds on the Framework and identifies five priority areas of activity³ “to strengthen the resilience of Canadian society by 2030” through a whole-of-society approach to emergency management (FPT Emergency Management Partners, 2018, p. 5). Among its priorities, the Framework calls for climate change adaptation to be considered when updating or creating emergency management initiatives and when educating partners on the links between disaster risk reduction (DRR) and other factors (FPT Emergency Management Partners, 2018).

4.2 Institutional Structure

As the federal government’s lead on climate change, Environment and Climate Change Canada (ECCC) is responsible for the development of the NAS. Since a permanent standing body responsible for coordinating and advising on climate adaptation efforts across the federal government does not exist, a new joint committee has been established to develop the NAS. Consistent with mandate letters from the Office of the Prime Minister, this joint committee involves Infrastructure Canada, Natural Resources Canada (NRCan), and Public Safety Canada, with the support of the Special Representative for the Prairies (Office of the Prime Minister, 2021). Tasking of these four departments with collaborating on the development of the NAS reflects their prominent roles in federal climate adaptation efforts. However, these efforts are often undertaken in parallel with one another, with limited cross-departmental collaboration.

In crafting a strategy for Canada’s future adaptation efforts, the federal government may build on existing institutions supporting interjurisdictional coordination of climate adaptation assessment, planning, implementation, monitoring and evaluation, and knowledge-sharing. This includes the Canadian Council of Ministers of the Environment (CCME), the main intergovernmental forum addressing environmental issues of national concern. The CCME established a Climate Change Committee in June 2015 that is responsible for reporting on and supporting progress of the adaptation and climate resilience pillar of the PCF (CCME, n.d.; Government of Canada, 2017).

³ These five priority areas of activity are “(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” (FPT Emergency Management Partners, 2018, p. 9).



Canada's Climate Change Adaptation Platform provides an additional structure that brings together different levels of government as well as industry, Indigenous organizations, professional organizations, non-governmental organizations, and academia. Established in 2012, the Adaptation Platform includes a governance body (the plenary) chaired by NRCan and working groups focused on specific sectors or issues (e.g., forestry, mining, monitoring and evaluation). Through knowledge-sharing and collaboration, it aims to “create an enabling environment for adaptation” by providing decision-makers with the tools and information they require to adapt to climate change (Government of Canada, n.d.a).

DRR governance in Canada occurs through a jointly established structure that includes three governing tiers—FPT Ministers, FPT Deputy Ministers, and senior officials responsible for emergency management—and a number of FPT co-chaired working groups. The structure “facilitates coordination and collaboration in full respect of each government’s legislated jurisdiction” (Government of Canada, 2017, p. 14). Canada’s Platform for Disaster Risk Reduction, established in 2009 and led by Public Safety Canada, plays a similar role to the Climate Change Adaptation Platform. Managed by an advisory committee, it brings together more than 700 stakeholders from local to national-level organizations engaged in risk reduction efforts (Government of Canada, n.d.b). Looking specifically at flood risk, at a national roundtable on flood risk held in 2017, participants established the multi-stakeholder Advisory Council on Flooding. It worked to increase resilience to flooding through data and mapping of flood risk, strengthening communications, and reducing financial risks, within a whole-of-society approach (Public Safety Canada, n.d.).

While the CCME and Adaptation Platform have contributed to advancing adaptation action in Canada, neither provides a suitable foundation for the ongoing intergovernmental coordination of adaptation. As the CCME only brings together ministers of the environment, it is not well suited to enabling collaboration across sectors. While the Adaptation Platform brings together different governments and invited sector representatives, it is not intended to develop or implement policy decisions. Thus, Canada current lacks a permanent body similar to those established in some other jurisdictions that is mandated to coordinate climate change adaptation action across the federal government and between different ministries within the FPT governments. This may be contrasted with the jointly established FPT emergency management structure, which supports implementation of Canada’s Emergency Management framework (Government of Canada, 2017).

4.3 Knowledge Base

Canada’s first NAS will need to be grounded in the best available information about current and projected climate risks and effective adaptation actions. In this regard, Canada is well supported by strong climate science and modeling capacities. Scientific understanding of Canada’s historic and projected climate was recently synthesized in *Canada’s Change Climate Report* (Bush & Lemmen, 2019). This report is part of the current national adaptation assessment process,



Canada in a Changing Climate: Advancing our Knowledge for Action.⁴ Led by NRCan, the national assessment process began in 2016 and is expected to be completed in 2022 (Warren, 2020). Future reports will focus on climate impacts and adaptation progress in different regions, the health sector, and across different issues (NRCan, n.d.). For the first time, the assessment will also include a chapter focused on understanding the climate resilience of Canada's Indigenous Peoples (Warren, 2020).

The overall picture of the climate risks facing Canada also is supported by the 2019 findings of the [Expert Panel on Climate Change Risks and Adaptation Potential](#). At the request of the Treasury Board Secretariat, the Panel identified 12 major areas of climate change risk for the period of 2020 to 2040, based on input from a two-day expert workshop, expert judgement, and previous scientific reviews and syntheses.⁵ Consistent with the Federal Adaptation Policy Framework, the Expert Panel also identified three broad areas for federal efforts to address climate change risks: coordination and collaboration across the federal government, domestically and internationally; capacity-building through the provision of data, information, tools, and financial support; and the safeguarding of federal assets and operations (Council of Canadian Academies [CCA], 2019). The Expert Panel concluded that the “federal government could benefit from a framework that supports departmental decision-making while also coordinates horizontal prioritization and collaboration across departments and agencies” (CCA, 2019, p. 45). It also noted that it had a limited ability to bring Indigenous knowledge into its analysis and called for future assessments to “include emerging knowledge of impacts and adaptation from both science and Indigenous knowledge traditions” (CCA, 2019, p. 47).

Additionally, ongoing initiatives within Canada's DRR community are expected to generate insights that should inform the development of the NAS. In particular, Public Safety Canada is currently leading the development of a national risk profile to support the operationalization of Canada's Emergency Management Strategy to 2030. This strategic-level assessment will create a picture of risks and capabilities based on scientific evidence, Indigenous and local knowledge, and stakeholder input. In its first stage, the assessment will focus on floods, wildfires, and earthquakes (Government of Canada, n.d.c). A capability-based planning approach is being used to create the national risk profile. When completed, the profile will provide a common framework for “measuring, coordinating, and mobilizing resources” across agencies and governments (Government of Canada, 2021a; Public Safety Canada, n.d.). As well, recommendations from the Task Force on Flood Insurance and Relocation launched in November 2020 may inform future flood risk management strategies. The Task Force's findings will inform the creation of

⁴ The previous national assessment of climate adaptation risks and opportunities was completed in 2008 (Lemmen, Warren, Lacroix, & Bush (2008), with an update to it released in 2014 (Warren & Lemmen, 2014). Special assessments for the transportation sector and for Canada's marine coasts were released in 2016.

⁵ These areas of risk are: agriculture and food, coastal communities, ecosystems, fisheries, forestry, geopolitical dynamics, governance and capacity, human health and wellness, Indigenous ways of life, northern communities, physical infrastructure, and water (Council of Canadian Academies, 2019).



a national high-risk residential flood insurance program (Government of Canada, 2020b).⁶ Similarly, a parallel Steering Committee on First Nation Home Flood Insurance Needs launched in May 2021 by Indigenous Services Canada and the Assembly of First Nations will provide recommendations for potential flood insurance options to be co-developed with First Nations (Government of Canada, 2021c).

At the sub-national level, a wide range of climate risk and vulnerability assessments have been completed by provincial and territorial governments, Indigenous communities, urban and rural municipalities, sectors, and businesses. Collectively these assessments provide sufficient information to inform adaptation planning at different levels. However, they create a patchwork of available information generated using different methodologies (Government of Canada, 2017). Additionally, at present there is no formal linkage between the release of the scientific assessments, such as *Canada's Change Climate Report*, and federal adaptation planning and action, nor are there formal linkages to outcomes from DRR assessments. As observed by the Expert Panel on Climate Change Risks and Adaptation Potential in its final reflections, “structured, well-resourced, inclusive, and regularly repeated national (and regional) climate change risk assessments could enhance [the] transparency, legitimacy, and authority” of these assessment in the future (CCA, 2019, p. 47).

4.4 Monitoring Progress and Impact

As previously noted, the NAS will include “a framework for measuring progress at the national level” (Government of Canada, 2020a, p. 66). Canada took a significant step toward establishing a national monitoring, evaluation, and learning (MEL) framework for adaptation in August 2017 by establishing an [Expert Panel on Climate Change and Adaptation Resilience Results](#). The Expert Panel was tasked with recommending a suite of indicators to measure progress under the adaptation and climate resilience pillar of the PCF. In its 2018 report, the Expert Panel put forward 54 indicators to support identified objectives for each of the five key areas of action of the adaptation and climate resilience pillar (Government of Canada, 2018a). Of these indicators, 19 were suggested as being the basis for further discussion (Government of Canada, 2018a).

