Catalogue of Fiscal Tools to Advance Adaptation

Primer
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Local Governments for Sustainability
Les gouvernements locaux pour le développement durable
CANADA

Content

About This Resource

The *Catalogue of Fiscal Tools to Advance Adaptation* examines how municipalities can use and optimize existing fiscal tools to support climate adaptation and climate-resilient infrastructure. It includes a series of individual briefs that:

- Explore how specific tools can be used;
- Assess their strengths and limitations through a common analytical framework; and
- Highlight examples of how they have been applied in practice.

This primer serves as an introduction and provides context for the briefs. Together, the primer and the briefs make up a catalogue designed to help municipalities find fiscal tools best suited to their contexts.

The primer and the briefs are available online at ICLEICanada.org/project/fiscal-tools-catalogue/

What this resource is:

- A starting point for inspiration and decision-making, helping municipalities explore options to advance climate adaptation based on their context and priorities;
- A summary of practical fiscal tools that municipalities can use to fund and finance climate adaptation and resilience projects;
- A resource that distills complex fiscal tools into accessible briefs, highlighting their purpose, relevance to advancing adaptation, and examples from municipalities that have already used them; and
- A guide that helps municipal practitioners understand how these measures work, make informed decisions about their potential application, and guide them in their implementation, if applicable.

What this resource is not:

- A detailed business case or cost-benefit analysis for each fiscal tool;
- A substitute for professional financial, legal, or engineering advice on project design and implementation; or
- A comprehensive guide to every possible fiscal tool; rather, it highlights those most relevant to Canadian municipalities.

Who this resource is designed for:

- Municipal staff and elected officials seeking practical options to advance climate adaptation;
- Finance and planning teams exploring innovative funding mechanisms; and
- Policymakers looking for accessible entry points into the world of climate adaptation finance.

Acknowledgements

The *Catalogue of Fiscal Tools to Advance Adaptation* was developed through the Economic Tools to Advance Adaptation (ETAA) project. ETAA is a project led by ICLEI Canada with guidance from a Steering Committee and financial support from Natural Resources Canada's Climate Change Adaptation Program.

We respectfully acknowledge that ICLEI Canada's work happens across Turtle Island which has traditionally been and is home to many diverse First Nations, Inuit, and Métis peoples since time immemorial. We recognize that reconciliation is a fundamental component to building net-zero resilient communities, and we endeavour to listen to and learn from Indigenous Peoples on an ongoing basis in the process of our work.

Recommended Citation for the Catalogue

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About ICLEI Canada

ICLEI Canada is part of a global network working to achieve tangible sustainability results through cumulative local actions. We drive local action and influence policy for low-emission, nature-based, equitable, resilient, and circular development. Our members and team of experts work together through peer exchange, partnerships, and capacity building to create systemic change for urban sustainability. The ICLEI Canada team provides a wide range of services for local, provincial, and federal governments in support of developing sustainable, climate ready communities. This support includes but is not limited to adaptation and resilience planning, energy and emissions planning, and capacity building.

About the ETAA Project

The ETAA project is a national initiative designed to empower municipalities and their partners to better assess and respond to climate change impacts through the use of economic tools and resources. Through the ETAA project, participating municipalities, stakeholders, and industry experts are collaboratively working on a series of activities designed to test existing economic tools and instruments, develop knowledge in applying these tools, identify gaps in knowledge and tools, and scope out new solutions to address these gaps.

With expert guidance from leaders in the field of adaptation and direct support from ICLEI Canada, participating municipalities are applying innovative tools—such as the Cost of Doing Nothing (CODN) toolbox or the Net-Zero Action Research Partnership Climate-Related Financial Disclosure Guide—tailored to climate hazards and risks specific to their communities. Ultimately, this collaboration is helping municipalities gain a better understanding of the financial consequences of climate change, make proactive data-driven decisions, and strengthen their ability to build resilience.

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Introduction

Canada's climate is rapidly changing. Communities across the country are facing rising sea levels and higher temperatures, as well as more frequent and intense weather events such as heatwaves, wildfires, and floods. These impacts are threatening the infrastructure we rely on to live, work, and play. Research estimates $5.3 billion[1] annual investment in municipal infrastructure and local measures is needed in order to adapt to climate change.

