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Canada's Wildfire Challenge: Building Financial Resilience in a Changing Climate

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Key messages

- Climate driven forest fires are increasingly straining Canada's public finance systems.
- Municipalities and Indigenous communities face the greatest financial challenges.
- Proactive budgeting can improve financial resilience.
- Investing in prevention strategies reduces long term costs.
- Intergovernmental cooperation can ensure effective responses to wildfire crises.

Introduction

Public finance systems are increasingly strained by the need to respond to crises. Major events like the 2008 economic crisis and the COVID-19 pandemic have exposed vulnerabilities in government financial structures (Curristine et al., 2020, pp. 1-3). Climate driven forest fires present similar, if not greater, fiscal challenges for various levels of government in Canada.

Climate projections indicate that rising temperatures will lead to significant increases in both the area burned and wildfire suppression costs (Hope et al., 2016). In 2023 alone, Canada experienced its most destructive wildfire season on record, which led to over 235,000 evacuations (Prime Minister of Canada, 2024). Exacerbating financial challenges is a disconnect between academic research on public budgeting and the practical demands of crisis response, which limits the development of effective fiscal strategies. To manage increasingly complex emergencies, public finance systems must demonstrate resilience and be capable of rapid, coordinated responses (McDonald & Maher, 2024, pp. 9-10, 16).

This paper examines the adequacy of public finance in addressing forest fire crises, focusing on financial vulnerabilities at various levels of government, and Indigenous communities, while exploring potential improvements. Specifically, it argues that strengthening public finance resilience requires proactive budgeting, enhanced intergovernmental cooperation, and policy adaptations. Through its assessment, this paper aims to address the urgent need for public finance systems to adapt to the demands of wildland fire crises and related climate emergencies.

Background

Public finance systems are traditionally structured to handle predictable budgetary needs, but in times of crisis, they may be forced to adapt. During the COVID-19 pandemic, for example, countries were forced to reallocate resources and adjusted budgets to address immediate health and economic needs (Curristine et al., 2020, pp. 1-3, 6-7). However, public budgeting systems have changed little in over a century, often relying on fixed processes and allocation trends that may not meet modern demands (McDonald et al., 2024, p. 11). Recent crises have highlighted gaps in the financial readiness of governments to handle unexpected emergencies. Traditional

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budgeting frameworks often lack the flexibility required for rapid, substantial reallocations of resources (Mcdonald et al., 2024, p. 16).

Disaster response requires "unique roles, rarely applied procedures, specialized skills, rare and unavailable resources, or additional powers" (Kuban et al., 2001, p. 1). Forest fires are a particularly pressing example of how traditional public finance systems struggle under the demands of modern crises. The escalating severity and frequency of wildfires pose a significant threat to the health, safety, and stability of Canadian communities located within the wildland-urban interface, impacting over 12.3% of the Canadian population and nearly 80% of Indigenous communities (Weckman et al., 2023, p. 1).

Economic Cost of Forest Fires

The financial burden of wildfire protection has risen dramatically, with costs increasing by approximately $150 million each decade since the 1970s and surpassing $1 billion in six of the past ten years (Canadian Climate Institute, 2024), with costs ranging from $800 million to $1.4 billion (Natural Resources Canada, 2024). Climate projections indicate that rising temperatures will lead to significant increases in both the area burned and wildfire suppression costs, with estimates predicting up to a 119% increase in annual expenses by the century's end under high emissions scenarios (Hope et al., 2016). In addition, the health impacts of wildfire smoke are substantial; for instance, the 2023 wildfire season's smoke led to severe health costs, with Ontario incurring an estimated $1.2 billion in just one week due to increased hospital visits, emergencies, and premature deaths linked to poor air quality (Canadian Climate Institute, 2024).

The 2016 Fort McMurray wildfire, one of Canada's costliest natural disasters, resulted in approximately $9 billion in damages, covering property destruction, infrastructure loss, and the social costs of evacuating 85,000 people (Canadian Climate Institute, 2024). Wildfires also disrupt key economic sectors; for example, the 2017 British Columbia fires forced the temporary shutdown of 40 forestry companies, leading to economic losses and affecting forest dependent communities). As wildfires become more frequent and severe, property damage and rising insurance premiums contribute to increasing living costs. Climate related damages between 2015 and 2025 are projected to add approximately $700 annually to Canadian household expenses (Canadian Climate Institute, 2024).

