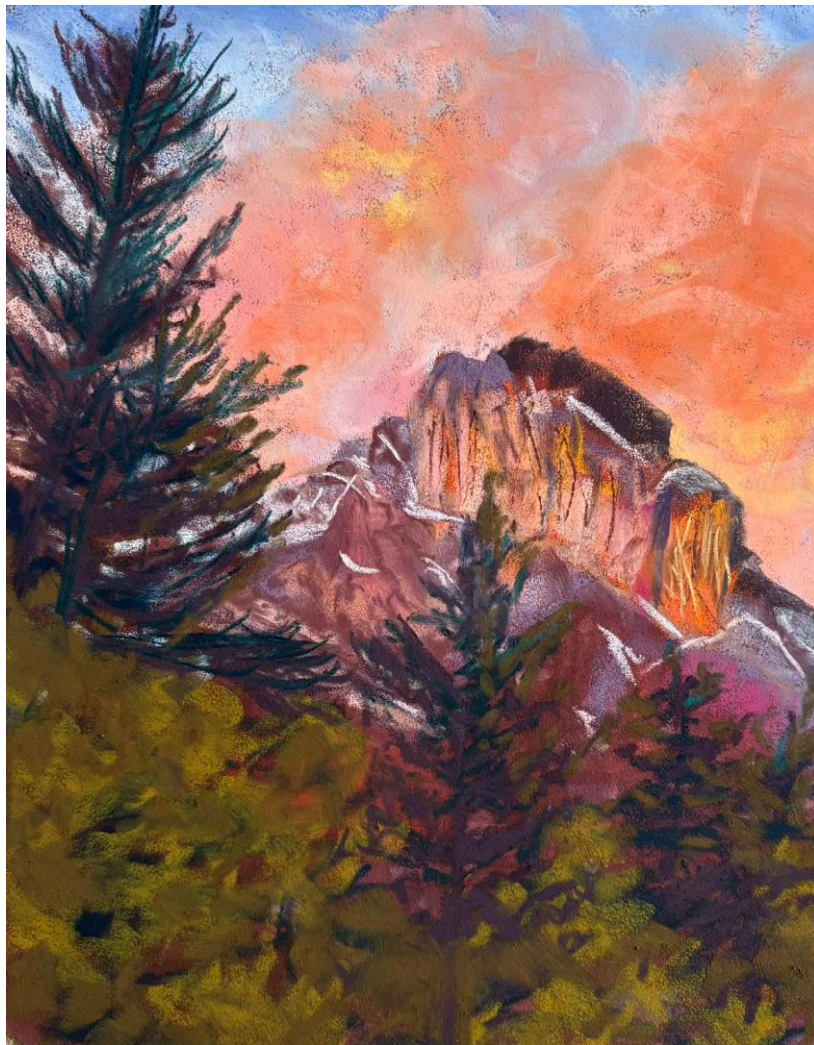




Governing Within Limits: A Planetary Health Agenda for Canada

A Briefing for Parliamentarians and Senior Decision-Makers

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Awakening Day by Carol Wigglesworth

This document has been prepared by the Office of the Honourable Rosa Galvez as a companion text to the Planetary Health on the Hill Roundtable held April 15th, 2026.

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Cover Art: *Awakening Day* (soft pastel on Pastelmat paper). 2025. Original photo taken in early morning at Saskatchewan River Crossing, Banff National Park, Alberta by the artist, Carol Wigglesworth. E-mail: carol.wigglesworth1@gmail.com.

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Abstract

Society must operate within the bounds of the natural world. Indeed, the multiple interconnected cascading crises that Canadians face today, including affordability, health, biodiversity loss, pollution, and climate change, are symptoms of a single structural problem: an economic system that exceeds the constraints of Earth's systems and fails to account for the contributions of ecosystem services. Therefore, it severely underprices risk. Gross domestic product (GDP) measures the flow of money through the economy and not wealth itself, underappreciating natural capital, externalities, and the wellbeing of vulnerable populations and future generations. Health, equity, and resilience are not metrics measured by GDP. Canada has the necessary tools to transition to an economic model that operates within planetary bounds. In fact, the transition to a low-carbon economy is already mandated by law in the *Canadian Net-Zero Emissions Accountability Act*, while the Quality of Life Framework has been implemented in the federal budgeting process since 2021. Transitioning to a low-carbon economy is an economic opportunity and a comprehensive strategy for human wellbeing. Further, protecting nature ensures environmental stability and ecosystem resilience which translates to stable economies and healthy populations. Consequently, policy must drive sustainable competitiveness. These policies might include the integration of planetary limits into budgeting and the adoption of wellbeing indicators, mandated disclosure of climate risk within the financial sector, the phase out of inefficient subsidies, investment in

resilient infrastructure, legislation that advances a circular economy, and alignment of federal procurement with national resilience. Ultimately, nation building must be synonymous with building resilience.

Introduction

All governance, including fiscal, economic, and social policy, must operate within the limitations imposed by the principles governing natural phenomena. This is because the laws of nature cannot be changed. Therefore, policy debate must exist inside the limits of Earth's systems. This is not a matter of choice. This is not about ideological or abstract thinking, but a tangible evidence-based reality. This is a matter of economic stability, population wellbeing, fiscal responsibility, and Canadian competitiveness and innovation.

When environmental, social, and economic crises are viewed as separate issues, policy solutions are siloed and often fail to address the root cause. The crises we face today are not separate crises but interconnected symptoms of exceeding planetary limits. They are symptoms of a single structural problem: an economic system designed to exceed the constraints of Earth's systems.

Our current economic model is failing because it uses gross domestic product (GDP) as a measure of wealth. However, GDP measures the flow of money through the economy and not wealth itself. It ignores both natural capital and social capital and is based on the false assumption that infinite growth is possible on a finite planet.

We are at a tipping point in human history. Earth system risks are rising. Geopolitics are unstable. However, we have also reached

positive tipping points: in clean energy and in our growing recognition that prosperity, security, and health depend on stable ecological systems and strong social foundations.