Where will that money come from? To address this question, first we asked how are municipalities currently funding infrastructure? Second and more importantly, how could the mechanisms through which municipalities currently fund and finance infrastructure be optimized to advance climate adaptation? By no means can municipalities shoulder the responsibility for the full investment needed to prepare infrastructure for a changing climate—this will be cost shared by all orders of government and the private sector.

The need to optimize fiscal tools reflect a broader national concern. In the Canadian Infrastructure Council's report, *What We Heard: Planning for Canada's first National Infrastructure Assessment*, participants pointed out a fiscal imbalance, particularly the financial levers available at municipal or regional levels.[2]

"While municipalities and local governments are responsible for building and maintaining roughly 60% of Canada's core public infrastructure, they have access to a limited share of public revenue. In many jurisdictions, this constrains their ability to plan proactively, absorb financial risks and incur debt to finance long-term infrastructure investments. As a result, many communities rely on property taxes and development charges, which can make the business case for constructing new housing difficult and, in some cases, unfeasible." [2]

Moreover, as municipal finance experts have observed, the current fiscal framework is outdated and increasingly strained. In *Reflections on Municipal Finance over Two Decades and Thoughts for the Future*, Enid Slack describes that while Canadian municipalities are fiscally sustainable, their municipal infrastructure assets are deteriorating, and the quality of services is declining.[3] "Municipalities need access to other revenue sources, such as income and sales taxes, because the foundations of municipal finance, which date back to the Baldwin Act of 1849, no longer fit today's circumstances."[3]

Using Fiscal Tools to Advance Adaptation

Through this Catalogue, we aim to help municipalities optimize the use of the fiscal tools they have at their disposal. This involves more than matching old tools to new challenges—it's about fundamentally re-imagining how traditional fiscal tools can be leveraged for climate adaptation. When applied through a resilience lens, familiar instruments like reserve funds, user fees, and debt can be structured to reduce long-term climate risk and support co-benefits.

Fiscal Tool Categories

As creatures of the provinces and territories, municipalities across Canada have similar but sometimes diverging fiscal tools through which to fund and finance infrastructure maintenance, renewal, and upgrades. Most often, some combinations of the seven categories of fiscal tools listed in Table 1 are used.

Category	Description	Examples
Intergovernmental Transfers and Grants	Financial resources provided by other orders of government or a third party to support municipal programs and services. Grants to local governments are either conditional (restricted to a specific purpose) or unconditional (usable at the recipient's discretion).	• Federal Transfers and Grants • Provincial and Territorial Transfers and Grants
Taxation	Policies and bylaws that enable municipalities to either tax or forego tax revenue to support policy objectives.	• Climate Action-Related Taxation • Vacant and Underused Property Taxes
Land Value Capture	Policies that enable municipalities to recover and reinvest increases in land value that results from public investments or other governmental actions.	• Local Improvement Charge (LIC) • Property Tax Incentives for Conservation • Revitalization Tax Exemptions (RTEs) • Tax Increment Financing (TIF) • Density Bonus
Debt	Borrowed money to pay for large, long-term projects that would be difficult to finance solely through current revenues.	• Energy Efficiency Loans • Energy Service Performance Contracts (ESPCs) • General Obligation Bonds • Green or Climate Bonds
Partnerships	Partnerships are collaborative arrangements where municipalities work with other governments, private companies, or community co-operatives to share resources, expertise, and investment for delivering climate-resilient infrastructure and services.	• Co-operatives (Co-ops) • Public Private Partnerships • Group Purchasing Organizations (GPOs)
User Fees and Regulatory Charges	Charges imposed by municipalities for specific services or activities, paid by the individuals or groups who benefit from them.	• Congestion Charges • Fees for Solid Waste Collection and Disposal • Stormwater Fees • Water and Wastewater Fees • Development Cost Charges • Regulatory Charges

Table 1. Overview of municipal fiscal tool categories.

Category	Description	Examples
Reserve Funds	Savings that a municipality sets aside to cover future expenses, provide financial flexibility, and reduce the need for long-term borrowing or imposing sudden tax increases on taxpayers. Reserve funds are either obligatory (legally required and restricted to prescribed uses) or discretionary (voluntarily set aside by council for future projects or contingencies).	• Tax Rate Stabilization Reserve Funds • Water, Wastewater & Stormwater Reserve Funds
Other	Additional tools, available only in some jurisdictions.	• Revolving Loan Funds (RLFs) • Transfer of Development Rights

Table 1. continued.

