

# CLOSING CANADA'S ADAPTATION GAP

Key elements of a **National Adaptation Strategy**

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## INTRODUCTION

Canada is falling behind its peers on climate change adaptation, despite a growing understanding that climate change is driving the escalating severe weather events that have already resulted in dramatic physical, social, and economic impacts across the country. The ad hoc, reactive, and under-resourced approach to climate change adaptation of Canada's provincial and federal governments has left Canadians unprepared for and vulnerable to the impacts of climate change that are already happening, let alone the additional changes that we can expect. As evidenced by the recent wildfires and floods in B.C. alone, the costs of failing to adapt are far too large for this fragmented and reactive approach to be allowed to continue. The forthcoming National Adaptation Strategy (NAS) is a critical opportunity to start addressing Canada's adaptation gap and to align Canada's national strategy with best practices and lessons learned from peer countries that are leading the way in developing co-ordinated national plans for adaptation.

Crafting a robust NAS is no easy task. It requires making decisions about priorities and policy responses based on imperfect data and amidst uncertainty about the future; it requires addressing the root causes of vulnerability to climate impacts, which are complex and often controversial; and it requires breaking down silos and entrenched decision-making flows to improve co-ordination within and between different orders of government.

However, climate change adaptation is an issue of national interest and therefore should be a national priority. Climate change is already affecting and will continue to affect all parts of Canada, and the physical, social, and economic impacts are widespread and are ultimately borne



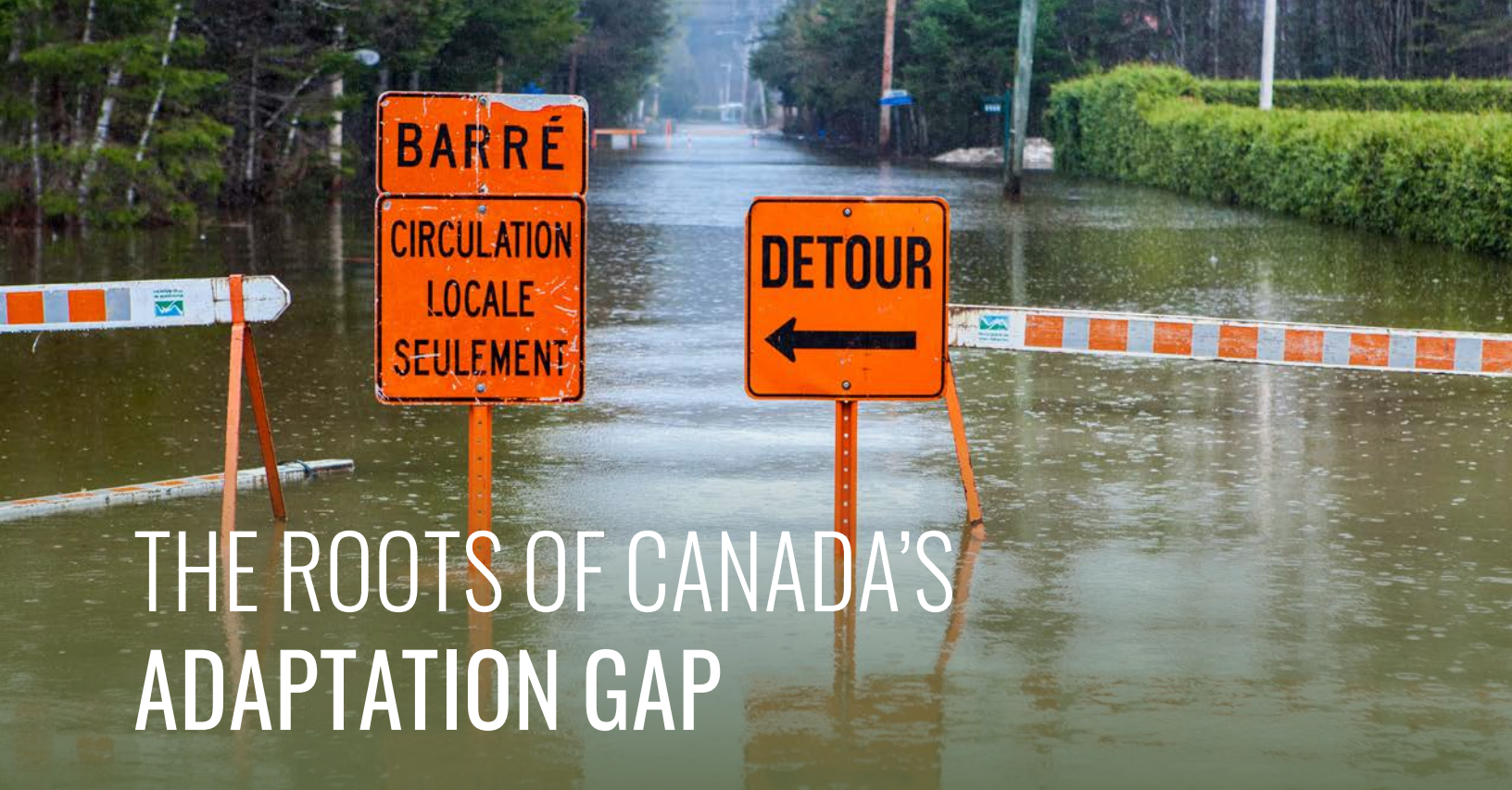
by all people in Canada. Many of the solutions are cross-jurisdictional, including the need to sustain the flow of goods across borders and build more resilient supply chains, deliver disaster preparedness and response, and protect critical infrastructure.