To address the multiple cascading crises before us, including, biodiversity loss, pollution, climate change, health, and affordability, capital flows need to be directed towards renewable and clean energy projects, restoration of nature, (mitigation) and towards community-led resilience building initiatives (adaptation).

There is still time to set Canada on the path to ecologically and socially sustainable

prosperity. Indeed, we can lead the global transition. However, we must recognize natural laws as guardrails within which governance must operate. Policy must drive sustainable competitiveness which can only be achieved through efficient governance that recognizes natural capital, social capital, and intellectual capital, as well as resource efficiency, as part of a holistic approach to economic sustainability (Figure 1). Together, these six pillars can be used to define national performance and outlook.¹ Measuring what drives sustainable competitiveness is a comprehensive alternative to gross domestic product.²



Figure 1: Sustainable Competitiveness. Source: [SoAbility](#), licensed under CC BY-NC-SA 4.0²

Part I: The Cost of Global Warming to Canadians and Governments

Extreme heat, flooding, wildfire, and wildfire smoke already impose substantial economic and health costs on Canadians, Indigenous communities (Box 1), and all levels of government (Table 1).

Box 1: Indigenous and Northern Impacts of Global Warming⁴

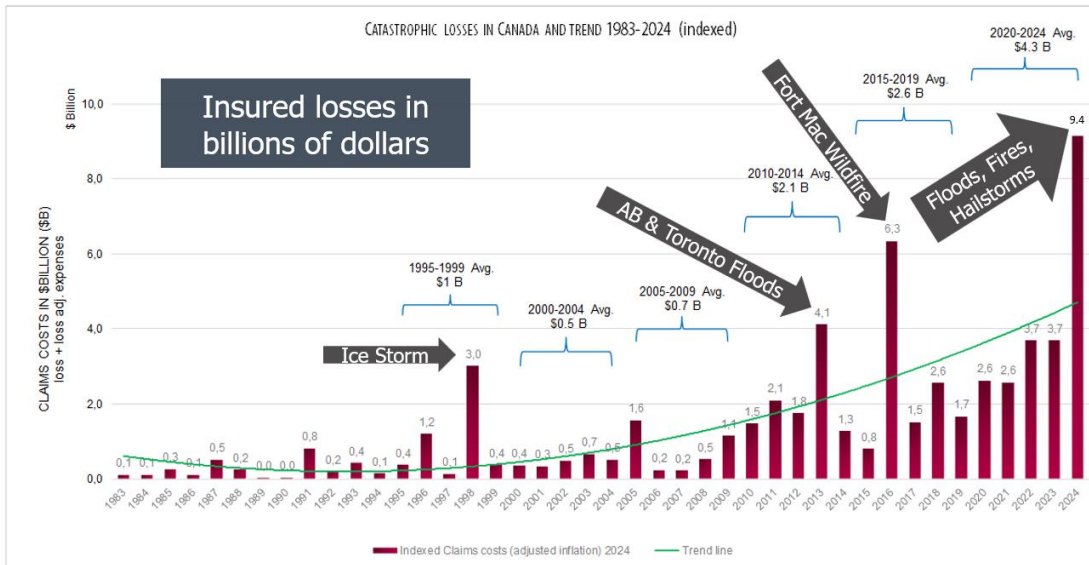
- Loss of traditional hunting and fishing grounds
- Permafrost thaw damaging homes, roads, and infrastructure
- Disruption of seasonal calendars and traditional knowledge systems
- Disproportionate health burden in northern and remote communities

Table 1: Impacts of Wildfire, Wildfire Smoke, Extreme Heat, and Flooding in Canada

Risk	Health and Economic Cost
Wildfire	<ul style="list-style-type: none"> • In 2016 total insured losses from the Fort McMurray wildfire totalled \$6.5B⁵ • In 2023 insured losses from three wildfires that burned across Canada totalled nearly \$1B.⁶ • Insured losses from the 2024 Jasper wildfire are estimated to be about \$1.3B^{7,8}
Wildfire Smoke	<ul style="list-style-type: none"> • Responsible for emergency hospitalizations across BC, AB, ON, & QC • In June 2023 a single week of wildfire smoke was estimated to have cost Ontario over \$1.2B in health impacts including premature deaths, increased hospital visits, and health emergencies.⁹ • Smoke from larger & more frequent wildfires is exacerbating asthma across parts of Western Canada¹⁰
Extreme Heat	<ul style="list-style-type: none"> • Heat domes in BC (2021) caused 619 excess deaths in one week — the deadliest weather event in Canadian history¹¹ • In Quebec high temperatures have been associated with 470 deaths, 225 hospitalizations, 36,000 emergency department visits, 7,200 ambulance transports, and 15,000 calls to Info-Santé per year¹²
Flooding	<ul style="list-style-type: none"> • The most frequent and most damaging natural disaster in Canada is flooding.¹³ • Between 2014 and 2023 catastrophic insured losses from flooding averaged almost \$800 million per year.¹⁴ • Currently flood insurance coverage is only available in low- or medium-risk areas which leaves homeowners or governments responsible for a large part of the cost of residential property losses.¹⁵

The cost of extreme weather and wildfire continues to trend upward. The most recent data available from the Insurance Bureau of

Canada indicates that total *insured losses due to severe weather were \$9.4 billion (adjusted to 2025 dollars) in 2024* (Figure 2).¹⁶



Sources: 1983-2007: Insurance Bureau of Canada, PCS Canada, Swiss Re, Deloitte; 2008-2024: CatIQ, IBC, 2024; amounts in 2024 dollars.

Source: Insurance Bureau of Canada, CatIQ

Figure 2: Catastrophic Losses in Canada and the Trend from 1983 to 2024. Adapted from: Insurance Bureau of Canada (2024).^{17,18}

Part II: Understanding the Economy-Environment Nexus

Humans are among the most significant influences shaping the planet.¹⁹ Therefore, ensuring all species, including humans, can thrive requires a deep understanding of the multitude of ways people interact with the environment, and ultimately affect change on Earth systems.²⁰

The planetary boundaries framework underscores the rising risks associated with human pressure on nine critical global processes necessary for the regulation, stability, and resilience of the planet.²¹ This framework informs our understanding of the state of Earth system functioning and defines the limits for safe operation.²² These limits are known as planetary boundaries.