The Expert Panel also provided recommendations for “a sustainable, robust, broadly applicable monitoring and evaluation framework” (Government of Canada, 2018a, p. 7). Elements essential to the creation of this system were identified as including the following (Government of Canada, 2018a):

- Leadership by a national entity responsible for coordinating a system for collecting finer resolution data, analysis and reporting.

⁶ Initiated by the Minister of Public Safety and Emergency Preparedness and the Minister of Families, Children and Social Development, the Task Force has been asked to “look at options to protect homeowners who are at high risk of flooding and don’t have adequate insurance protection, and examine the viability of a low-cost national flood insurance program,” as well as “consider options for potential relocation for residents of areas at the highest risk of recurrent flooding” (Government of Canada, 2020b).



- Flexibility to enable continuous learning in a timely manner, reflecting the tenets of adaptive management.
- Building on established data collection systems, programs, and indicators.
- Working with Indigenous groups and facilitating sharing and learning from Indigenous knowledge systems.
- Communicating results in different formats tailored to the needs of external audiences.

While the Expert Panel provided guidance on the development of a system for monitoring Canada's adaptation progress, the formal system and its indicators remain in development. As such, a public priority of the CCME is the establishment of common metrics for use by the federal, provincial, and territorial governments to track progress on adaptation efforts (CCME, n.d.).

4.4 Bridging the Climate Adaptation and Disaster Risk Reduction Silos

An evergreen issue, internationally and in Canada, is the persistence of weak policy, institutional, and operational links between the climate adaptation and DRR communities—despite their shared focus on the growing risks of weather-related extreme events and their mutual desire to mainstream mitigation measures across sectors (OECD, 2020). These silos lead to gaps and redundancies in planning and implementation, which limit adaptation progress (OECD, 2020). Increased coherence between the two communities can be achieved, however, through the alignment of their strategies, operations, and technical capacities (OECD, 2020).

Internationally, substantial progress has been made toward the integration of climate change adaptation and DRR since 2015, when the Paris Agreement, the Sendai Framework, and the Sustainable Development Goals were adopted. Within Canada, this progress (albeit modest) is reflected in a joint meeting of the Climate Change Adaptation Platform and the Platform for Disaster Risk Reduction in 2017, the Emergency Management Strategy's attention to building whole-of-society climate resilience, and the establishment in 2018 of the multi-billion-dollar Disaster Mitigation and Adaptation Fund to increase the climate resilience of public infrastructure. More recently, Public Safety Canada tasked the Expert Panel on Natural Disaster Resilience with identifying key opportunities to improve disaster resilience through better integration of research and practice related to climate change adaptation and DRR (CCA, 2020). The Expert Panel's report is expected to be delivered in late 2021.

The NAS provides an opportunity to build on these efforts and establish a stronger bridge between these established silos to enhance adaptation action in Canada. Considerable experience resides within the DRR community that could amplify existing adaptation efforts while also filling critical knowledge and capacity gaps. This includes, for instance, the DRR community's experience with relocating communities due to riverine flooding—both managing short-term logistical needs and engaging in longer-term efforts to handle the psycho-social effects—which could be applied to approaches for managing coastal retreat due to sea level rise. The clear institutional structure articulated in the Emergency Management Strategy, enabling collaboration



across and between different levels of government while also engaging a multitude of stakeholders to address a common challenge, may also provide inspiration as the NAS is developed and implemented.

Insights into how to bridge the divide between the adaptation and DRR communities could be gained from examining the experiences of other countries. While this divide persists in many countries and responses to address it are often ad hoc, some countries have introduced committee structures and joint policies to bring together the two communities. Examples include:

- **Australia:** The federal government has established an Australian Government Disaster and Climate Resilience Reference Group “responsible for driving a whole-of-government approach to disaster and climate resilience, risk reduction and adaptation,” including the integration of climate change and disaster considerations into “planning, policies, programs, asset management and risk management frameworks” (Government of Australia, 2020).
- **Japan:** Joint messaging from the Minister of Environment and the Minister of State for Disaster Management around the need for adaptive recovery is expected to lead to more coordinated measures.⁷
- **Kiribati:** The country’s NAP, the KJIP, is a joint DRR and adaptation strategy. These linkages were enabled in part because DRR and climate change are both coordinated out of the office of the President.

As the federal government plans for and prepares its NAS, it should look for opportunities to achieve greater integration of its DRR and adaptation efforts in the areas of policy and governance, the provision of climate services, the implementation of risk reduction measures, financing, and MEL (OECD, 2020). International experience shows that achieving greater coherence requires high-level political support and strong leadership, as well as awareness-raising and capacity-building (OECD, 2020). Progress may be achieved by bringing the communities together around a defined task, such as devising targets, establishing a common MEL framework, or developing the national risk profile and its associated capabilities assessment framework. Efforts to bridge the DRR and adaptation silos should also engage the insurance industry, given their critical role as knowledge brokers within both communities.

⁷ Personal communication, representative of the Government of Japan, April 6, 2021.



5.0 Key Considerations for Developing Canada's NAS

In order to keep pace with the scale and severity of climate impacts, the National Adaptation Strategy will need to respond to the urgency of the challenge but also provide a basis for continued, iterative adaptation action for years to come. The good news is that there is a solid foundation of domestic capacities and international practice upon which to build. The challenge will be to focus the Strategy on what the country needs most from the federal government to meet diverse and evolving needs.

This section presents some key issues for the federal government to consider both in the process of developing Canada's NAS and within the topics it might cover. It is divided into the four main aspects of preparing for a successful NAS development process, including key elements for mobilizing federal action on adaptation, facilitating early and sustained action, and positioning Canada as a leader on adaptation.

5.1 Set the Stage for a Successful NAS Development Process

Before jumping into an information-gathering and consultation process for developing Canada's first-ever NAS, a few essentials should be clarified in order to get the most out of the process. Time and time again, experience has shown that upfront investments in defining the purpose of a NAS, as well as establishing a strong institutional structure and engagement process, can mean the difference between a strategy that simply gets published and one that also drives action.

5.1.1 Define the Exact Role and Purpose of the National Adaptation Strategy

Each of the policy instruments reviewed aim to respond to a specific need for mobilizing adaptation action at the national level. Whether they are national risk assessments, adaptation strategies, plans, or programs, each one serves a different purpose. They can, for example, make a strong case for adaptation action; clarify institutional roles and responsibilities; define a coordinated process for regularly identifying, implementing, reviewing, and updating adaptation priorities; or articulate adaptation priorities and provide a detailed plan for addressing them in a given timeframe.

Canada's NAS will be the first opportunity for the government to develop a dedicated national policy instrument on adaptation since the 2011 Federal Adaptation Policy Framework. In order to move quickly and efficiently, the federal government must be clear on the role and purpose of the NAS in mobilizing adaptation action.



Looking at some of the outstanding needs around adaptation at the national level, the NAS would be a good opportunity to define:

- **Core principles** to guide Canada’s approach to adaptation, serving as a “north star” in the design and implementation of adaptation efforts across the country.
- **Risk scenarios and timeframes** that shape adaptation priorities and actions, including the different temperature scenarios that must be taken into consideration.
- **Institutional structures** for adaptation at the national level, including the departments responsible for driving and overseeing the process and the mechanisms for coordinating with other parts and levels of government (see the following sections).
- **A national adaptation planning process** for regularly identifying, implementing, reviewing, and updating adaptation priorities.
- **Follow-up actions and commitments**, in terms of programming investments, policy measures (e.g., action plan), and legislation (akin to the 2020 Net Zero Emissions Accountability Act).
- **Accountability mechanisms** for ensuring the NAS is implemented efficiently and effectively, reporting progress across government and to different stakeholder groups.
- **Alignment** with key national policies, such as COVID-19 recovery strategies and the National Housing Strategy.

If the NAS can address some or all the above, it will not only be a more useful policy instrument, but it will surely accelerate adaptation action in Canada.

5.1.2 Specify Clear Institutional Arrangements for the NAS

As noted in the commitment, the process of developing Canada’s NAS will involve working across governments and jurisdictions, engaging with a range of stakeholders outside of government, and pulling together different types of knowledge to produce a shared vision and coherent framework for action. This will require dedicated resources, planning, and reporting structures.

There are several institutional challenges related to adaptation that will need to be addressed in developing the NAS. First, adaptation is still a relatively poorly understood concept, let alone policy challenge; it does not have the same visibility or profile as mitigation. Second, because climate impacts are pervasive, addressing them calls for extensive cross-sectoral and cross-jurisdictional cooperation. Yet climate action has been most actively pursued by a small subset of ministries at the national level, and along parallel tracks at different scales of governance, with limited opportunities to connect. The landscape of adaptation policy efforts is therefore very diverse and highly fragmented. Third, because of this complexity and the greater attention paid to climate mitigation, adaptation is often allocated limited resourcing in terms of both financing and personnel. Effective adaptation policymaking requires dedicated investments, especially in soft skills such as facilitation, knowledge translation, and brokering.