Climate change adaptation therefore requires extensive cross-jurisdictional and cross-sectoral co-operation, which only the federal government has the perspective, authority, and fiscal capacity to co-ordinate and direct. Peer nations have recognized this need for decades and are well advanced in national adaptation planning led by central governments—many are already on their second or third iterations of national adaptation strategies and plans (Hammill et al. 2021). Canada has an important opportunity to learn from their experience and “leapfrog” forward with the forthcoming NAS, but only if the strategy is focused on achieving clear and measurable outcomes on widely agreed national adaptation priorities. Once the strategy establishes specific shared outcomes, Canadian governments, the private sector, and non-government organizations can work within—but also collaborate across—their respective jurisdictions to achieve those outcomes and overcome barriers.

In support of the federal government’s ongoing efforts to develop Canada’s first-ever National Adaptation Strategy, this paper outlines key areas of focus for the remainder of the strategy development process. It does not attempt to provide a comprehensive list of all of the necessary characteristics of a robust NAS, but outlines critical elements of the strategy that require attention from this point forward.







# THE ROOTS OF CANADA'S ADAPTATION GAP

Even with ongoing global efforts to reduce greenhouse gas emissions, the effects of past emissions have already changed Canada's climate and have locked us into at least several more decades of escalating impacts. This change is already costing Canada dearly—the costs of weather-related disasters have increased substantially over the last ten years, from 1 per cent of GDP growth to 5-6 per cent of GDP growth, and vulnerability to climate impacts extends across many aspects of the economy (Sawyer et al. 2020). These analyses also show that the frequency and severity of weather-related disasters have increased steeply over the past number of decades, and the cost per disaster has ballooned: from an average of \$8.3 million per event in the 1970s to \$112 million in the 2010s, a 1,250 per cent increase.

The massive human and economic costs of more frequent and severe extreme weather were illustrated dramatically in British Columbia in 2021, as a deadly heat dome in June cost many hundreds of lives, forest fires in July destroyed entire communities, and unprecedented flooding in November cost billions of dollars in damage, resulting in major supply chain disruptions, property destruction, and many weeks of gas rationing. Events such as the B.C. disasters of 2021 clearly illustrate that Canada has a national adaptation gap—it is not prepared for the impacts of a warming and increasingly volatile climate. Critical infrastructure is unable to withstand unprecedented conditions, healthcare and public systems are not able to protect people during new crises, and emergency management and disaster recovery resources are inadequate.

Canada's national adaptation gap is in part the result of insufficient funding. For example, federal government funding for adaptation from 2017-2021 represented only 13 per cent of all climate change-related spending, with the largest single program—the \$2 billion Disaster Mitigation Adaptation Fund—massively oversubscribed. The \$10 billion reboot of the Canada Infrastructure Bank neglected any mention of resilience or adaptation. In British Columbia, of the \$1.2 billion CleanBC funding announced in the 2022 budget, only 1 per cent was dedicated to adaptation.