What are Planetary Boundaries?

Planetary boundaries are interdependent quantitative assessments of the safe limits for human pressure on nine Earth systems.²³

Given that Earth’s systems are interconnected any action that affects one process in the framework will affect the risks of the other processes.²⁴ **All nine boundaries must be respected to maintain the stability of Earth’s systems and the safe operating space for humanity.**²⁵ Therefore, *decision-making on sustainability must take a holistic approach and consider all planetary boundaries* rather than any one in isolation.²⁶

Historically, the stability of these systems has been maintained through complex interactions of biophysical processes within the systems themselves.²⁷ This stability not only supported but also made possible, the development and prosperity of human societies up to now.²⁸ However, transgressing these boundaries increases the risk of widespread abrupt or irreversible environmental changes, and **seven of the nine planetary boundaries have already been transgressed** (Table 2).²⁹

Table 2: State of Planetary Boundaries as of 2025³⁰

Planetary Boundary	Current Status (2025)
Climate Change	TRANSGRESSED
Biosphere Integrity	TRANSGRESSED
Land System Change	TRANSGRESSED
Freshwater Use	TRANSGRESSED
Biogeochemical Flows	TRANSGRESSED
Novel Entities	TRANSGRESSED
Ocean Acidification	TRANSGRESSED (for the first time in 2025)
Ozone Depletion	SAFE ZONE
Atmospheric Aerosol Loading	SAFE ZONE

Further, the conditions of all breached boundaries are worsening.³¹ Thus, *there is an ever-increasing risk of essential life-support systems crossing critical thresholds that could have severe consequences for ecosystems, economies, and societies.*³²

Planetary boundaries are not environmental preferences. They are operating conditions for the economy.

Irreversibility and Risk of Crossing Critical Tipping Points

A tipping point is the critical threshold of a system that when transgressed can lead to a significant, and often irreversible, change in the state of the system.³³ Crossing critical system thresholds poses significant risk because even small changes can set in motion reinforcing feedback loops that can push systems away from a stable state into a profoundly altered state.³⁴ For example, as global warming pushes the global average temperature above 1.5°C the risks of Earth’s system tipping points increase (Box 2) and humanity is pushed into a danger zone where multiple tipping points pose catastrophic risks to billions of people.³⁵

Box 2: Consequences of Crossing Tipping Points

Considered the first catastrophic tipping point to be reached, warm-water coral reefs are crossing their thermal tipping point, leading to unprecedented dieback that will not only result in biodiversity loss and possible species extinction but also threaten the livelihoods of nearly one billion people who depend on them.^{36,37,38} At the same time, polar ice sheets are approaching tipping points. Transgressing these critical thresholds will lead to several metres of irreversible sea-level rise that will impact hundreds of millions of people.³⁹

Tipping points exhibit non-linear dynamics. Therefore, as we approach the critical thresholds of a system, that system becomes progressively more sensitive to change, even seemingly minor changes.⁴⁰ Indeed, as Earth’s systems are interconnected so too are tipping point risks⁴¹ and most of the interactions between tipping points are destabilizing, which means that tipping one system increases the likelihood of tipping another system.⁴² Once a tipping point is crossed the resulting self-reinforcing feedback loops accelerate the transition to hugely altered states.⁴³

The quantity and quality of critical ecosystem services provided to societies and economies will abruptly change as tipping points are crossed.⁴⁴ Therefore, **crossing tipping points**

will cause significant economic and financial risks (Figure 3). Indeed, high-magnitude losses across multiple ecosystem services will cause material economic and financial risks. *By enabling economic*

*activities linked to ecosystem tipping point drivers within specific ecosystems, the financial sector contributes to the amplification of risk through feedback effects (double materiality) (Figure 3).*⁴⁵

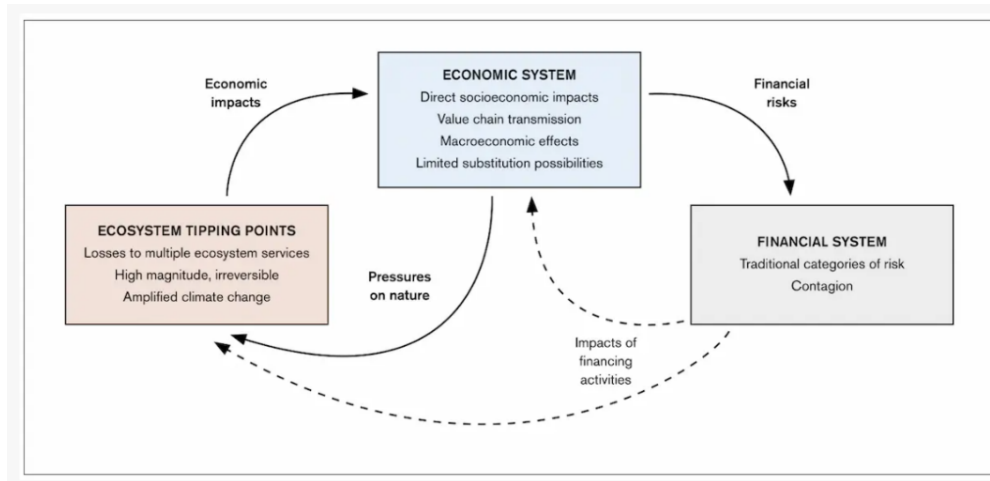


Figure 3: Financial Sector Amplifies Ecosystem Tipping Point Risks. Source: Marsden, Ryan-Collins, Abrams, Lenton, reproduced from Green Central Banking (2024).⁴⁶

Economic activity is dependent on a stable environment. Crossing tipping points poses significant risks including insurance risk, fiscal risk, and food system risk.

What are Ecosystem Services?

Ecosystems contribute to human wellbeing through supporting, regulating, provisioning and cultural services (Figure 4).

Ecosystems as Resilience Building Infrastructure

Roads, bridges, and water/wastewater systems are not built to withstand the conditions of a rapidly changing climate. Urban drainage is overwhelmed by intense rainfall, while northern buildings are destabilized by thawing permafrost.⁴⁷ At the same time building codes and land-use planning have not kept pace with the risks of a changing climate and homes and businesses continue to be constructed in flood plains and wildfire-prone areas.