With these institutional challenges in mind, the following should be considered in developing the NAS:

- **Establishing a clear institutional structure for the NAS formulation process:**
The process for developing the NAS must have a recognized entity that acts as a driver, convenor, and communicator and that is held to account. This will presumably be the joint committee described in section 4.2. The mandate and responsibilities for this body should be captured in clear terms of reference (TORs) and communicated broadly. Specific mechanisms for collaboration—such as a core steering group, sub-committees, or other working groups—should also be clarified with TORs and lines of communication. Defining this early is important for creating a manageable and effective process.
- **Creating an advisory and accountability mechanism:** The institutional structure for developing the NAS should also include a body to which the NAS managers must regularly report and from which they receive advice or feedback. This body can sit within government or outside, but its role would be to monitor and assess progress. Such a body could continue with its oversight role after the NAS is completed in order to track progress in its implementation (see section 5.2.4). Examples from other countries include:
 - France’s Special Committee of the National Council for Ecological Transition, a multi-stakeholder body that receives annual reports on the implementation of adaptation.
 - Japan’s Climate Change Adaptation Promotion Council, a government coordinating body chaired by the Ministry of Environment with officials from 13 other ministries and agencies. Established under the *Climate Change Adaptation Act*.
 - The UK’s Adaptation Sub-Committee, an independent statutory body that advises the UK and devolved governments and reports to Parliament on progress. Established under the *Climate Change Act*.
- **Developing an internal government communications and engagement strategy:**
A tailored communications strategy can reinforce the institutional arrangements for adaptation. It can help raise awareness about adaptation and the NAS across government, building the political support and engagement needed for a successful process. Fiji developed a dedicated communications strategy for its NAP to raise awareness within government about its role in advancing the country’s development objectives and the role different ministries can play in implementing its actions. Indeed, an effective internal communications strategy can result in having NAS ambassadors situated in strategic parts of government.
- **Allocating sufficient human resources:** Developing and implementing the NAS will involve tasks that cannot simply be added on to existing (and likely already overloaded) job descriptions. The government will need multiple, dedicated (at least half-time) positions working on this effort in multiple places across government. This is why it will be important to define the institutional structure and process early on, so that it can be



appropriately staffed. Recognizing that adaptation processes are as relational as they are technical, having effective brokers in place across government who can translate complex ideas into policy tasks and facilitate cross-departmental conversations will make a big difference to both the process and result.

5.1.3 Build an Inclusive and Progressive Engagement Process

Canada’s NAS must reflect the priorities and needs of Canadians in all their diversity, ensuring buy-in for its implementation. In practice, the engagement process will need to meet the needs of four groups:

- Provincial, territorial, and municipal governments
- Indigenous organizations and communities
- Key stakeholder groups and implementation partners, such as private-sector associations, research organizations, and knowledge brokers
- All other Canadians (i.e., the general public)

In designing a process that engages these different groups in clear and purposeful ways, separately or together, the federal government will draw upon its experience—positive and negative—in preparing the PCF. The process involved working groups that brought together FPT representatives; separate engagements with the Assembly of First Nations (AFN), Inuit Tapiriit Kanatami (ITK), and Métis National Council (MNC); in-person engagement sessions and independent town halls; and an interactive website (“Let’s Talk Climate Action”) that received 13,000 ideas and comments (Government of Canada, 2016a; Indigenous Climate Action [ICA], 2021).

While the PCF consultation process involved a variety of engagement mechanisms, a clear weakness was the mechanisms used for engaging with Indigenous groups (as discussed in section 5.7). The federal government has since established principles for nation-to-nation, government-to-government, and Inuit-Crown relationships (Government of Canada, 2018b). These principles should “guide future engagement and cooperation with Indigenous Peoples on climate change adaptation” (CCA, 2019, p. 42). At the same time, particular attention will need to be given to how individuals and communities will be directly and meaningfully engaged in the process, recognizing that input received through the formal bodies of the AFN, ITK, and MNC may not fully reflect the breadth of local perspectives (ICA, 2021).

Direct consultation with non-government stakeholders during the PCF process was limited to a single engagement session held over two days in Toronto (Government of Canada, 2016b). A greater number of (in-person) consultations, held across the country, will be needed to ensure that the NAS reflects diverse local climate impacts and adaptation needs. There are many international examples of good practices from which Canada can draw inspiration. For example, Peru held a wide-ranging, multi-year stakeholder engagement process called *Dialoguemos sobre Cambio Climático* (“let’s talk about climate change”), engaging government, civil society,



and Indigenous stakeholders to inform the content of its Framework Law on Climate Change and climate change planning. The European Commission held an online public consultation from May to August 2020 during the COVID-19 pandemic to give stakeholders and citizens an opportunity to influence the design of the EU Adaptation Strategy. For transparency, the Commission published the public contributions and the documents that were submitted with them (European Commission, 2020).

Moreover, these consultations will need to involve more than the “usual suspects” from organizations already involved in the Adaptation Platform or the climate policy community. Efforts will be needed to reach out to specific groups that currently might not see the link between their interests and climate change adaptation. This may include working with, for example, organizations focused on racial justice, LGBTQ2 issues, and gender equality. There is some experience with this internationally, for example in Kiribati, where women’s groups were engaged in the process of updating its KJIP.

Similarly, enabling effective consultations with the general public will require more than the establishment of websites and holding (virtual or in-person) town hall events. These will need to be buttressed by investments in awareness-raising around climate change adaptation, its importance to the future of Canada, and the policy choices that need to be made. A communications campaign in the months before the public is asked for formal inputs on the NAS would help ensure a richer engagement process. Such an approach is planned as part of New Zealand’s ongoing efforts to develop its NAP.⁸ Further, the design of this communications campaign, and subsequent consultations, must involve measures to ensure they are accessible to a diversity of Canadians, including language, communication channels (considering, for example, barriers to internet access), the creation of safe spaces for dialogue, and tailored messaging for specific groups.

Reflecting these issues, the federal government should consider:

- **Promoting engagement through institutional structures:** The government may consider establishing formal roles for civil society representatives in the federal decision-making mechanisms on adaptation, not just in the process of formulating the NAS but also in its implementation. For instance, Jamaica’s Climate Change Division has established a Climate Change Advisory Board consisting of representatives from academia, the private sector, government agencies, and civil society. Similarly, Saint Lucia and Belize have established National Climate Change Committees that meet quarterly and include seats for civil society representatives (Caribbean Natural Resources Institute, 2021).
- **Developing an external stakeholder communications strategy:** A NAS-specific communications strategy should be developed for stakeholder audiences to raise awareness about adaptation and the NAS process itself, laying the groundwork for

⁸ Personal communication, representatives of the Government of New Zealand, March 18, 2021.



active participation, and to share information throughout the NAS process, ensuring regular and active engagement as the strategy is formulated. Strategies for reaching specific audiences may be required, particularly for reaching Canada's diverse Indigenous communities (as further discussed in section 5.2.3). The launch of the NAS process should be communicated to the public to signal commitment, ambition, and opportunity around adaptation.

- **Investing in outreach and capacity-building strategy with targeted groups:** Many groups that historically have not been actively engaged in climate adaptation discussions—such as youth, new arrivals, racialized Canadians, people with disabilities, economically disadvantaged people, and LGBTQ2 communities—are among the most vulnerable to climate change. Their voices are needed within the process to better understand and tackle the drivers—not just the symptoms—of vulnerability. Targeted outreach to these communities may be needed to clarify the relevance of the NAS consultation process to them. Tailored knowledge products may be developed to ensure they have the knowledge to effectively engage in the process. BC's experience with public engagement in its adaptation strategy can provide some inspiration here (Prairies Regional Adaptation Collaborative, 2021).

5.2 Include Core Elements for Mobilizing Federal Action on Adaptation

Recognizing the government's commitment to developing a NAS that identifies priorities for collaborative adaptation action and establishes a framework for measuring progress, the Strategy should contain a set of core elements for achieving these objectives in an efficient and transparent manner. These elements are: a unified approach to climate risk assessment, a framework for policy alignment, a strategy for advancing reconciliation through adaptation action, and a system for tracking progress.

5.2.1 Develop a Unified Approach to Climate Risk Assessment at the National Level

The federal government has invested a significant amount of resourcing to understand weather and climate risks in Canada, including how they are evolving with climate change. While climate data and projections are becoming increasingly accessible through the single window of the Canadian Centre for Climate Services, data gaps persist, and a strategy is needed to identify and address them on an ongoing basis. Meanwhile, risk assessment findings are scattered across government departments, universities, and jurisdictions, and use different methodologies and data sources. These findings must be brought together in a more coordinated manner to provide a robust basis for identifying, prioritizing, and addressing climate change risks in Canada.

Pursuing this opportunity will require some thinking around what general approach to risk framing and identification the government would like to take. The review of national adaptation



policy instruments revealed a range of approaches, which were roughly categorized as being either science-driven or science-informed (see section 3.1). Some may refer to a science-driven approach as top-down and a science-informed approach as more bottom-up, but in practice most governments end up somewhere in the middle when crafting their adaptation policies.