Assessment Criteria

The briefs in the *Catalogue of Fiscal Tools to Advance Adaptation* examine promising examples within each of the seven main categories of fiscal tools, and how these could be optimized to advance climate adaptation. Each brief explores the assessment criteria listed in Table 2, including accessibility, feasibility, risk management, and the potential for scalability. They also highlight interesting case studies to illustrate how municipalities across Canada and internationally are using these models to build more climate-resilient infrastructure. In addition, each brief includes a standardized evaluation matrix which applies a common analytical framework across six criteria, and a best use context identifying the municipal conditions under which the tool is most effective.

Assessment Criteria	Description
Examples	Examples of the fiscal tools used by municipalities in Canada or internationally, exploring how they were implemented and how they achieved the desired outcome.
Mechanism Description	Refers to what the fiscal tool is, including its key components, its general method for raising money, and the main objectives of the mechanism.
Relevance to Advancing Adaptation	Refers to the degree in which the fiscal tool is successful at advancing adaptation in municipalities.
Accessibility	Refers to the availability of the program or fiscal tool, including its jurisdictional or governmental constraints, and how municipalities are able to apply to/use the program (in terms of grants and funds).
Feasibility	Refers to the ease or probability of use of the fiscal tool, especially concerning the political, economic, and social likelihood of successful implementation.
Risk	Refers to the possibility of loss or any negative occurrence from applying the fiscal tool.
Scalability	Refers to the capacity of the fiscal tool or program to expand in size or scale. Can the program provide financing or funding for an extended period of time? Can the program grow to provide more financing or funding for the city? Does the tool generate a dedicated revenue stream that could enable scaling through private leverage?
Evaluation Matrix	Provides a standardized, comparative assessment of each tool. Each evaluation applies a common analytical framework to assess the relative suitability of municipal fiscal instruments for financing climate adaptation. The framework evaluates tools across six criteria to reflect the multidimensional trade-offs inherent in policy instrument design.
Best Use Context	Captures the municipal conditions under which the tool is most effective, excluding municipal size where that is already addressed separately, and highlighting factors such as developmental pressures, administrative capacity, fiscal flexibility, climate risk targeting, or enabling legislation.

Table 2. Fiscal tool brief assessment criteria.

A Work in Progress

This catalogue does not cover every fiscal tool available to Canadian municipalities. Other tools, including the Canopy Tax, the Floor Area Ratio Tax, and the Unconditional Transfers, were identified as relevant to climate adaptation finance but fell outside the scope of this edition. As municipal experience with these tools grows across Canadian jurisdictions, they may warrant inclusion in future updates.

Looking Forward: Mobilizing Private Capital

Closing the $5.3 billion annual adaptation investment gap will require more than public and concessionary funding alone. Institutional investors, insurers, and pension funds hold [10] significant pools of long-term capital that is, in principle, well suited to finance the long-lived nature of climate resilient infrastructure. In practice, however, these investors require predictable cashflows, quantifiable risk-return profiles, and investable deal structures—features that adaptation projects have historically lacked.

Unlike mitigation assets, like renewable energy or carbon capture programs, adaptation investments, such as flood barriers, stormwater systems, and natural infrastructure, rarely generate direct revenues. Their economic value is instead realized through avoided losses, reduced property damages, lower insurance claims and premiums, preserved tax base values, and uninterrupted community services. There is no shortage of need, or shortage of potential capital, but there is a gap in the financial architecture connecting the two.

This is where municipal fiscal tools become essential. Revenue mechanisms such as local improvement charges, stormwater fees, and user-pay models can transform adaptation projects from underfunded public projects into privately financeable investments by defining specific cash flows for specific assets. When structured into a blended capital stack (Figure 1) where public grants and concessionary funds absorb first loss or earlier stage risk, and private capital provides the leverage and scaling (if public funding is insufficient), these fiscal tools serve as the enabling layer that makes private capital participation viable. The fiscal tools examined in this catalogue are not only instruments for raising municipal revenues—they are also the building blocks of structures that can mobilize the private sector capital that Canada's adaptation challenge demands.