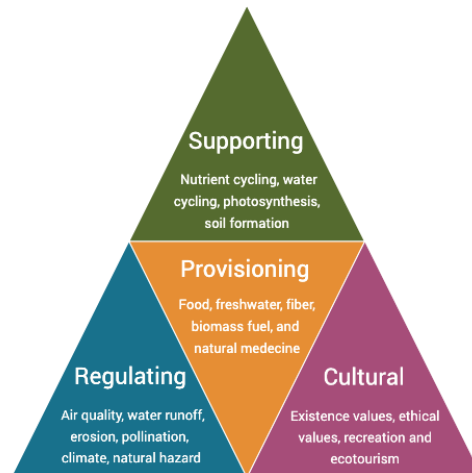


Figure 4: Direct and Indirect Contributions of Ecosystem Services. Source: Earthwise Aware (n.d.).⁴⁸

Thus, ecosystem services include the direct and indirect contributions ecosystems make to human wellbeing.⁴⁹ Indeed, **wetlands absorb floodwaters, forests clean air, peatlands store carbon, and grasslands stabilize the climate while also providing vital support for our economy, health, and safety** (Table 3).⁵⁰

In Canada, both *economic success and quality of life require investment in natural capital along with accounting for the benefits of ecosystem services that sustain life*. This type of investment and accounting are the cornerstone of efficient nation-building.⁵¹

Table 3: Examples of Ecosystem Services and their Economic Significance

Services Provided by Ecosystems	Significance of Canada's Natural Capital
<ul style="list-style-type: none"> • Carbon Sequestration (Peatlands in Boreal Store ~150B Tonnes of Carbon)⁵² • Water Filtration & Purification for Municipal Systems⁵³ • Flood Regulation⁵⁴ & Storm Surge Buffering⁵⁵ • Pollination Supporting nearly \$2.8B for Canadian Farmers⁵⁶ • Disease Regulation through Biodiversity Buffers⁵⁷ 	<ul style="list-style-type: none"> • Canada's forests, wetlands, and oceans are among the most valuable natural assets on Earth⁵⁸ • Coastal & marine ecosystems support fisheries worth \$3.6B annually⁵⁹ • Natural ecosystems help prevent flooding in 54% of urban areas & 74% of agricultural lands within floodplains⁶⁰ • Grasslands & soils store carbon equivalent to decades of emissions⁶¹

From Environmental Degradation to Environmental Regeneration

The challenge before us demands a paradigm shift. Historically sustainable development was believed to occur at the intersection of economic, social, and environmental

governance (Figure 6). The concept of sustainability has since evolved. Notions of sustainability now recognize that **without healthy ecosystems, biodiversity, and natural resources, there can be no prosperity** (Figure 5).

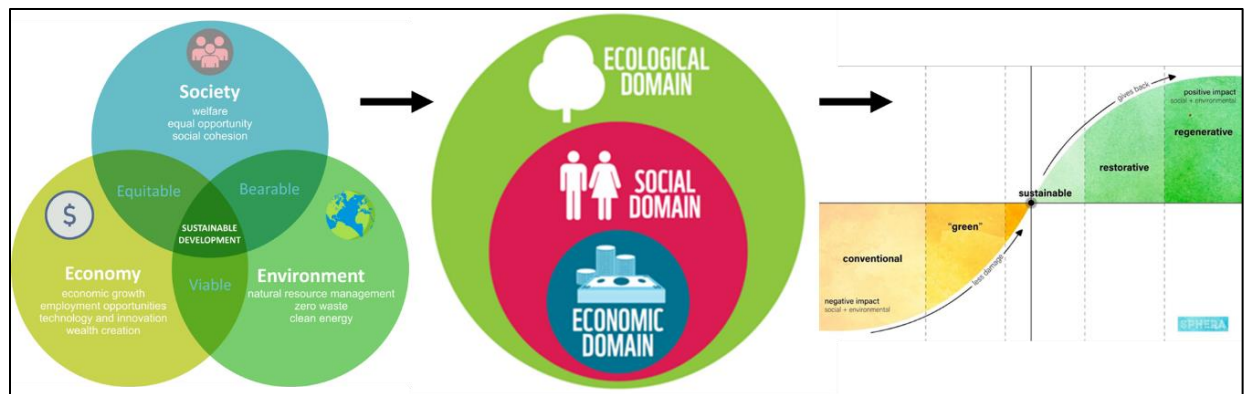


Figure 5: The Evolution of Sustainability Theory. Sources: EduRev (n.d.), Graves (2018), and SPHERA. (n.d.).^{62, 63, 64}

Further, it is understood that **a sustainable future is about more than surviving. It is about thriving – it is about wellbeing for all.** In short, the values of sustainability have shifted to an understanding that *a strong economy cannot exist without people and the planet.* Thus, realizing the full economic potential of Canada requires moving away from a “business-as-usual” approach, and beyond sustainability, to environmental restoration and regeneration (Figure 5, Box 3).

Box 3: Regeneration

Regeneration is a holistic approach that aims not only to conserve but also to restore and replenish ecosystems, biodiversity, and natural resources. We need active efforts to regenerate and revitalize ecosystems through ecosystem restoration, reconciliation with Indigenous Peoples, regenerative agriculture, water conservation and management, transitioning to renewable energy, community engagement and collaboration, and evidence-base policy and governance reform.

The consequences of ecosystem failure include high economic and social costs and when ecosystems fail governments pay.

Part III: Why the Current Economic Model Is Failing

The Limitations of Gross Domestic Product

Gross domestic product growth alone does not capture the real drivers of prosperity. **Gross domestic product measures the flow of money through an economy: what is spent, produced, and rebuilt.** *It does not tell us whether that activity improves the wellbeing of people or the health of the systems that sustain life.* In fact, GDP can

grow in circumstances that reflect profound human tragedy. Furthermore, **economic growth measured by GDP is based on the false assumption that infinite growth on a finite planet is possible.** GDP does not recognize the constraints of ecological limits (Box 4).