However, a lack of funding is only a part of—or perhaps a symptom of—broader barriers to progress on adaptation in Canada. These barriers include the following:

- 1. Lack of clarity on national adaptation goals and priorities:** Canada has never used a framework of explicit adaptation goals and priorities based on the most important climate risks, to drive decision-making. As a result, governments, communities, and other actors lack evidence-based alignment on the issues that need to be tackled first and the most urgent and important responses that are required. This lack of clarity on shared goals and priorities leaves Canada without collective focus in adaptation efforts.
- 2. Absence of concrete policy measures and actions:** Canada has lacked a comprehensive action plan that includes policy commitments to pursue top adaptation priorities across the country. Because of the absence of definitive policy commitments—beginning at the federal level—very little national-level action has taken place on adaptation priorities, apart from research and capacity-building initiatives and a handful of modest, narrowly scoped investments. The elements of a National Flood Action Plan announced in 2019 showed promise for catalyzing a national response to a key climate risk but have not been translated into concerted action or outcomes.
- 3. Decentralized and unco-ordinated governance:** Responsibility for adaptation has largely been devolved under the premise that adaptation is a matter for local action, and that senior governments—and particularly the federal government—have a relatively minor role. This has left local actors to create and implement adaptation policies often without the information, funding, expertise, or authority to do so effectively. Various orders of government have pursued disconnected adaptation efforts without reference to shared desired outcomes. This has also created an uneven playing field, as resources to adapt are often unequal between different provinces, regions, sectors, and communities.





- 4. Lack of progress tracking and accountability:** Canada currently lacks a mechanism to measure climate change risk and resilience at a national scale, making it impossible to understand the biggest adaptation gaps and priorities or the cumulative success of adaptation actions in addressing them. As a result, governments and other actors are not accountable for the outcomes of their adaptation actions and there is little feedback they can use to change course where actions are not successful.

The federal government has previously articulated a national perspective on climate change adaptation in the 2011 *Federal Adaptation Policy Framework* and the 2016 *Pan-Canadian Framework on Clean Growth and Climate Change*. However, while both highlighted the importance of adaptation as a national issue, they lacked clarity on the elements described above and thus limited the ability of the federal government to drive effective adaptation action across Canada and help close the national adaptation gap. In 2017 the Commissioner of the Environment and Sustainable Development noted specifically that the 2011 framework “does not set priorities or identify concrete actions with targets, timelines, and accountabilities” (Office of the Auditor General of Canada 2017). The Pan-Canadian Framework identified specific areas of adaptation focus for the federal government and provincial and territorial governments to pursue collaboratively, but still provided little detail with respect to concrete policies and actions, co-ordination, accountability, and progress tracking.

The forthcoming NAS cannot be merely an incremental amendment of the Federal Adaptation Policy Framework and Pan-Canadian Framework. It should make significant advances beyond these efforts and define a genuinely strategic framework—from setting priorities to measurement of progress—for addressing Canada’s adaptation gap.



# CRITICAL ELEMENTS OF A NATIONAL ADAPTATION STRATEGY

The federal government has indicated that the forthcoming NAS will outline a shared vision for resilience, identify key priorities for collaboration, and establish a framework for measuring progress (Government of Canada 2020). Beginning in the summer of 2021, the federal government sought input from stakeholders and experts and is now nearing completion of the first stage of the NAS, which has produced long-term goals and medium-term objectives for the five focal adaptation themes. The NAS development process is now at a critical juncture.

If the government is to be successful in overcoming the barriers articulated above and setting the foundations for effective action on Canada's adaptation priorities, the strategy development process should now ensure that the final NAS achieves the following:

1. **Set national adaptation priorities based on risk**, including identifying the top national climate change risks that will be the focus of the NAS and establishing specific and measurable adaptation goals and outcomes for each.
2. **Identify short-term policy priorities**, including outlining policies and actions that can begin to be implemented immediately, as well as a timeline for delivering a more comprehensive national adaptation plan to follow shortly after the NAS.
3. **Define improved adaptation governance processes**, including clearly articulating roles and responsibilities, improving co-ordination within and between governments, and creating mechanisms for internal accountability.
4. **Create a framework for tracking progress and enhancing accountability**, including measuring the outcomes of policy efforts against stated goals and objectives, using targets and indicators to measure success, and ensuring durability and transparency of the framework.