Institutional contexts, preferences, and available resources will tip a government's approach in one direction or another, and there can be important trade-offs to consider between the two approaches. A science-driven approach may be deemed more rigorous and lend itself to some quantitative forms of measuring progress, for example. But an adaptation policy that relies heavily on consultation and stakeholder inputs, such as in the case of France, may have the advantage of being more comprehensive, better socialized, and more actionable among many stakeholder groups. By shaping and seeing themselves in an adaptation policy, these groups might feel a stronger sense of ownership over its implementation and results.

No matter the emphasis, the federal government should consider the following:

- **Developing a shared framework for systematically assessing climate risks and identifying adaptation priorities:** The NAS can be an opportunity to mandate the development of a climate risk assessment framework that allows the federal government to understand current and future climate-related risks, opportunities, vulnerabilities, and adaptation on an ongoing basis. Bringing together the NRCan-led national adaptation assessment and the Expert Panel's assessment of climate risk with PSC's National Risk Profile would be a logical point of departure. Mapping PSC's Canadian Core Capabilities List against adaptive capacity indicators that have been developed for different jurisdictions across Canada (and beyond) would also provide a basis for identifying priority adaptation actions.
- **Defining a national process for climate risk assessment and adaptation planning:** In addition to the framework, the NAS may be an opportunity to also mandate a regular, more streamlined process for assessing and addressing climate risks, similar to what Japan and the UK are obliged to do every five years. A clear timeframe and accompanying institutional structure to manage the process would also need to be defined. Such an established and reliable process will help increase the likelihood of linking assessment to decision-making—an identified gap in Canada's adaptation efforts.
- **Preparing for higher levels of warming:** Recent analyses show that even the most optimistic mitigation actions are likely to exceed the Paris Agreement temperature goal of “well below 2°C” (Climate Action Tracker, 2020). Higher global temperature increases must therefore be factored into Canada's understanding of climate risk. This was one of the findings from the [UK's 2019 Progress Report of its National Adaptation Programme](#), which states that, “England is not prepared for even a 2°C rise in global temperature, let alone more extreme levels of warming” (Committee on Climate Change, 2019, p. 12).



5.2.2 Enable Policy Alignment Around Climate-Resilient Development

Because climate impacts affect multiple sectors and development issues, adaptation actions must be undertaken by a range of departments and agencies. But this effort should be more than having different departments and agencies assess climate risks and devise adaptation measures in their areas of responsibility. These efforts must also be brought together to offer a more coherent, efficient, and effective approach to building climate resilience in Canada. The NAS can offer a framework for identifying and exploiting opportunities for such policy alignment (as illustrated in Box 1).

Box 1. Policy alignment in Fiji's National Adaptation Plan

In developing its NAP, the government of Fiji made clear that it saw adaptation as synonymous with climate-resilient development rather than as a separate or parallel area of interest. As such, the adaptation approach and priorities put forth in the Plan built upon the existing policy and planning landscape. This involved reviewing a series of policy instruments that contained actions that could “justifiably tackle known climate vulnerabilities and adaptation barriers” and ensuring that such actions were incorporated and elevated through Fiji's national adaptation plan (Government of the Republic of Fiji, 2018, p. 8). The policy instruments included the National Development Plan, the Green Growth Framework, the Climate Change and Health Strategy, and National Disaster Risk Reduction Policy.

Canada's NAS can be an opportunity to advance other policy agendas in the name of building a more climate-resilient country. Recognizing that there is a long list of federal policies that could be considered relevant to adaptation—the CESD's 2017 audit report, *Adapting to the Impacts of Climate Change*, identified 19 key departments, after all—the NAS would need to provide a framework for identifying those that are most important to its success. Some policies for consideration in the current context might include:

- The [Emergency Management Strategy for Canada](#) (2019), which, as outlined in section 4.1, provides a pan-Canadian strategy for DRR and establishes five priority areas of activity to strengthen the country's overall resilience by 2030.
- The Calls to Action in the [Truth and Reconciliation Commission's Final Report](#) (2015), which lay out specific actions to be taken by all levels of government to “redress the legacy of residential schools and advance the process of Canadian reconciliation” with Canada's Indigenous communities. A NAS that advances these actions will address some of the most intractable drivers that increase Indigenous communities' climate vulnerability.
- The [Greening Government Strategy](#) (2020), which identifies four key focus areas for federal operations to take action on climate change; one of the focus areas is climate-resilient services and operations, which has the goals of risk planning, minimizing



disruptions to government operations, and using nature-based solutions to protect physical assets.

- The [National Infrastructure Assessment](#) (under development), which will identify Canada’s long-term infrastructure needs and priorities as it builds towards a resilient and net-zero emissions future that fosters growth and competitiveness.
- The [Federal Sustainable Development Strategy](#) (2019–2022), which presents the government’s priorities, goals, targets, and actions to advance Canada’s sustainable development, as required by the *Federal Sustainable Development Act*. It is also a roadmap for Canada’s support of the environmentally focused Sustainable Development Goals of the United Nations 2030 Agenda for Sustainable Development.
- The [Arctic and Northern Policy Framework](#) (2019), which identifies eight overarching and interconnected goals to guide federal investments and activities for a vibrant, prosperous, and sustainable Arctic and northern region. These goals include adapting to the current and future impacts of climate change.

In addition to the federal policies listed above, the NAS should also provide space for alignment and collaboration with the forthcoming Canada Water Agency, which will improve freshwater management across Canada. Its role in providing accessible and standardized water prediction products, services, and applications (e.g., flood and drought outlooks) is among the opportunities being explored in defining the Agency’s mandate and would position it to be an important adaptation resource.

5.2.3 Advance Reconciliation with Indigenous Peoples in Canada

A key consideration for Canada as it prepares the NAS is how to fulfill its stated commitment to a renewed relationship with Indigenous Peoples “based on a recognition of rights, respect, cooperation, and partnership” consistent with the federal government’s support for the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)⁹ (Government of Canada, 2016a, p. 4). The formulation and implementation of the NAS should be undertaken in a manner consistent with Section 35 of the Constitution and associated court rulings, the recommendations of the Royal Commission on Aboriginal Peoples, and the Calls to Action contained in the final report of the Truth and Reconciliation Commission (ICA, 2021). Alignment with these recommendations would enable the NAS to look beyond the symptoms to the underlying drivers shaping the vulnerability of Indigenous Peoples to climate change.

Decisions will need to be made regarding several issues if the federal commitment to a renewed relationship is to be fulfilled. These include:

- **Consultation process:** The federal government has a duty to consult, accommodate, and, under UNDRIP, to obtain “free, prior, and informed consent before adopting and

⁹ The Government of Canada introduced legislation in December 2020 to adopt the UNDRIP (Government of Canada, 2021b).



implementing legislative or administrative measures that may affect them” (United Nations, 2007, p 4, cited in ICA, 2021, p. 23). To do this, the NAS consultation process will need to improve on the process used to prepare the PCF, where Indigenous groups’ involvement was limited and indirect.¹⁰ The government should commit to co-developing a process with First Nations, Inuit, and Métis leadership that directly feeds into shaping the direction and content of the NAS.

- **Framing:** The federal government can also consider the extent to which an Indigenous worldview might frame or inform the structure of its NAS. Globally, NASs and NAPs are typically structured around economic sectors. This can limit the potential to address interconnections and interdependencies between different climate change impacts and adaptation measures; between the drivers of climate vulnerability; and between climate mitigation, climate adaptation, DRR, and biodiversity restoration objectives. The federal government might develop the NAS using a more holistic perspective that aligns with an Indigenous worldview—if not fully from an Indigenous perspective.

Some experience with such an approach already exists in Canada. For example, the Government of British Columbia adopted a holistic framework in its assessment of climate risks, organized around nine dimensions of consequences (British Columbia, 2019).¹¹ They have built upon this framework in the (ongoing) development of their adaptation strategy, which has involved a considerable amount of Indigenous and public engagement (Broad, 2021). As well, to guide its climate risk assessment, the Yukon has developed a resilience framework that takes a holistic approach and was informed by input from experts that work for Yukon First Nations and transboundary Indigenous groups.¹²

- **Inclusion of Indigenous knowledge:** As recognized by the PCF Working Group on Adaptation and Climate Resilience, respectful inclusion will “need to ensure that the use of Traditional Knowledge in adaptation planning and action is done in an appropriate way that is mindful of intellectual property issues, and that values Traditional Knowledge as equal to scientific knowledge” (Government of Canada, 2016b, p. 33–34).

¹⁰ During consultations on the PCF, despite their early requests, First Nations, the Métis Nation, and Inuit representatives were not given official seats on the Working Groups established to support each of its four pillars (ICA, 2021). Rather, the Working Groups were asked to work with Indigenous groups (Government of Canada, 2016a), and the chairs of the adaptation and climate resilience pillar took part in weekly teleconferences with representatives of the AFN, ITK, and MNC (ICA, 2021).

¹¹ These dimensions are: loss of life, health impacts, psychological impacts, loss of social cohesion, loss of cultural resources, loss of natural resources, loss of economic productivity, loss of infrastructure services, and cost to provincial government (British Columbia, 2019).