Box 4: Gross Domestic Product Does NOT Measure:

- The stock of natural capital being depleted (forests, fisheries, soil, clean air, water)
- The unpaid costs externalized to ecosystems, future generations, and vulnerable populations
- Healthcare costs
- Health, wellbeing, equity, or resilience

Environmental Externalities

The economic concept recognizing the uncompensated environmental effects of production and consumption that affect consumer utility and enterprise cost outside the market mechanism are known as environmental externalities.⁶⁵ **Negative externalities lead to private production costs that are likely to be lower than the social costs.** These *indirect costs include decreased quality of life, higher healthcare costs, and lost production opportunities, that could for example emerge when pollution harms air and water quality or contaminates food supply chains.*⁶⁶ The polluter pays principle intends to encourage both households and enterprises to internalize externalities in their plans and budgets to minimize environmental impacts.⁶⁷

When ecological limits are ignored, economic risk accumulates invisibly until it materializes suddenly.

Part IV: Sustainable Finance and the Role of Government

Sustainable Finance is Risk Management

Historically, finance has been evaluated through metrics like GDP growth and shareholder return. Yet, climate change, inequality, and systemic risk demonstrate that finance cannot be neutral; it actively shapes societal outcomes. As Piketty emphasizes, inequality and capital allocation reflect policy choices, not market inevitabilities.⁶⁸

Sustainable finance is about reorienting capital flows to support long-term ecological and social wellbeing. *Sustainable finance recognizes the risks posed by climate change, notably transition risks and physical risk (Box 5), making financial institutions better prepared to deal with these risks.* It also redirects capital towards mitigation and adaptation. It recognizes that **traditional finance, when indifferent to environmental externalities, can accelerate ecological degradation and social inequality.**⁶⁹

Box 5: Climate-Related Risk

Climate change poses two main categories of financial risk: physical risk and transition risks.⁷⁰ Physical risk refers to damage to assets or supply chains caused by climate catastrophes like floods. Transition risks are financial risks that will arise as the world transitions to a low-carbon economy and include policy changes and technological innovations.⁷¹ Beyond financial risks, investments in fossil fuel, mining, and coal sectors also pose significant legal risks. The likelihood of litigation against fossil fuel companies is far from remote, as multiple legal actions have already been filed against major oil corporations in Canada.

Voluntary, market-led initiatives are insufficient. For example, RBC recently abandoned its publicly reported sustainable finance goals, supposedly due to new restrictions on environmental claims under the *Competition Act*.⁷² These shifts highlight the limitations of voluntary disclosure and the need for rigorous, enforceable standards.

Economic systems must serve people and the planet, not profits above all.

The Role of Public Finance

Private capital alone will not drive the transition to a low-carbon, ecologically sound economy: public investment is essential to overcome initial barriers and mobilize private capital.⁷³ Canada's Sustainable Finance Action Council emphasizes that **private capital will only flow at scale when government reduces risk and creates supportive policy environments.**⁷⁴ As of now, the federal government gives billions of dollars in subsidies and tax breaks to the fossil fuel industry,⁷⁵ but has committed to gradually phasing out inefficient subsidies,⁷⁶ providing an opportunity for investment in planetary health. *Federal policy and subsidy frameworks should align finance with long-term wellbeing and planetary health, prioritizing emerging sectors such as clean energy, resilient infrastructure, and health-promoting technologies* (Table 4). Investments in these areas directly enhance community wellbeing and democratic participation by improving access to services and reducing inequalities.

Table 4: Opportunities to Align Financial Flows with Wellbeing and Planetary Health

Lever	Mechanism	Opportunity for Parliament
Federal Budgeting	Integrate natural capital accounting into federal fiscal frameworks; create a green taxonomy	Mandate Statistics Canada to publish comprehensive wealth alongside GDP
Crown Corporations	Align BDC, EDC, and infrastructure banks with climate and biodiversity commitments	Require climate stress testing and transition planning from Crown entities; Pass Bill S-238 , the Climate Aligned Finance Act
Federally Regulated Financial Institutions (FRFIs)	Require FRFIs to disclose climate-related risk and put in place transition plans	Pass Bill S-238 , the Climate Aligned Finance Act
Taxation	Existing carbon price provides a price signal; gaps remain in biodiversity and land-use incentives	Extend environmental fiscal reform to align incentives with planetary health goals
Public Procurement	Federal procurement (~\$22B annually) ⁷⁷ can drive demand for sustainable goods and services	Embed sustainability criteria in procurement standards and supplier requirements

These shifts should be paired with a just transition that protects workers and communities through retraining, regional economic diversification, and income supports, ensuring economic transformation strengthens both livelihoods and ecological resilience. Legislation that can help advance a just transition has already been passed by Parliament, including the [Canadian Sustainable Jobs Act](#), the [National Strategy Respecting Environmental Racism and Environmental Justice Act](#) and the [United Nations Declaration on the Rights of Indigenous Peoples Act](#).

Part V: Towards a Wellbeing Economic Model

Canada has the tools necessary to move towards an economic model that works

within planetary limits. **By taking a wellbeing for all approach Canada can move past antiquated economic assumptions and move towards ecologically and socially sustainable prosperity.**

The Planetary Commons Framework

The concept of the planetary commons expands the traditional idea of “global commons” — shared resources like the high seas that lie beyond national jurisdiction (Box 6). The planetary commons are not just geographic spaces but the critical biophysical functions and regulatory systems upon which all life, all economies, and all governance depend, irrespective of where they physically reside.⁷⁸

Box 6: Canada as Custodian of Planetary Commons

Canada holds a disproportionate share of the world's most critical planetary commons:

- ~25% of the world's remaining intact boreal forest⁷⁹— a critical carbon sink and biodiversity reservoir.⁸⁰
- ~20% of the world's surface freshwater,⁸¹ including the Great Lakes and Arctic watersheds
- Vast marine ecosystems across three ocean coasts
- Permafrost storing over 200 billion tonnes of carbon⁸²— over half of boreal peatlands are distributed in permafrost regions⁸³

The governance obligation is correspondingly large.