Each of these elements is discussed in further detail on the following pages.

## Set national goals and priorities based on risk

A crucial component of the NAS is the codification of national adaptation goals and priorities for addressing Canada's top climate change risks. The NAS cannot address every risk facing Canada from the changing climate and will inevitably fail to advance action on the most important adaptation priorities if it attempts to be all-inclusive.

Prioritizing national adaptation goals requires an understanding of current and potential future climate risks. In Canada this understanding is imperfect, but it is adequate for the task at hand: developing a national adaptation strategy without any further delay. While Canada lacks a comprehensive process for assessing national climate change risks, there is a solid foundation of knowledge upon which the NAS can build, including the national Emergency Management Strategy, provincial and territorial risk assessments, the Arctic and Northern Policy Framework, the Council of Canadian Academies Expert Panel report, Indigenous knowledge systems and climate change strategies, and the federal National Action Plan on Flooding.

The five focal themes the federal government has selected to guide development of the NAS—health and well-being, resilient infrastructure, thriving natural environment, strong and resilient economy, and disaster resilience and security—can accommodate discussion of virtually any climate change adaptation issue. However, they do not in themselves define risk-based national adaptation priorities. The NAS should utilize existing understanding of climate risks in Canada, supplemented by expert insight, to identify the top national risks on which the strategy will be focused, as follows:

- ▶ **First, the NAS should identify climate change risks of national significance**, where climate hazards that will continue to be exacerbated by climate change—including flooding, wildfire, heat, extreme storms, sea level rise and simultaneous or successive such hazards—could impact people, communities, the environment, and the economy at a nation-wide scale.
- ▶ **Second, the NAS should identify the top risks that will be the focus of the strategy, taking into account the scale of potential impact**, the likelihood of the risk being realized, and the feasibility and net benefits of an adaptation response.

These top risks should become the basis for the proposed NAS framework of 2050 goals and 2030 objectives. Goals corresponding to each risk can define a specific and measurable vision of success for adapting to that risk by 2050, in contrast to the high-level and imprecise goals that have emerged for the current NAS themes thus far. Each goal can be translated into 2030 outcomes, rather than objectives, that describe in specific and measurable terms what must be accomplished within the next decade to achieve the 2050 vision (see text box).



## Identify short-term policy priorities

The NAS will necessarily be broad in scope as part of its utility will be in establishing a general framework for prioritizing and co-ordinating adaptation efforts at the national level. While the NAS needs to include high-level, direction-setting elements, it cannot stop there. The urgency of scaling up adaptation efforts and addressing Canada's adaptation gap means that the strategy should also outline concrete policies and actions that can be implemented immediately to help achieve the thematic goals and corresponding outcomes.

However, the tight timelines for development of the NAS and the complexity of developing and implementing adaptation policies that will frequently involve multiple jurisdictions and orders of government means that further work will need to be done beyond the development of the NAS. Experience in other countries shows that a balance must be struck between the need for an NAS to outline immediate actions that address urgent issues, and the need to co-ordinate with other orders of government and other stakeholders to construct a more comprehensive national adaptation plan (Hammill et al. 2021). To strike this balance, the NAS should adopt a two-stage approach with respect to identifying concrete policy measures and corresponding implementation plans:

- **First, the NAS itself should identify concrete actions** that will be taken under the federal mandate, with a corresponding implementation plan and initial financial commitments (see text box). These actions can tackle needs that are pressing but can start to be addressed in the near term, creating some early successes and establishing a positive record on which to build. The policies and actions in the federal implementation plan should be concrete and measurable, accompanied by targets and metrics of success. This initial NAS implementation plan should cover the period 2023-2025 and can inform federal budgets over that period.





- **Second, the NAS should commit the federal government to leading the development of a comprehensive national adaptation plan,** based on more thorough and comprehensive interjurisdictional co-ordination with provincial and territorial governments, Indigenous governments, and other stakeholders, to be finalized by 2024. This plan should cover the period 2025-2030 and be the first of five sequential two-year plans, which will iterate towards achievement of the long term 2050 goals established in the strategy's framework. This timeline aligns with other strategies and plans integral to Canada's adaptation efforts, such as the Sendai Framework for Disaster Risk Reduction and Canada's Emergency Management Strategy, both of which run until 2030.