¹² The Yukon climate risk assessment seeks to build a shared understanding of Yukon resilience, break down silos, and build relationships between those working on climate change adaptation. Throughout the assessment, Yukon invited Indigenous knowledge keepers and youth to share their perspectives and created space for Yukon First Nations storytelling. These discussions emphasized the importance of Indigenous knowledge in understanding and building resilience to climate change. The Yukon is using its resilience framework to inform future actions in Our Clean Future, the territory’s climate change, energy, and green economy strategy (personal communication, representative of the Government of the Yukon, May 21, 2021).



- **Build on Indigenous leadership:** Indigenous Peoples are innovators and agents of change in adaptation. First Nations, Métis, and Inuit Peoples are actively engaged in understanding their climate risks and developing strategies to address them. This is reflected in efforts such as the Inuit Priorities for Canada’s Climate Strategy; the protection of natural spaces that increase resilience to climate change through the Indigenous Protected and Conserved Areas and Indigenous Guardians programs; and the development of innovative solutions such as Smart Ice, which brings together traditional knowledge and advanced technology to provide near real-time data on sea-ice thickness and local ice conditions (Smart Ice, n.d.). The NAS will need to reflect and build on the knowledges, capacities, and experiences of Indigenous Peoples.
- **Monitoring, evaluation and learning:** Indigenous knowledge will also need to be incorporated into the planned framework for measuring, evaluating, and learning from national progress in adaptation (see section 5.2.4). The Expert Panel on Climate Change Adaptation and Resilience Results recognized that the success of a system to track adaptation progress in Canada will depend in part on an “ability to respectfully work with Indigenous Peoples and Indigenous Knowledge Systems to measure progress on adaptation and respond to M&E results to improve capacity and resilience with Indigenous Peoples” (Government of Canada, 2018, p. 58). Consultation is required to develop these sharing arrangements (Government of Canada, 2018).

International leadership with respect to the inclusion of Indigenous Peoples and Indigenous knowledge in the development and implementation of NASs and NAPs is relatively limited, which in turn limits the potential for the federal government to learn from others. However, Canada can draw upon the experiences of New Zealand and Peru, described in Boxes 2 and 3. This gap in international experience suggests an opportunity for Canada to establish itself as a leader in demonstrating effective and respectful processes for the meaningful inclusion of Indigenous Peoples in the development of NASs and NAPs.

Indigenous engagement in the NAS process needs to start early and plan for the considerable time that will be required. Existing mechanisms, such as the bilateral tables established after the PCF for ongoing engagement with Indigenous Peoples in the implementation of climate priorities, could be used to advance this process. Insights may also be gained from provincial and territorial experiences, such as British Columbia’s investment in establishing its Indigenous Climate Adaptation Technical Working Group (British Columbia, n.d.).



Box 2. Weaving iwi and Māori perspectives into New Zealand's adaptation planning process

New Zealand's 2019 *Climate Change Response (Zero Carbon) Amendment Act* establishes a framework for the country's mitigation and adaptation efforts, and includes specific requirements related to its iwi and Māori population. The Act requires New Zealand's NAP to "take into account the economic, social, health, environmental, ecological, and cultural effects of climate change on iwi and Māori" (Government of New Zealand, 2019).¹³ It also lays out requirements for New Zealand's independent Climate Change Commission, including that among its seven commissioners there will be expertise relevant to the Treaty of Waitangi and the Māori world, language, traditional knowledge, and custom and protocol. The Commission is to consider "the Crown-Māori relationship... and specific effects on iwi and Māori" when performing its functions and duties (Government of New Zealand, 2019).

Since the Act came into effect, New Zealand completed its first National Climate Change Risk Assessment (NCCRA) in August 2020 and is now developing plans for its first NAP, which is to be completed by August 2022. The NCCRA incorporates a Living Standards Framework for well-being that complements the interconnected Māori worldview and documents how it sought to reflect Māori perspectives in its content while also acknowledging the limitations of these efforts (Government of New Zealand, 2020). While recognizing the challenges associated with doing so, the Ministry is considering an iwi Maori-led adaptation plan that will take a holistic approach, rather than a sectoral approach, either now or in the future.¹⁴

¹³ The Act also requires inclusion "in a emissions reduction plan a strategy to recognise and mitigate the impacts on iwi and Māori of reducing emissions and must ensure that iwi and Māori have been adequately consulted on the plan" (Government of New Zealand, 2019).

¹⁴ Personal communication, representatives of the Government of New Zealand, March 18, 2021.



Box 3. Peru's Indigenous Climate Platform

Peru has given a voice in climate-related decision-making to the seven national organizations representing Indigenous Peoples, their traditions, and their ancestral knowledge. In keeping with its adoption of UNDRIP, the Indigenous Climate Platform (Plataforma Climática Indígena [PCI]) was enshrined in law in September 2020—the first of its kind in the world (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety [BMU], 2020).¹⁵ With funding and support from the Government of Peru, the objective of the PCI is to “manage, articulate, exchange, systematize, disseminate and monitor [Indigenous groups’] proposals for adaptation and mitigation measures for indigenous or native peoples, as well as their traditional and ancestral knowledge, practices and knowledge on climate change that contribute to the comprehensive management of climate change” (Government of Peru, 2020). It also enables Indigenous groups to meet, share, and implement solutions at the local, regional, and national levels (Younger, 2019). Moreover, the PCI gives its members access to the influential High Level Commission on Climate Change, which is responsible for proposing and recommending climate change mitigation and adaptation measures (BMU, 2020). PCI spokespersons are to bring proposals and recommendations to the Commission, providing a formal mechanism by which Indigenous groups can inform federal policy and practice. Whereas the PCI is, undoubtedly, a positive development, some Indigenous organizations have expressed concern that the instrument falls short of granting them a real mandate in influencing climate governance and in prioritizing adaptation actions (ONAMIAP, 2020).

5.2.4 Design a Clear Framework AND System for Tracking Progress in Adaptation

Accelerating adaptation efforts across Canada will require a system that allows the federal government to understand what is working and what is not, in which contexts, and why. With this knowledge, adaptation practice can be improved over time, proven solutions scaled up, and investments rendered better able to deliver value for money.

Establishing a national MEL system around adaptation is challenging. Shifting baselines, long time horizons, and the context-specific nature of adaptation all make it tricky to assess whether federal actions are building resilience. The task of aggregating data and information, in different formats and of different quality, from a range of sectors and scales of governance can quickly become unwieldy and difficult to translate into stories of progress.

Most countries are in the early stages of MEL for adaptation. But what’s becoming clear is that the effort requires more than a framework of goals, targets, and indicators; it must be accompanied by a system that defines a process, institutional structure, roles, responsibilities,

¹⁵ PCI is also known as Plataforma de Pueblos Indígenas para enfrentar el Cambio Climático.



and commitments for tracking progress. Such a system can only be built and maintained on a foundation of strong stakeholder engagement from the start.

In devising a MEL framework and system for Canada, the federal government should consider:

- **Defining the purpose and the objectives of the MEL system.** Before getting into any details of how to measure progress, there must be agreement on the objectives of MEL and the intended use of its results. In general, MEL should focus on three key objectives: monitoring (Are we doing what we said we would do?), evaluation (Are we having an impact? Is vulnerability being reduced or resilience being built?), and learning (Why is this working or not, where, and for whom?). The degree to which each of these objectives is emphasized will shape the MEL framework and system. While the overarching purpose and objectives of the system should not change drastically over time, the approach used to meet these objectives will likely evolve.
- **Identifying what to measure.** This will largely depend on the overarching structure and themes of the NAS, just as the Expert Panel on Climate Change Adaptation and Resilience Results aligned their recommendations with the five action areas under the adaptation and climate resilience pillar of the PCF. Within this, the extent to which adaptation contexts, processes, and results are each tracked will need to be determined. Measuring adaptation results is traditionally the most challenging; even the task of articulating the specific results sought via adaptation investments can be tricky. Developing a theory of change to map out the assumptions and basis for attribution (i.e., how and what parts of an adaptation action or investment can lead to the achievement of a goal) could be helpful in this regard.
- **Incorporating specific adaptation targets.** By articulating the level of change sought, targets can increase accountability, provide greater clarity of purpose, and galvanize action around adaptation. They need not reflect only the priorities in the NAS; they can crystallize what adaptation action must deliver to be deemed successful. Importantly, targets can also put adaptation on a more equal footing with mitigation by providing a counterbalance to greenhouse gas reduction and net-zero targets. Adaptation targets might build on existing targets in relevant strategies and policies, such as those in Canada's Federal Sustainable Development Strategy or its Poverty Reduction Strategy, thereby reinforcing policy alignment. This was the approach taken in the UK's National Adaptation Programme, drawing on targets or goals from its 25-Year Environment Plan. Clear baselines will need to be established, while sequential targeting may also be required in order to allow for regular appraisal of goals over a longer time horizon and within a changing context (Dinshaw et al., 2014).
- **Selecting a core set of indicators to get started.** The selection of indicators should build on the list of 54 process- and outcome-based indicators proposed by the Expert Panel on Climate Change Adaptation and Resilience Results. Further inspiration can be drawn from the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH and International Institute for Sustainable Development's [Repository of Adaptation Indicators](#)



(Hammill et al., 2014b), the Notre Dame Global Adaptation Initiative's [Urban Adaptation Assessment Indicator List](#), the [World Bank's illustrative list of adaptation indicators](#) (Hallegatte et al., 2020), and the various standards and indicators around adaptation and resilience developed by the International Organization for Standardization (ISO). With no shortage of indicator options, the challenge will be narrowing down the list to a manageable number that captures the different issues, sectors, and dynamics that shape climate vulnerability and resilience in Canada, while maintaining the strategic focus of the NAS. Starting small and simple is perfectly reasonable. As the climate context and adaptation needs evolve, the indicators used to measure progress will also likely change.