What this demands of governance is a fundamental shift in thinking, moving beyond thinking just about shared resources and towards the functions of the Earth systems — climate regulation, hydrological cycling, biological diversity maintenance, and biogeochemical flows that keep the planet habitable. These functions belong to everyone and to every generation that follows. They are, in the fullest sense, our common inheritance.⁸⁴

Domestically, the planetary commons framework provides Parliament with a coherent organizing principle for a wellbeing economy: governance must simultaneously secure a social foundation (access to health, housing, food, and dignity) while respecting an ecological ceiling defined by the boundaries of Earth's regulatory systems.⁸⁵ These are not competing goals. A destabilized climate and collapsed biodiversity will ultimately undermine the very social programs Parliament works to fund and protect. Conversely, a just and healthy society is far better positioned to invest in, and insist upon, the long-term protection of planetary systems.

Markets are not pricing planetary risk correctly. The wellbeing economy is not an alternative to prosperity. Within planetary limits, it is the only form of prosperity that endures.⁸⁶

Circular, Low-Carbon, and Regenerative Economies

The transition to a low-carbon economy is mandated by law. The [Canadian Net-Zero Emissions Accountability Act](#) (CNZEEA), which became law in June 2021 aims for Canada to achieve net-zero greenhouse gas (GHG) emissions by 2050. It requires the government to set five-year emissions reduction targets, beginning with 2030 (40-45% below 2005 levels), and create transparent, independently reviewed accountability reports.⁸⁷ *Achieving Canada's goals will profoundly influence good living standards and robust health.*

The transition to a low-carbon economy cannot be treated solely as an environmental fix. Rather, it must be understood as a **comprehensive strategy for human wellbeing** that strengthens *community resilience, health systems, digital and*

physical infrastructure, and democratic participation (Table 5).

Climate mitigation and adaptation expand economic opportunity creating jobs in

renewables, retrofitting buildings, and low-carbon services⁸⁸—while improving health outcomes and social cohesion.

Table 5: Economic Opportunities for Canada to Advance Wellbeing for All

Economic Strategy	Core Principles	Canadian Opportunities
Circular Economy	Design waste out of production systems; keep materials in use at highest value; regenerate natural systems	Manufacturing innovation, zero-waste public infrastructure, extended producer responsibility legislation for packaging and electronics
Low-Carbon Economy	Systematically reduce and ultimately eliminate net GHG emissions across energy, industry, transport, and buildings	Clean electricity grid expansion, deep building retrofit programs, clean transportation incentives
Regenerative Agriculture	Farm and manage land in ways that restore soil health, biodiversity, and water cycles rather than degrading them	Soil carbon incentive programs, agri-environmental payment systems, support for Indigenous food sovereignty
Nature-Based Solutions	Use natural processes — wetland restoration, urban forests, coastal protection — to deliver climate mitigation, adaptation, and health benefits simultaneously	Boreal forest protection, urban tree canopy programs, coastal wetland restoration, national parks expansion, integrated water management

Transitioning to a Wellbeing Society

The shift to a wellbeing economy is ultimately a social and political project. It requires a society-wide conversation about what we value, what we want to sustain, and what kind of Canada we wish to pass on to future generations. Achieving Canada’s climate commitments and advancing reconciliation with Indigenous communities will require structural transformations across energy, transport, buildings, and industry sectors. They also **require a transformation of how we think about economic concepts such as growth and wealth.** We must *move beyond using GDP as the sole measure of prosperity*

and consider other measures such as health, equity and sustainability.

Several nations — New Zealand,⁸⁹ Iceland,⁹⁰ Scotland,⁹¹ Finland,⁹² and Wales⁹³ — have adopted formal wellbeing budgeting frameworks that explicitly balance economic, social, and environmental objectives in fiscal decision-making. These practical governance tools have survived changes of government because they reflect durable public values.

A good life for all begins with smarter growth. It is the responsibility of governments to balance economic, social, and environmental objectives in fiscal decision-making.

Part VI: Governing Within Limits, Governing for A Good Life

Actionable Policy

Protecting nature is about more than environmental stability and ecosystem resilience. Nature forms the foundation on which our society functions. It provides the fundamental necessities of life, essential resources, and ecosystem services required for wellbeing. Indeed, quality of life is fundamentally dependent on regenerating and protecting nature.⁹⁴ Therefore, nation building must be synonymous with building resilience. Investing in resilient infrastructure, including ecosystem restoration, provides Canada with a unique opportunity to not only protect nature, which is a fundamental part of Canadian self-identity and history, but also establish a strong foundation for economic growth. As Minister of National Defence, the Honourable David McGuinty has noted, ““we can’t replace nature — there is no substitute. Our national and natural security are inextricably linked.”⁹⁵

A prosperous future is dependent on preventing planetary boundary transgression, reversing transgressions that have already happened, and on adapting to the impacts of transgressions that have occurred. Indeed, for a thriving economy and society, mitigation and adaptation must be part of Canada’s economic, social, and environmental policy framework. The transition to a low-carbon economy is already mandated by the CNZEAA. The next steps require alignment of capital flows with national resilience and a robust climate risk disclosure framework. This will necessarily require the phase out of inefficient subsidies to a variety of economic

sectors. At the same time, adaptive strategies could include advancing legislation that supports the growth of a circular economy and aligning federal procurement with national resilience.

A modern budget must serve more than the economic needs of a nation. It must seek to improve and preserve social and environmental conditions as a fundamental part of fiscal responsibility. Antiquated budgets cling to the idea that a strong economy can only be achieved through a budget based on resource extraction, defence, and a hyper-fixation on growth and gross domestic product. However, governments must take a pragmatic approach to fiscal planning by designing budgets that support the health and wellbeing of citizens and the environment.