This two-stage process gives the federal government the time that is needed over the next two years to lay the foundations of a more comprehensive national adaptation plan, while providing some initial successes which the comprehensive plan can build on. This process could include a refined assessment of national climate change risks and adaptation priorities, a process for interjurisdictional co-ordination, and collaboration with Indigenous Peoples that is consistent with Canada's United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) commitments. By using a five-year plan review cycle, governments can review progress, adjust desired outcomes and update priority adaptation actions to reflect evolving context and conditions—similar to Canada's process for working towards net zero emissions.

To address both hazards and vulnerabilities, the actions in the initial federal implementation plan and in the comprehensive national adaptation plan should build both Canada's capacity to respond to extreme weather and climate shifts as they occur, as well as to address the systemic causes of what makes certain people, groups, and communities more vulnerable than others to the effects of climate change. In the case of the latter, it will be important to not only state the need to address those root causes, but to identify specific policies and actions that can be implemented immediately to start addressing systemic causes of vulnerability (see Box 1).



# CASE EXAMPLE: EXTREME HEAT PREPAREDNESS

The following example illustrates the types of goals, desired outcomes, and actions that should be defined in the NAS to provide clarity and focus for Canada's adaptation efforts, and to enable monitoring and evaluation of progress. Using the hypothetical example of a national adaptation priority that responds to the risks of increased exposure to extreme heat on human health and well-being, a goal-outcome-action path could be as follows:

**NATIONAL ADAPTATION PRIORITY: Protecting health and well-being from increased exposure to extreme heat.**

**TRANSFORMATIONAL GOAL: By 2050, heat-related death and illness in Canada are reduced by 90 per cent from current levels despite increased frequency of extreme heat events.**

This goal is inspirational and ambitious, defining a vision to which all people in Canada can subscribe. It is achievable, should governments and others successfully prepare for unprecedented extreme heat. It also contains a clear, measurable target that can be tracked using established health monitoring systems.

**DESIRED OUTCOME 1: By 2030, every community in Canada at risk of extreme heat will receive timely heat warnings and will have a heat response and adaptation plan in place.**

This example desired outcome describes a milestone necessary to make progress towards the transformational goal. It contains a clear and measurable target that can be supported by health data that is currently being collected. It is also conducive to deriving a set of key actions that need to be taken towards achieving the objective.

## ACTION 1:

The federal government will deploy or upgrade weather monitoring systems in all regions exposed to extreme heat to support local or regional heat health warning systems.

### TARGET:

- All extreme heat-exposed regions will have weather monitoring systems in place by 2025

This action illustrates how the federal government can take unilateral action to build Canada's response capacity to extreme weather and climate shifts.

## ACTION 2:

The federal government will provide funding and technical support for the development of community heat response and adaptation plans by regional and local governments and health authorities.

### TARGET:

- 50 per cent of communities in Canada exposed to extreme heat have heat response and adaptation plans in place by 2025

This action illustrates how the federal government can help build response capacity by working in collaboration with other orders of government through funding, knowledge sharing, and technical guidance.

## ACTION 3:

The federal government will fund research by local governments and health authorities to identify homes and buildings where vulnerable people are exposed to extreme indoor heat.

### TARGET:

- Vulnerable people will be identified in communities across all regions by 2025

This action shows how the federal government can help address a systemic cause of vulnerability by taking the first step of identifying vulnerable people and populations, which can subsequently be used to design programs to reduce their vulnerability.



## Define improved adaptation governance processes

As the effects of climate change cut across geography, society, and sectors of the economy, effective adaptation policy requires extensive co-operation across different policy areas and orders of government. To set the stage for more effective action to improve Canada's resilience to climate change, the NAS must remedy long-standing issues of decentralized, unco-ordinated, and fractured governance when it comes to adaptation. Improving governance at the national scale is critical to overcoming this challenge and for directing, co-ordinating, and resourcing adaptation measures that will primarily be deployed at provincial/territorial and local scales.