- **Identifying the right tools for regular data and information collection and analysis.** Ideally, a suite of approaches should be used for both gathering data (e.g., vulnerability and risk assessments, document analyses, interviews, surveys, questionnaires, case studies, cost-benefit and cost-effectiveness analyses), and converting it into useful formats for interpretation. For example, in South Africa and Fiji, a traffic light system has been established to monitor adaptation actions, while in Kiribati, a scorecard system is being developed to do the same. The UK's scoring system for assessing progress is structured around the quality of plans in place to address identified climate risks and evidence of climate change risks being managed.
- **Committing to regular progress reporting.** Demonstrating accountability through systematic, timely, and (semi-)independent progress reporting is standard practice in most countries with adaptation policies. The type of reporting undertaken for the NAS would need to go beyond the performance auditing that is undertaken by Canada's Commissioner of the Environment and Sustainable Development. Adaptation progress reporting could include assessments of the adequacy of adaptation efforts against the changing nature of climate risk, the effectiveness of federal adaptation actions in building resilience, and the lessons being gathered to inform subsequent investments in adaptation. The UK's Adaptation Committee presents statutory progress reports to Parliament every other year; Japan evaluates and publishes its progress every fiscal year, while France undertook mid-term and final evaluations of its first national adaptation plan to facilitate mid-course corrections and inform its second plan, respectively.
- **Ensuring that the institutional structure for the overall NAS includes explicit arrangements for MEL.** Whichever framework, indicators, targets, and tools are used to measure progress in adaptation, the entire process must be clearly defined and managed by a responsible department. The timelines, tasks, roles, and responsibilities for MEL must be part of the effort in defining and establishing the overall institutional arrangements for the NAS. For instance, a special committee might be created to focus on MEL of adaptation at the national level, reporting to the advisory body proposed in section 5.1.2. Different departments must be made aware of what is being measured and what is expected of them in terms of data collection; a system for organizing, storing, and visualizing the MEL data will need to be established and maintained, and will likely require dedicated staff training.



5.3 Facilitate Early and Sustained Action

Given Canada's need to catch up with much of the world in developing a NAS, and given the urgent need to mobilize action, the federal government should try to produce a policy instrument that offers staying power and long-term thinking, as well as an immediate plan to act. To ensure that the strategic orientations within the NAS lead to action and results, the federal government can incorporate certain elements that help strike this balance.

5.3.1 Bridge the Implementation Gap

As the global review in section 3 highlighted, the growing number of adaptation policy instruments being developed around the world is not translating into a corresponding increase in adaptation action on the ground. There are many reasons for this implementation gap, including lack of finance, capacity constraints, insufficient information and tools, weak leadership, and poor coordination, to name a few. The NAS can anticipate and address some of these challenges. Some may be addressed through its main content, such as mandating an institutional structure or defining an adaptation planning cycle. Other means of bridging the implementation gap may require additional features, such as:

- **Including an initial implementation plan:** The NAS might have, as an annex or other accompanying document, an initial implementation plan that outlines immediate priorities, next steps, timelines, and responsible departments. Recognizing that the federal government may want to develop a more fulsome national adaptation plan following its NAS, which would require more time and resources, an initial implementation plan could at least cover the time between the finalization of the NAS and that of a full-fledged NAP. This would allow the federal government to maintain support and momentum in advancing its adaptation priorities.
- **Making initial financial commitments:** Too often, especially in the case of developing countries, national adaptation strategies or plans are launched with very little financial backing to support their implementation; the expectation is that the strategy or plan will serve as a blueprint for subsequently securing financing from a range of public, private, domestic, and international sources. Months, even years, can pass before adaptation priorities are turned into projects, programs, or initiatives, which not only dampens the momentum of national adaptation efforts but can push senior decision-makers and other stakeholders to question the ultimate value of national adaptation strategies or plans. While the situation in Canada is quite different, the importance of committing some financial resources to the NAS early and strategically cannot be underestimated.
- **Announcing an early deliverable:** Related to the previous point, the NAS could be launched with an announcement around an adaptation investment highlighted in the NAS to demonstrate that the government wants to proceed apace with meeting its adaptation goals and targets. For example, the European Adaptation Strategy was published in late February 2021, and identified the climate-related risks for health as one of the key



knowledge gaps that needed to be addressed. A month later, the [European Climate and Health Observatory](#) was launched as the first concrete deliverable of the new Strategy.

This mix of planning some practical next steps and providing visible signals of commitment to implementation can help the federal government set up the NAS for longer-term success.

5.3.2 Create a Knowledge Management Strategy

Recognizing that adaptation planning is an iterative process and that knowledge plays an essential role in improving the effectiveness of adaptation outcomes over time, the NAS should advance how climate change adaptation knowledge is managed in Canada. At present, adaptation knowledge is available to Canadians through various channels. Among these are those supported by NRCan, such as the Climate Change Adaptation Platform, the Climate Change Adaptation Community of Practice hosted by the Climate Risk Institute, and the Adaptation Library supported by ICLEI Canada. The resources, webinars, and forums available through these sites are complemented by the range of services provided by ECCC's Canadian Centre for Climate Services, such as access to climate data and training resources. Additionally, the Indigenous Climate Hub developed by and for Indigenous Peoples provides a platform for sharing experiences and stories, accessing resources and tools for monitoring and adapting to climate change, and raising awareness regarding upcoming events and funding opportunities. These are but a sampling of the variety of sources of adaptation-relevant information provided by a wide range of governments, non-governmental organizations, research institutes, professional associations, and academic institutions.

At present these resources are largely disconnected from one another and disjointed, making it challenging for Canadians to access, assess, and apply the knowledge they need in order to engage in planned adaptation. Particularly in light of the growth in adaptation resources stimulated by recent federal investments, there has been more discussion around how these resources can be curated and made easily accessible over the long term. Some existing federally supported sites also require additional investment to update their interfaces or are ensure that they are continuously updated.

To address some of these issues, NRCan is currently exploring how to expand its existing Adaptation Platform to create a bigger, more collaborative national virtual climate adaptation platform—an Adaptation Hub—where experts and citizens alike can access and share information. Planning for this platform can be informed by international experiences with similar initiatives. Indeed, many of the countries analyzed for this report curate adaptation information and offer capacity strengthening to a range of stakeholders through a dedicated virtual platform managed by a government agency or arm's length organization. For example:

- Germany's environment ministry established the [Competence Center for Climate Impacts and Adaptation \(KomPass\)](#) within the German Federal Environment Agency, which supports the implementation of its Adaptation Strategy (Deutsche Anpassungsstrategie)



by providing policy advice, conducting environmental research, disseminating information, and providing networking support.

- France established a Climate Change Adaptation Resource Centre ([Centre de ressources pour l'adaptation au changement climatique](#)) based on a recommendation from the first evaluation of its NAP. The virtual resource centre facilitates the sharing of good practices and measures France's progress in adapting to climate change under its second NAP.
- Japan has created a [Climate Change Adaptation Information Platform \(A-PLAT\)](#) hosted by the National Institute for Environmental Studies, which consolidates information on climate change impacts and adaptation measures, and also provides technical advice and support to local governments and local climate change adaptation centres.
- South Africa's [Let's Respond Toolkit](#) is an example of a virtual knowledge platform focused on provided stakeholders working at the sub-national level with information and tools for adaptation planning and implementation.

NRCan's proposed expanded virtual climate change adaptation platform could play a role similar to these international examples. To achieve this goal, it will need to establish strategic crosswalks to the Canadian Centre for Climate Services and Canada's Platform for Disaster Risk Reduction.¹⁶ Mapping out such links and relationships points to the need for a broader federal-level knowledge management strategy for climate adaptation. Such a strategy should underpin the goals and structure of a national virtual adaptation platform and ensure continual access to relevant, contemporary, usable information and knowledge that supports evidence-based policy and decision-making, maximizes efficiencies, and creates opportunities for learning and innovation.

The NAS is an opportunity to propose the development of a dedicated knowledge management strategy for adaptation that will help overcome the current fragmentation of adaptation information. Placing the proposed Adaptation Hub at its core, the strategy could:

- Articulate principles for knowledge management in adaptation, such as user-driven design, the need to weave in Indigenous and local knowledges, and a commitment to co-creation of knowledge.
- Set out institutional arrangements to enable collaboration and coordination across the federal government.
- Establish mechanisms for ensuring the regular flow of information to and between sectors and jurisdictions, as well as to and between practitioners and knowledge generators and brokers.
- Define the role of the knowledge management system in supporting Canada's MEL system, such as its contribution to regular progress reporting.