Other G7 economies already have green and transition taxonomies and are redirecting investments toward clean growth. Canada needs a clear framework to guide the financial sector in mitigating climate risk, redirecting capital toward resilience and decarbonization, and reporting transparently on progress. Furthermore, *governments around the world are starting to reshape budgetary policy by adopting formal wellbeing budgeting frameworks that explicitly balance economic, social, and environmental objectives in fiscal decision-making.*

The tools necessary to position Canada as a global leader in the transition and among the highest rated for quality of life are already available. Canada’s Quality of Life Framework (QLF) links data on key indicators across five domains; prosperity, society, health, environment, and good governance,

as well as three central indicators which include life satisfaction, sense of meaning and purpose, and future outlook.⁹⁶ This framework provides critical data that governments use to understand and improve the state of equitable and sustainable well-being in Canada.⁹⁷ Indeed the implementation of the QLF in Canada, at the federal level has already begun and the framework is being applied to the federal budget process.⁹⁸ Since 2021, to understand the impacts of the budget on quality of life new spending proposals have integrated an assessment of the expected impacts.⁹⁹ The integration of quality of life in the budgeting

process could be further advanced by integrating planetary limits into the budgeting framework to ensure the economy operates within the constraints imposed by natural systems.

As part of a rigorous transparency and accountability reporting mechanism a new budget that integrates both the QLF and planetary limits could be evaluated based on a national measure of comprehensive wealth. To this end the mandate of Statistics Canada could be expanded to include the completion of a national measure of comprehensive wealth each year.

Recommendations:

1. Integrate Planetary Limits into Budgeting
2. Adopt Wellbeing Indicators (StatsCan Mandate)
3. Legislate Climate Risk Disclosure & Mitigation, as well as Transition Planning (Financial System)
4. Legislate Biodiversity Protection
5. Phase Out Inefficient Subsidies
6. Invest in Resilient Infrastructure
7. Support Circular Economy Legislation
8. Align Federal Procurement with National Resilience

Endnotes/References

¹ SolAbility. (2025). [The global sustainable competitiveness index.](#)

² SolAbility. (2025). [The global sustainable competitiveness index.](#)

³ SolAbility. (2025). [The global sustainable competitiveness index.](#)

⁴ National Collaborating Centre for Indigenous Health. (2022). [Climate change and Indigenous peoples' health.](#)

⁵ Insurance Bureau of Canada. (2026). [Severe weather-related insured losses in Canada exceed \\$2.4 billion in 2025.](#)

⁶ Insurance Bureau of Canada. (2024). [Severe weather in 2023 caused over \\$3.1 billion in insured damage.](#)

⁷ Insurance Bureau of Canada. (2025). [Insured losses from Jasper wildfire rise to just under \\$1.3 billion.](#)

⁸ Government of Canada, Parks Canada. (2025). [Government of Canada Funding for 2024 Wildfire Season in Parks Canada-Administered Places](#)

[Including Jasper National Park Wildfire Response Recovery.](#)

- ⁹ Canadian Climate Institute. (2024). [Fact Sheet: Climate Change and Wildfires](#)
- ¹⁰ Canadian Climate Institute. (2024). [Fact Sheet: Climate Change and Wildfires.](#)
- ¹¹ Government of Canada. (2022). [Surviving heat: Impacts of the 2021 western heat dome in Canada.](#)
- ¹² Government of Quebec. (2024). [The unsuspected effects of extreme heat on Quebec's healthcare system.](#)
- ¹³ Loprespub. (2025). HillNotes. [The home insurance market and severe weather events in Canada.](#)
- ¹⁴ Loprespub. (2025). HillNotes. [The home insurance market and severe weather events in Canada.](#)
- ¹⁵ Loprespub. (2025). HillNotes. [The home insurance market and severe weather events in Canada.](#)
- ¹⁶ Insurance Bureau of Canada. (2026). [Severe weather-related insured losses in Canada exceed \\$2.4 billion in 2025.](#)
- ¹⁷ Insurance Bureau of Canada. (2026). [Disaster.](#)
- ¹⁸ Insurance Bureau of Canada. (2026). [Severe weather-related insured losses in Canada exceed \\$2.4 billion in 2025.](#)
- ¹⁹ NASA EarthData. (n.d.). [Anthropogenic/Human-Influenced Ecosystems.](#)
- ²⁰ NASA EarthData. (n.d.). [Anthropogenic/Human-Influenced Ecosystems.](#)
- ²¹ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²² Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²³ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²⁴ Stockholm Resilience Centre. (2025). [Planetary Boundaries](#)
- ²⁵ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²⁶ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²⁷ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²⁸ Stockholm Resilience Centre. (2025). [Planetary Boundaries.](#)
- ²⁹ Stockholm Resilience Centre. (2025). [Seven of Nine Planetary Boundaries Now Breached.](#)
- ³⁰ Stockholm Resilience Centre. (2025). [Seven of Nine Planetary Boundaries Now Breached](#)

- ³¹ Stockholm Resilience Centre. (2025). [Seven of Nine Planetary Boundaries Now Breached.](#)
- ³² Stockholm Resilience Centre. (2025). [Seven of Nine Planetary Boundaries Now Breached.](#)
- ³³ European Space Agency. (2023). [Understanding Climate Tipping Points.](#)
- ³⁴ European Space Agency. (2023). [Understanding Climate Tipping Points.](#)
- ³⁵ Global Tipping Points. (2025). [Global Tipping Points Report 2025.](#)
- ³⁶ Global Tipping Points. (2025). [Global Tipping Points Report 2025](#)
- ³⁷ Science News Explores. (2025). [Coral deaths: First Climate Tipping Point.](#)
- ³⁸ Stockholm Resilience Centre. (2025). [World Reaches First Climate Tipping Point—Widespread Mortality of Coral Reefs.](#)
- ³⁹ Global Tipping Points. (2025). [Global Tipping Points Report 2025.](#)
- ⁴⁰ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴¹ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴² Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴³ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴⁴ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴⁵ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴⁶ Marsden, L., et al. (2024). [Ecosystem Tipping Points: The Role Financial Authorities Should Play in Preventing Them.](#)
- ⁴⁷ Galvez, R., (2025). *The Hill Times*. [The Climate is Changing Faster than Canada's Infrastructure—Ignoring it is Not Fiscally Responsible.](#)
- ⁴⁸ Earthwise Aware. (n.d.). [What Are Ecosystem Services?](#)
- ⁴⁹ Earthwise Aware. (n.d.). [What Are Ecosystem Services?](#)
- ⁵⁰ van Dijk, P., et al. (2025). *Canadian Parks and Wilderness Society*. [Addressing the Natural Infrastructure Policy Gap is Crucial to Nation-Building Success.](#)

⁵¹ van Dijk, P., et al. (2025). *Canadian Parks and Wilderness Society*. [Addressing the natural infrastructure policy gap is Crucial to Nation-Building Success](#).