A review by the International Institute for Sustainable Development shows that most countries that prioritize adaptation have established a national law or strategy, which places the responsibility for co-ordinating adaptation at the national level and outlines the responsibilities of different orders of government (Hammill et al. 2021). This points to the need for Canada's NAS to clarify roles and responsibilities and help ensure that national adaptation priorities are addressed through co-ordinated action across different scales and jurisdictions.

The NAS should strike a balance between taking a cohesive national approach and supporting the development of adaptation strategies at provincial, territorial, regional, and local scales. It should clarify roles and responsibilities between actors within governments as well as between different orders of government, establish institutional architecture to co-ordinate and oversee adaptation efforts across the country, and create accountability mechanisms for reporting and feedback within government.

The role of the federal government will vary between and within priority areas, according to jurisdictional responsibilities. In some areas, the federal government will have primary jurisdiction and can take a leading role.

Examples of policy measures that can be driven by the federal government include:

- ▶ producing flood hazard mapping;
- ▶ establishing conditions for accessing federal funding for infrastructure projects; and
- ▶ developing national codes and standards.

In many areas, jurisdiction is shared, and adaptation policy will be developed and implemented in partnership with the provinces and territories. The federal government may contribute funding in areas where jurisdiction is primarily provincial or territorial, due to fiscal capacity constraints or inequalities in lower orders of government. In other cases, the federal government may play a convening or knowledge-brokering role.

A key consideration for the NAS in addition to conventional multi-level governance issues is the meaningful inclusion of Indigenous Peoples in decision-making. Completion and implementation of the NAS must be done in keeping with UNDRIP, the Calls to Action of the Truth and Reconciliation Commission, and other relevant pieces of legislation and legal rulings. Doing so will ensure that the NAS is responsive to the legacies of colonialism that increase the vulnerability of Indigenous Peoples to climate impacts.

# Create a framework for tracking progress and enhancing accountability<sup>1</sup>

Establishing a robust framework for measuring progress is foundational to improving governance over time and ensuring that the set of adaptation policies and actions defined in the NAS are having the intended effect of increasing Canada's resilience and reducing the impacts of climate change. Even in countries with relatively advanced adaptation strategies and plans, experience suggests that implementation of adaptation policy often tends to lag behind planning (Hammill et al. 2021). Monitoring and evaluation (M&E) frameworks are critical for ensuring that national adaptation planning drives policy implementation and assessing outcomes. Beyond holding decision-makers accountable, defining a robust M&E framework in the NAS will support ongoing learning and adaptive governance, and support decision-making that will necessarily evolve as the climate changes and new data is generated (Expert Panel 2018).

The government of Canada has already committed to including “a framework for measuring progress at the national level” as part of the NAS (Government of Canada 2020, 66). This is a positive step. To be most effective, this M&E framework should be comprehensive, use clear metrics of success, and be enduring and transparent.

## Comprehensiveness

The framework should measure adaptation outcomes as well as the status of policy implementation. The outcomes of adaptation policy should be assessed against the goals and objectives stated in the NAS. Measuring outcomes is more complex than simply assessing the status of policy implementation, but it provides a much more meaningful picture of whether the aggregate result of policies and actions is helping to achieve collective goals and objectives. The ability to assess outcomes will depend, to some extent, on the individual actions and objectives as well as the time horizon.

Assessing the status of policy implementation through measuring outputs is also important, as it is a relatively straightforward way of tracking whether actions are taking place as promised.

<sup>1</sup> The content in this section draws upon a forthcoming paper: Lesnikowski, Alex and Timo Leiter, *Forthcoming*. “Developing a monitoring and evaluation framework for Canada’s national adaptation strategy.” *Canadian Climate Institute*.





While simply measuring outputs is currently more common than assessing outcomes, leading jurisdictions are now seeking to update their M&E frameworks to better account for the effects that adaptation policy is having on their intended outcomes.

The M&E framework should apply to all actions for which the NAS identifies a role for the federal government, whether they lead, co-ordinate, or simply participate, and it should include the findings from sub-national M&E systems to create a more comprehensive national picture.