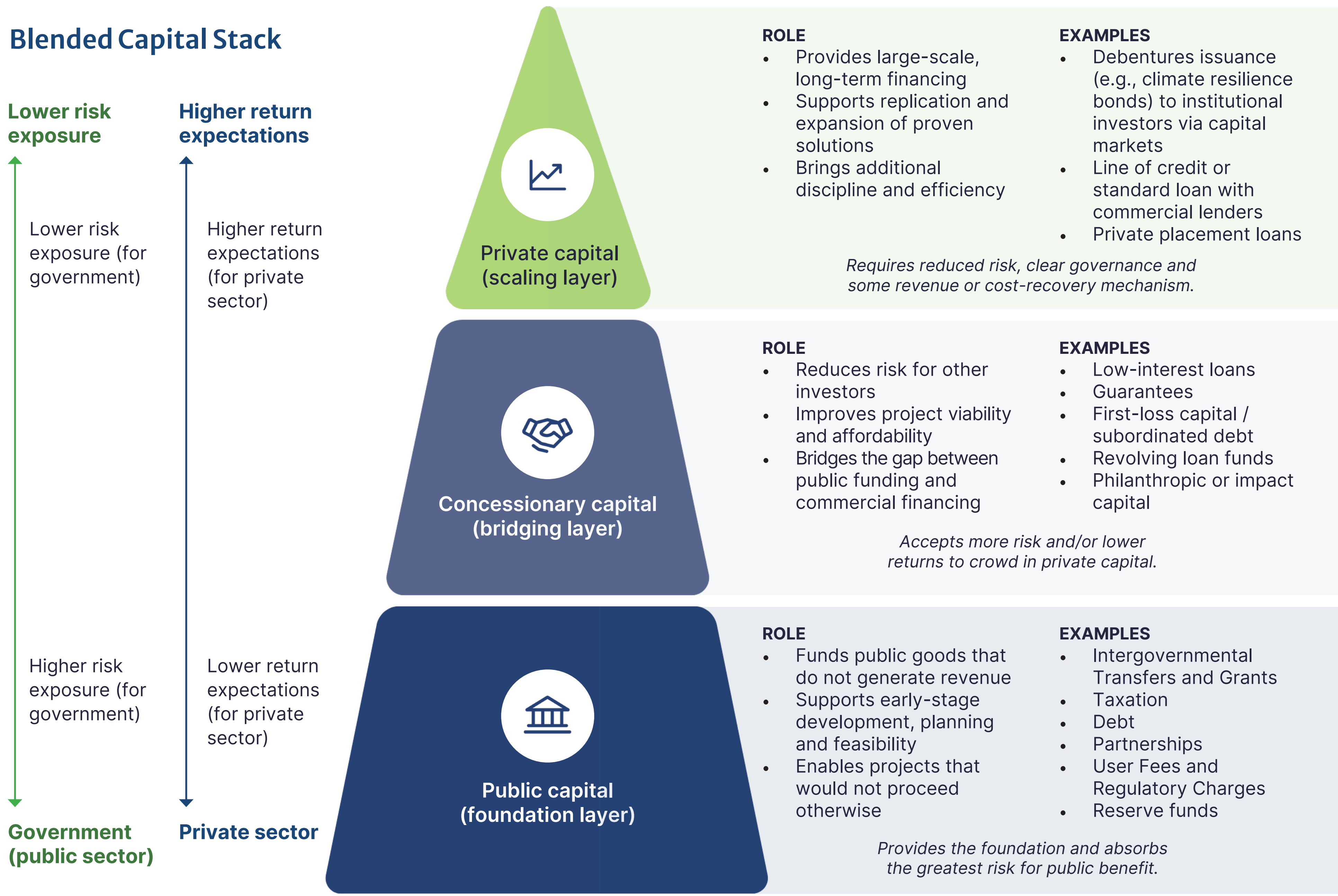

Figure 1. Adaptation projects often deliver public benefits and avoid future losses, but they rarely generate direct revenue to date. A blended capital stack brings together public funding, concessionary capital, and private capital where each layer plays a distinct role to make adaptation projects possible and investable.

Download the Fiscal Tool Briefs

A series of individual briefs that accompany this primer. Together, the primer and the briefs make up a catalogue designed to help municipalities find fiscal tools best suited to their contexts. Download the briefs to explore how specific tools can be used, assess their strengths and limitations through a common analytical framework, and highlight examples of how they have been applied in practice.

Visit ICLEICanada.org/project/fiscal-tools-catalogue/.

References

[1.] Insurance Bureau of Canada, & Federation of Canadian Municipalities. (2020). *Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level* https://fcm.ca/en/resources/investing-in-canadas-future

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