Current Financial Vulnerabilities and Coordination Challenges

Disaster response primarily falls on municipalities, where local officials are legally mandated to prepare for crises. However, disasters often require coordinated, multi-jurisdictional responses beyond a single organization's capacity (Kuban et al., 2001, p. 1). Municipalities face significant fiscal challenges due to vertical fiscal imbalances within Canada's federal system. While the federal government collects more revenue than required for its jurisdictional responsibilities, local governments, constrained by provincial regulations, rely heavily on intergovernmental transfers and property taxes to fund essential services (Tellier, 2019, pp. 40-41). Financial constraints along with increased demand on emergency services, intensify local reliance on higher level funding, potentially leaving emergency response efforts underfunded and reliant on provincial and federal support for large scale crises (McDonald et al., 2024, p. 16).

Canada's decentralized fiscal system grants provinces considerable autonomy, with distinct responsibilities for public service delivery (Tellier, 2019, pp. 30-32, 40). Provinces bear significant fiscal responsibilities and have greater fiscal powers than municipal governments; however, their revenues can be volatile, especially in regions that depend on natural resources (Tellier, 2019, pp. 30-32). Further, significant fluctuations in fire activity from year to year make it difficult to predict future financial needs accurately (Natural Resources Canada, 2024). Provincial commitments to highly visible services, such as health, education, and public safety, constrain their flexibility, as these essential programs have strong public support and are thus challenging to cut (Jacques, 2023, pp. 6, 9-12). While the federal government enjoys greater fiscal flexibility, provincial governments face significant constraints due to their reliance on relatively low intergovernmental transfers (Jacques, 2023, pp. 14-16).

At the federal level, decision makers shape budgets around established constraints, risk frameworks, and stability-biased values, favoring continuity and predictability, which can reduce the flexibility required in adequate crisis response. Officials often default to familiar policies, potentially missing alternative approaches due to uncertainty and risk concerns (Atkinson & Mou, 2024, pp. 27, 31, 33-34). With greater fiscal capacity and fewer constraints, the federal government can adjust policies more easily than provinces (Jacques, 2023, pp. 5-6). Federal programs are often less politically visible than provincial programs, making budget cuts easier (Jacques, 2023, p. 12).

Coordination across government levels and agencies also poses considerable challenges during crises. Budget rigidities and limited flexibility in traditional frameworks can hinder rapid reallocation of resources during emergencies. In such cases, governments may encounter delays in adjusting budgets, which can limit immediate access to necessary funds for various agencies, impacting their ability to respond quickly (Curristine et al., 2020, pp. 2-3, 6-7). Moreover, differences in preparedness levels and fire response policies across agencies create inconsistencies in managing wildfire risks, resulting in gaps in resource availability and response capacity in vulnerable regions (Tymstra et al., 2020).

Indigenous communities face heightened financial vulnerabilities during forest fire emergencies, as they face limited resources and infrastructure deficits (Prime Minister of Canada, 2024). Many of these communities lack adequate funding for comprehensive wildfire response plans. Most financial resources that are available are directed toward immediate response rather than proactive preparedness and prevention measures. This funding shortfall leaves Indigenous communities more dependent on higher level government aid, with gaps in coordination and often outdated plans that increase financial and safety risks during crises (Weckman et al., 2023, pp. 4, 7-8).

Practical Solutions for Strengthening Financial Resilience

Proactive Budgeting

To proactively address wildfire risks, governments can establish or expand dedicated response funds to address immediate financial needs in times of crisis. Drawing on models from Pacific Island countries, where contingency funds are included in annual budgets for disasters, these funds could enhance the capacity for swift and effective responses (Curristine et al., 2020, p. 7). Additionally, incorporating Indigenous traditional knowledge into proactive budgeting can help to ensure solutions are culturally relevant and locally effective. Public finance systems could allocate resources for Indigenous led strategies, such as controlled burns, fire monitoring programs, and environmental conservation initiatives, which provide long term resilience to wildfire risks (Rodríguez et al., 2023).

Further, proactively investing in fire resistant infrastructure has the potential to reduce wildfire damage and associated recovery costs. Prudent land use planning can minimize development in high-risk areas and promote sustainable forest management practices, reducing the financial and environmental toll of wildfires (Canadian Climate Institute, 2024). Evidence shows that investments in prevention and preparedness consistently offer higher returns than reactive response efforts (Tymstra et al., 2020).