### ***Clear metrics of success***

What gets measured gets managed. Because Canada currently lacks agreed-upon targets and indicators of resilience and adaptation progress, governments cannot effectively track whether we are making progress towards priorities. Past attempts to establish targets and indicators have met with challenges, but those attempts lacked a framework to develop targets and measures within. With a better planning hierarchy set from the top by the NAS, it will be easier to establish targets and indicators to measure progress in implementation. The 2018 Expert Panel on Climate Change Adaptation and Resilience Results has already put forward 54 potential indicators, with 19 being tagged for further discussion (Expert Panel 2018). The federal government can build on the work of the expert panel to develop a suite of targets and indicators to help measure adaptation progress.

### ***Durability and transparency***

To the extent possible, the federal government should create an M&E system that is enduring over time. M&E commitments may sometimes lapse with a change in government or an update to strategy. To guard against this possibility, the federal government should consider establishing a legislated mandate that defines the purpose, institutional arrangements, and the type and frequency of reporting.

To create transparency for the public and to aid in accountability between government departments and different orders of government, the NAS should establish frequent internal and external reporting requirements that support ongoing improvement, communicated through multiple formats. If communicated clearly, this information can support continued improvements to the strategy and adaptive governance.





# SUMMARY

Previous efforts to establish a national framework for adaptation policy have fallen short of what is needed to execute adaptation at the scale and speed that is needed to ensure Canada's resilience and prosperity in the face of a changing climate. Previous attempts have failed to resolve the following key barriers to effective adaptation policy and action in Canada:

1. **Lack of clarity on national adaptation goals and priorities**
2. **Absence of concrete policy measures and actions**
3. **Decentralized and unco-ordinated governance**
4. **Lack of progress tracking and accountability**

In the forthcoming NAS, the federal government has an opportunity to address these barriers, crafting a strategy that can better protect people, infrastructure, and the economy from the increasing costs of climate change. But to achieve this outcome, the NAS must take a significant step forward from previous adaptation frameworks, as follows:

## 1. Set national adaptation goals and priorities based on risk

- a. Identify the top climate change risks facing Canada and corresponding national adaptation priorities, drawing on existing knowledge and expert insights; and
- b. Set long-term goals and medium-term desired outcomes in each priority area that are clear, specific, and measurable.

## 2. Identify short-term policy priorities

- a. Adopt a two-stage approach, balancing the need for immediate action with the co-ordination and consultation necessary for a comprehensive national plan;



- b. Identify concrete actions in the NAS that will be taken under the federal mandate, with a corresponding implementation plan and initial financial commitments:
  - i. The initial implementation plan should cover 2023-2025;
  - ii. Subsequent implementation plans should occur in five-year outcome-based sequences, starting with 2025-2030; and
  - iii. The policies and actions identified for implementation should be concrete and measurable, accompanied by targets and metrics of success;
- c. Commit to leading the development of a comprehensive national adaptation plan, based on more fulsome interjurisdictional co-ordination with provincial and territorial governments, Indigenous governments, and other stakeholders, to be finalized by 2024; and
- d. Build Canada's capacity to respond and mitigate the effects of specific extreme weather events as they occur and address the systemic causes of vulnerability.

### **3. Define improved adaptation governance**

- a. Clarify the roles and responsibilities between actors within governments as well as between different orders of government;
- b. Establish institutional architecture to co-ordinate and oversee adaptation efforts across the country;
- c. Create accountability mechanisms for reporting and feedback within government; and
- d. Ensure the meaningful inclusion of Indigenous Peoples in completion and implementation of the strategy.

### **4. Create a framework for tracking progress and enhancing accountability**

- a. Measure adaptation outcomes as well as the status of policy implementation;
- b. Apply the framework to all actions for which the NAS identifies a role for the federal government;
- c. Establish measurable targets and indicators;
- d. Consider a legislated reporting mandate; and
- e. Establish frequent internal and external reporting requirements.

There are other important components of the national adaptation response that should be detailed in the NAS, including connections to and alignment with other key policies and strategies, engaging the public and the business community, and managing and sharing climate adaptation knowledge. Additional foundational values that have not been explicitly addressed here should also drive development of the NAS, such as ensuring that gender equity and socio-economic inclusion are core aspects of climate adaptation policy in Canada (Hammill et al. 2021). Nonetheless, the NAS can only be successful in catalyzing the policy and action needed to fill Canada's adaptation gap if it meaningfully incorporates the critical elements described in this paper.

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