¹⁶ An emerging example of this type of collaboration is NRCan and the Canadian Centre for Climate Services' co-creation of an interactive map of climate change adaptation case studies. Expected to be launched in 2021, the map will contain case studies from different regions and sectors that address a range of climate change impacts.



A clearly articulated knowledge management strategy for adaptation would enable the federal government to generate, synthesize, and package the breadth of data, information, and knowledge needed in a coherent, efficient, and accountable manner. As such it could play a key role in strengthening the capacity of practitioners to adapt to climate change.

5.4 Position Canada as a Leader on Adaptation

Just because Canada is catching up with its international peers does not mean the country cannot be a leader on adaptation. Canada is an internationally recognized proponent for key development issues and can now apply its approach to adaptation, while also benefitting from the lessons from other countries. Taken together, this provides the federal government with an opportunity to develop a NAS that builds on Canada's international contributions and reflects the latest good practice in adaptation policymaking. This section highlights some issues the federal government may want to consider as part of this effort.

5.4.1 Put Gender Equality and Social inclusion at the Heart of Canada's Approach to Adaptation

Gender equality and social inclusion are central to building climate resilience. The impacts of climate change affect people differently and can amplify existing inequalities, depending on their gender, race, sexual orientation, and a range of other socio-economic factors (Abram et al., 2019; Arneeth et al., 2019; Castañeda Camey et al., 2020; Vincent et al., 2014). Within communities, people have different opportunities and capacities to prepare for and respond to climate impacts depending on their gender, how they earn their livelihoods, whether they are in a group that experiences racism or other forms of discrimination, and the security of their income and housing. Canada's adaptation strategy will only be effective if it takes these differences into account, tackles the inequalities that exacerbate vulnerability to climate change, and strives for equitable benefits for people of all genders and social groups.

Guided by the call for gender-responsive climate action in the Paris Agreement, as well as the UNFCCC's Gender Action Plan, low- and middle-income countries are making a concerted effort to integrate gender considerations into their NAP processes (Dazé, 2020). In Fiji, gender equality and human rights are identified as a value underpinning the NAP process, and these issues are integrated throughout the plan (Government of the Republic of Fiji, 2018). South Africa has also expressed its commitment to gender-responsiveness as a guiding principle for its NAP process, recognizing that gender inequality exacerbates vulnerability to climate change (Government of South Africa, 2020). The government of Kiribati conducted a gender analysis to inform the update of its NAP (Dekens, 2017). This analysis yielded concrete, context-specific recommendations such as training staff of health clinics on climate change, mental health, and gender-based violence (Government of Kiribati, 2019).

Canada's commitment to Gender-Based Analysis Plus (GBA+) provides a strong foundation for a gender-responsive and socially inclusive NAS. Conducting a comprehensive and participatory



GBA+ process for the adaptation strategy would enable a better understanding of the intersectional factors that make some community members more vulnerable than others to the same impacts of climate change. With this understanding, targeted strategies can be designed that address the particular needs of, for example, rural women, people with disabilities, Indigenous communities, new arrivals, the homeless population, and those whose livelihoods directly depend on the land. The participatory elements of the GBA+ can also establish the foundation for the engagement that will be needed throughout the development and implementation of the NAS, as well as supporting reconciliation efforts (see sections 5.1.3 and 5.2.3 for more details), by identifying key stakeholder groups, initiating dialogue, and making these groups aware of the NAS process.

GBA+ should not only be used as a planning tool, however. It should be applied throughout the implementation of the adaptation strategy, making it essential that the institutional arrangements for the process incorporate individuals and institutions with relevant expertise. This could include Women and Gender Equality and Employment and Social Development, as well as academics and civil society organizations working at the nexus of climate change, gender equality, and social inclusion. Having gender and social inclusion experts involved in key mechanisms, such as the joint committee, will help to ensure that the gender equality and social inclusion lenses are applied throughout the process.

GBA+ is also essential in the measurement of progress. A number of the indicators proposed by the Expert Panel on Climate Change Adaptation and Resilience Results present opportunities for disaggregation by gender, age, race, Indigeneity, sexual orientation, and other factors. This includes, for example, indicators such as the number of Canadians living on low incomes in climate hazard areas and number of people directly affected by a climate-related disaster (Government of Canada, 2018). With disaggregated data, GBA+ can be conducted to enable an understanding of who is benefiting from adaptation investments and who is being left behind. This provides essential learning on what works and what doesn't for different groups, and enables adjustments towards more equitable outcomes.

5.4.2 Recognize the Employment and Labour Aspects of Adaptation

As the impacts of climate change grow, job losses and changing working conditions are likely to happen in certain climate-sensitive sectors such as agriculture, fisheries, and tourism. Adaptation action will involve anticipating and managing these changes in order to protect affected workers and communities to ensure nobody is left behind in a more climate-resilient economy. This can be viewed as the adaptation analog to the mitigation efforts around supporting a just transition for workers whose livelihoods will be affected by the shift towards low-carbon or net-zero economies.

The EU's latest Adaptation Strategy refers to "just resilience," which essentially captures both the social inclusion and employment aspects of adaptation (European Commission, 2021). On the latter, the Strategy refers to promoting long-term economic diversification strategies and policies, as well as to supporting the education, training, reskilling, and requalification of workers to help them move into new sectors. Just resilience also addresses working conditions to protect



the health and safety of workers from climate impacts (International Labour Organization, 2018). Box 4 illustrates a just resilience strategy being applied in Switzerland.

Box 4. Protecting Swiss construction workers against weather-related work stoppages

The largest trade union in Switzerland secured special protections for construction workers in the canton of Vaud for situations of heavy rain, snow, or cold weather (Felli, 2018). As part of the agreement, the Swiss Federal Office of Meteorology developed an [app called “Météobât”](#) that publishes official forecasts to help construction companies adjust their work plans during inclement weather (Government of Switzerland, 2020). In cases of stoppage, workers are compensated for lost hours. While the initial agreement did not cover heatwaves, further protections will be sought, as Switzerland is expected to experience significantly warmer summer temperatures due to climate change.

Despite a growing awareness of the need to manage the employment and labour implications of climate change impacts and adaptation action, not many national adaptation policies formally address these issues. Canada’s NAS can be an opportunity for the federal government to get ahead of these issues, especially given the importance of agriculture, fisheries, and tourism to Canada’s economy. And this recognition should consider the opportunities, too. Investments in climate-resilient infrastructure and water management technologies, for example, are expected to have positive effects on employment around the world, and these should also be anticipated and managed (International Labour Organization, 2018).

5.4.3 Elevate the Role of Nature in Managing Climate Risks

Nature-based solutions (NbS) such as wetlands, sea grasses, riparian forests, and rain gardens can be cost-effective means of addressing climate hazards while also providing social and environmental co-benefits such as carbon sequestration, recreation, and improved mental health and wellbeing (Moudrak, Feltmate, Venema, & Osman, 2018; OECD, 2018). Reflecting the benefits of NbS, the Global Commission on Adaptation called on government to “raise understanding of the value of nature for climate adaptation,” “embed nature-based solutions into adaptation policy and planning,” and “increase investment in nature-based solutions” (Global Commission on Adaptation, 2019, p. 32–34). As co-Chair of the Global Commission on Adaptation’s Action Track on NbS, Canada worked to accelerate the use of NbS to meet climate adaptation challenges.

Domestically, the federal government has committed to advancing NbS through actions such as setting aside billions of dollars for nature conservation, financing natural infrastructure through the Disaster Mitigation and Adaptation Fund, and expanding the number of Indigenous Protected and Conserved Areas and the Indigenous Guardians programs (Government of Canada, 2020a). While these investments may help Canada mitigate climate risks, the uptake of



NbS faces challenges that may limit further investment in this approach. Central amongst these is the absence of a strong business case for NbS. Without a solid evidence base regarding the performance, co-benefits, and effectiveness of NbS, and standardized approaches to better assess and compare NbS (especially against traditional or grey infrastructure), implementation at scale will be difficult to achieve (Terton, 2021). As well, NbS themselves are vulnerable to climate change and will need to adjust to changing conditions—a limitation that is too often overlooked when NbS are incorporated into adaptation strategies and plans (Seddon et. al, 2020).

Given the international leadership role Canada has taken in NbS for adaptation, the role of nature in meeting Canada’s adaptation goals could be a prominent theme in the NAS. The NAS should align with the Government of Canada’s stated goal of “protecting 25% of Canada’s land and oceans by 2025, working toward 30% by 2030” (Government of Canada, 2020a). As well, the NAS should seek to maximize synergies and minimize trade-offs between efforts to promote the use of NbS for mitigation as well as adaptation. The advisory committee on nature-based climate solutions announced in the *A Healthy Environment and a Healthy Economy* plan may provide an opening for making these connections (Government of Canada, 2020a). Further, efforts to enhance the role of NbS may also align with efforts to advance reconciliation with Indigenous Peoples, as illustrated with commitments to expand the Indigenous Protected and Conserved Areas and the Indigenous Guardians programs (Government of Canada, 2020a). Finally, the NAS’s MEL could contribute to building the evidence base for the performance of NbS, helping to drive a greater adoption of this approach by governments and the private sector across Canada.