Intergovernmental Cooperation

As disasters often require a multi-organizational and multi-jurisdictional response effort, effective coordination is paramount (Kuban et al., 2001, p. 1). Unified command structures, such as the Incident Command System, should be employed to improve the efficiency of resource allocation and communication during emergencies. These systems prevent resource mismanagement by establishing clear roles and integrated communication channels across multiple government levels and agencies (Kuban et al., 2001, p. 2-3). Failure to achieve such cooperation can lead to disjointed operational tasking and mismanagement of scarce resources, ultimately increasing response costs (Kuban et al., 2001, p. 1).

Further, addressing fiscal challenges faced by municipalities can strengthen their capacity to respond to emergencies. Improving financial preparedness and intergovernmental cooperation

can help municipalities better navigate the fiscal strain of disasters (McDonald et al., 2024, p. 16). Governments at all levels can strengthen collaboration through resource sharing agreements and integrated planning processes. Expanding agreements such as the Mutual Aid Resource Sharing initiative, which pools resources across jurisdictions can assist wildfire response. By incorporating international partnerships governments can also help ensure greater adaptability and access to resources during surges in wildfire activity (Tymstra et al., 2020).

In Indigenous contexts, governments should prioritize engaging with and supporting Indigenous communities. Financial support for fire monitoring programs and organizational partnerships can help communities gain the capacity and autonomy to implement culturally appropriate wildfire strategies. Further, governments should support dialogues that respect Indigenous agency and cultural values (Rodríguez et al., 2023).

Finally, building political and public consensus allows governments to address both fiscal priorities and emergency response needs (Curristine et al., 2020, p. 3). Early communication between budget authorities and ministries helps match wildfire management priorities with available fiscal resources. Engaging with government bodies and community groups early in the process can also build public support for proposed policies and allocate an adequate budget for crisis response (Curristine et al., 2020, pp. 2-3, 5).

Policy Adaptations

Implementing a risk-based response strategy for wildfire policies improves efficiency by directing resources to areas of greatest need. This strategy not only enhances efficiency by focusing efforts on critical risks but also allows low priority fires to play their natural ecological role, mitigating the potential for more destructive fires in the future. However, consistent application and investment in decision support tools are needed to maximize the benefits of this approach (Tymstra et al., 2020). Saskatchewan's provincial government has exemplified this method through its wildfire frameworks, which incorporate clear performance metrics, strategic planning, and accountability mechanisms. This framework guides governments in making evidence-based and transparent decisions by utilizing new scientific insights and operational wisdom. By prioritizing measurable outcomes, wildfire management strategies can adapt to challenges like climate change while maintaining financial resilience (Tymstra et al., 2020).

Future policy adaptations should continue to strengthen equitable funding formulas that address the higher costs of delivering fire protection services in remote Indigenous communities. While existing investments in firefighting equipment, communication systems, and training are underway by the Canadian government, additional tailored efforts are necessary to fully address the unique challenges these communities face. Enhanced and sustained funding will enable better protection of lives and a reduction in long term recovery costs, particularly as climate change exacerbates fire risks (Indigenous Services Canada, 2024).

Flexible budget structures, including rapid, mid-year, adjustments such as temporarily increasing the limits for virements and supplementary budgets, can assist in allocating sufficient resources during a crisis (Curristine et al., 2020, 7-8). Further, suspending balanced budget requirements, as successfully implemented by British Columbia and Manitoba during the COVID-19 pandemic, enables governments to allocate sufficient resources to wildfire emergencies without compromising long term fiscal credibility (Atkinson & Mou, 2023, pp. 123-125).

Conclusion

Canada's public finance system faces significant challenges in addressing the growing demands of climate driven forest fires. Budgetary constraints, fiscal imbalances, and inconsistent coordination across government levels hinder timely and effective responses. Municipalities often lack the resources to manage crises independently, while Indigenous communities face additional vulnerabilities due to funding gaps and limited support for culturally relevant prevention strategies.

Strengthening financial resilience to climate driven forest fires requires proactive budgeting through dedicated response funds, investment in prevention strategies like prescribed burns, and

the integration of Indigenous traditional knowledge. Enhanced intergovernmental cooperation, including resource sharing agreements and unified command structures, can improve coordination and efficiency across all levels of government. Flexible budget frameworks and risk-based policy approaches ensure financial resources are allocated effectively. By acting decisively, Canada can build a more robust financial system capable of safeguarding lives, communities, and ecosystems in an era of increasing climate emergencies.

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