5.4.4 Address Adaptation Issues Outside of Canada’s Borders

As one of the most globally integrated countries in the world, Canada’s adaptation successes and challenges are tied to those felt outside its borders. Climate impacts experienced in other countries may have consequences for Canadians—for example, through supply chain disruptions, commodity price volatility, and migration patterns. Similarly, the adaptation decisions made in Canada may have implications for others and vice versa. Transboundary natural resources, such as river basins and lakes, provide some clear examples of where this might occur (Adams et al., 2020). Canada’s NAS is an opportunity to acknowledge and address such transboundary interdependencies.

National climate risk assessments are a logical entry point for exploring such dynamics. The United States’ Fourth National Climate Assessment has a chapter entitled “Climate Effects on U.S. National Interests” and lists economics and trade, international aid, national security, and transboundary resources as the four main interest areas (Smith et al., 2018). The UK’s second climate change risk assessment includes a chapter on international dimensions, which flags that the UK could import additional climate impacts through “the price and safety of food and other commodities, changes in the patterns of trade, disruption to global supply chains, and risks to overseas investments” (Committee on Climate Change, 2017, p. 72). In its subsequent National Adaptation Programme, the UK government committed to addressing the climate risks associated with invasive non-native species and the risks related to international food production



and trade (Department for Environment, Food and Rural Affairs, 2018). Several countries with overseas territories, such as France and the Netherlands, have also devoted part of their national adaptation strategies or plans to priorities in these jurisdictions. Finally, “stepping up international action for climate resilience” is one of four principle objectives of the new EU Adaptation Strategy (European Commission, 2020, p. 17). Under this, the European Union commits to increasing support for international adaptation action, scaling up international adaptation finance, and strengthening global engagement and partnerships around adaptation.

These examples provide some ideas for how Canada’s NAS might acknowledge the international dimensions of its adaptation efforts. For example, if Canada’s NAS lays out a unified risk assessment framework and cycle, it might also note that international risks must be assessed and addressed. In offering a framework for policy alignment around climate-resilient development, the NAS might include international policies and commitments—for example, support to vulnerable countries or regions or the provision of climate finance. The NAS might also point to global strategic partnerships, participation and leadership in international negotiations, and the need for international scientific cooperation and exchange as all necessary to advancing Canada’s own interests in adaptation.

While the focus of the NAS is national by definition, acknowledging the challenges, opportunities, and overall dynamics of adaptation outside of Canada’s borders would help the federal government develop a leading strategy that recognizes climate change as the global systemic issue that it is.



6.0 Conclusion

The preparation of its first NAS is an important opportunity for Canada to catch up with its international peers in devising a nationally owned, fit-for-purpose policy to address the impacts of climate change. The starting point for this effort is promising, given the breadth and depth of experience in climate risk management across the federal government and in other jurisdictions. The potential is far-reaching, as the strategy comes at a time when the urgency of adaptation is growing and the need to get Canada's national house in order has never been greater.

This paper summarizes the global progress in adaptation planning and reviews a dozen international adaptation policies to highlight some of the key trends, challenges, and opportunities for the federal government to consider in developing the NAS. It also synthesizes the existing policies, institutions, and knowledge resources at the federal level upon which the NAS should be built, and puts forward a total of 13 mutually reinforcing considerations to inform its development and implementation. Woven throughout these considerations are the recurring themes of institutions, engagement, process, accountability, and inclusion.

Institutions. Planned adaptation is a governance issue. Without the institutional scaffolding needed to work across government jurisdictions and stakeholder groups, shared priorities cannot be identified, solutions scaled up, or a true picture of progress painted. The NAS needs to tackle the fragmented federal landscape of adaptation efforts and establish a structure that raises the political and public profile of this critical process, mobilizes sustained action, and keeps the different players and initiatives on track and speaking to each other. This must involve dedicated efforts to collaborate with PSC and draw from their extensive efforts in emergency and risk management. Having direct and regular reporting arrangements to the Prime Minister's Office will also be important for institutional support.

Engagement. The comprehensiveness and implementability of the NAS will be strongly shaped by how the federal government engages different stakeholders. To really address the drivers of vulnerability in Canada and design measures that will help Canadians make different decisions, a wide range of stakeholders will need to understand the value of the NAS and see themselves in its content. This means going beyond consultations to investing in capacities for engagement and, once capacity is strengthened, co-designing processes and solutions.

Process. Adaptation is an iterative cycle of assessment, implementation, and MEL. Having a national-level policy that mandates and abides by such a process will be key to getting Canada on a strong resilience-building pathway. The discipline and reliability of having a regular national risk assessment cannot be underestimated. Unified assessment frameworks are also important, and they can evolve with each cycle. To manage climate risk, Canada must regularly and continuously assess it.

Accountability. One of the biggest issues confronting the international adaptation policy community is measuring progress. The Paris Agreement established a global goal on adaptation,



and the global stocktake in 2023 will measure progress towards this goal, which has only increased countries' interest in MEL. This is along with the targets and indicators countries are using to track their progress towards the Sustainable Development Goals and the Sendai Framework, which are also connected to adaptation. Canada's upfront commitment to developing targets and a framework for measuring progress is therefore timely and important. While the prevailing fixation on indicators is understandable, this should not distract from the need to establish a robust system, with structures, processes, and deliverables, that uses indicators as well as other tools to tell Canada's story of progress in adaptation.

Inclusion. Finally, as conversations about social justice grow louder around the world, the opportunity to address gender equality and social inclusion through climate policy seems more urgent than ever. Canada can build on its recognized leadership in gender equality and women's empowerment issues to champion these issues in climate change adaptation at home and abroad. But Canada can also do much more. Placing social inclusion at the heart of Canada's efforts to manage climate risk also means advancing the priorities of Indigenous groups. This involves more than integrating Indigenous knowledge into how adaptation priorities are framed and addressed, and it goes beyond extensive and respectful consultation processes—although both of these are important. It also means acknowledging the structural causes of Indigenous vulnerability to climate risk across the country and aligning adaptation efforts with the ongoing process of reconciliation. Developing a NAS that demonstrates this commitment would undoubtedly position Canada as a global leader on just resilience.

Indeed, the opportunities inherent in developing Canada's first-ever NAS are numerous and exciting. The NAS will be an important step towards consolidating the various investments the federal government has been making in climate risk management and crafting a unified vision and approach to preparing and protecting Canadians as they confront the accelerating impacts of climate change.



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Annex 1. Examples of Federal Support for Climate Change Adaptation

Ministry or Crown corporation	Initiative	Purpose	Funding
Infrastructure Canada	Disaster Mitigation and Adaptation Fund	Supports built and natural infrastructure projects that reduce risks from natural disasters and extreme weather events.	\$2 billion
Infrastructure Canada through the Federation of Canadian Municipalities	Municipalities for Climate Innovation Program	Supports municipalities to engage in adaptation planning and action at the community level.	\$75 million (2016–2021)
Infrastructure Canada through the National Research Council Canada	Climate-Resilient Buildings and Core Public Infrastructure Initiative	Leads capacity development in Canada’s construction industries to adapt to the increasing demands on built infrastructure attributed to climate change.	\$42.5 million (2016–2020)
Environment and Climate Change Canada	Canadian Centre for Climate Services	Provides credible, relevant, and timely climate information, data, and tools, as well as related training and support for diverse users.	\$107.9 million
Crown-Indigenous Relations and Northern Affairs Canada	First Nations Adapt	Provides funding to First Nations communities located below the 60th parallel to assess and respond to climate change impacts on community infrastructure and emergency management.	\$51 million (2016–2021)



Ministry or Crown corporation	Initiative	Purpose	Funding
Transport Canada	<u>Northern Transportation Adaptation Initiative Program</u>	Provides funding to help meet some of the challenges of climate change in Yukon, Northwest Territories, Nunavut, and communities in Nunavik and Nunatsiavut through grants for projects that develop new knowledge, tools, practices, education, and training related to managing the impacts of climate change on transportation systems.	\$3.735 million (2017–18 to 2020–21)
Natural Resources Canada	<u>Building Regional Adaptation Capacity and Expertise (BRACE) Program</u>	Focuses on building capacity in communities, the private sector, and organizations to apply adaptation knowledge and tools in their work.	\$18 million (2017–2022)
Public Health Agency of Canada	<u>Infectious Disease and Climate Change Fund</u>	Focuses on preparing for and protecting Canadians from climate-driven infectious diseases that are zoonotic, food-borne, or water-borne.	\$2 million annually (2017–2027)
Health Canada	<u>HealthADAPT program</u>	Supports the human health and well-being objectives of the PCF by increasing understanding of climate change impacts on health, identifying communities at risk, and supporting the development of adaptation plans.	\$3 million
Standards Council of Canada	<u>Standards to Support Resilience in Infrastructure Program</u>	Leads the development of standards and related guidance to safeguard infrastructure and communities from the impacts of climate change.	\$11.7 million (2016–2020)

Source: Climate Action Map

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Published by the International Institute for Sustainable Development

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