⁵² Wildlife Conservation Society Canada. (n.d.). [Peatlands in Canada: A globally important carbon storehouse](#).

⁵³ National Wildlife Federation. (n.d.). [Ecosystem Services](#).

⁵⁴ National Wildlife Federation. (n.d.). [Ecosystem Services](#).

⁵⁵ National Ocean Service. (n.d.). *National Oceanic and Atmospheric Administration*. [Why Are Estuaries Important? Ecosystem](#).

⁵⁶ Duarte, G. T., et al. (2024). “Unveiling the benefits and gaps of wild pollinators on nutrition and income.” *Environmental Research Letters*, 19(4). <https://doi.org/10.1088/1748-9326/ad2d83>.

⁵⁷ World Health Organization. (2025). [Biodiversity](#).

⁵⁸ Wildlife Conservation Society Canada and Smart Prosperity Institute. (2021). [Protecting Northern Peatlands: A Vital Cost-Effective Approach to Curbing Canada’s Climate Impact](#).

⁵⁹ Unifor. (2024). [Fisheries Sector Profile](#).

⁶⁰ University of British Columbia Forestry. (2024). [Harnessing Nature’s Power to Prevent](#).

⁶¹ Liu L., et al. (2022). “The grassland carbon cycle: Mechanisms, responses to global changes, and potential contribution to carbon neutrality.” *Fundam Res*, 3(2). <https://doi.org/10.1016/j.fmre.2022.09.028>.

⁶² EduRev. (n.d.). [Shankar IAS Summary: Environmental Impact Assessment – 1](#).

⁶³ Graves, R., (2018). “[A Social Ecological Ethic for Architecture](#).” *Journal of Architecture and Construction*, 1(4).

⁶⁴ SPHERA. (n.d.). [Regenerative Design](#).

⁶⁵ United Nations Economic and Social Commission for Western Asia. (n.d.). [Environmental Externalities](#).

⁶⁶ Helbling, T., (n.d.). *International Monetary Fund*. [How Economies Function](#).

⁶⁷ United Nations Economic and Social Commission for Western Asia. (n.d.). [Environmental Externalities](#).

⁶⁸ Piketty, T. (2024). [Chroniques 2020–2024: Vers le Socialisme Écologique](#).

⁶⁹ Galvez, R., and the Concordia Sustainability Ecosystem. (2023). [Aligning Canadian Finance with Climate Commitments](#).

⁷⁰ Hoffart, F.M., et al. (2024). “Exploring the Interdependence of Climate, Finance, Energy, and

Geopolitics: A Conceptual Framework for Systemic Risks Amidst Multiple Crises.” *Applied Energy*, 361, <https://doi.org/10.1016/j.apenergy.2024.122885>

⁷¹ Hoffart, F.M., et al. (2024). “Exploring the Interdependence of Climate, Finance, Energy, and Geopolitics: A Conceptual Framework for Systemic Risks Amidst Multiple Crises.” *Applied Energy*, 361, <https://doi.org/10.1016/j.apenergy.2024.122885>

⁷² Wealth Professional. (2025). [Canada’s Biggest Bank Pulls \\$500 Billion Climate Pledge](#).

⁷³ Zrinyi, N., et al. (2020). [Building Forward Better: A Clean and Just Recovery from the COVID-19 Pandemic](#).

⁷⁴ Rockström, J., et al. (2024). “The Planetary Commons: A New Paradigm for Safeguarding Earth-Regulating Systems in the Anthropocene.” *Proc. Natl. Acad. Sci. U.S.A.* 121(5), <https://doi.org/10.1073/pnas.2301531121>.

⁷⁵ Environmental Defence. (2024). [The running list of federal fossil fuel subsidies in Canada in 2024](#).

⁷⁶ Government of Canada. (2023). [Inefficient Fossil Fuel Subsidies Government of Canada — Guidelines](#).

⁷⁷ Government of Canada, Public Services and Procurement Canada. (2019). [Public Services and Procurement Canada Unveils Plan to Modernize Federal Procurement](#).

⁷⁸ Rockström, J., et al. (2024). “The Planetary Commons: A New Paradigm for Safeguarding Earth-Regulating Systems in the Anthropocene.” *Proc. Natl. Acad. Sci. U.S.A.* 121(5), <https://doi.org/10.1073/pnas.2301531121>.

⁷⁹ Canadian Wildlife Federation. (n.d.). [Boreal Forest](#).

⁸⁰ Wildlife Conservation Society Canada. (n.d.). [Peatlands in Canada: A Globally Important Carbon Storehouse](#).

⁸¹ Government of Canada, Environment and Climate Change Canada. (2026). [National Freshwater Science Agenda: A Report on National Freshwater Science Priorities](#).

⁸² Wallace, K. (2019). *The Star*. [Beyond Frozen](#).

⁸³ Gao, J., et al. (2025). “Permafrost Peatland Development at Thermokarst Lake Margins in the Northern Greater Khingan Mountains of Northeast China: Rapid Areal Increase and Carbon Accumulation Since the 1950s.” *Palaeogeography, Palaeoclimatology, Palaeoecology*, 679, <https://doi.org/10.1016/j.palaeo.2025.113281>

⁸⁴ Rockström, J., et al. (2024). “The Planetary Commons: A New Paradigm for Safeguarding Earth-Regulating Systems in the Anthropocene.” *Proc. Natl. Acad. Sci. U.S.A.* 121(5), <https://doi.org/10.1073/pnas.2301531121>.

⁸⁵ Fanning, A. L., and Raworth, K. (2025). “Doughnut of Social and Planetary Boundaries Monitors a World out of Balance.” *Nature*, 646, <https://doi.org/10.1038/s41586-025-09385-1>.

⁸⁶ Rockström, J., et al. (2024). “The Planetary Commons: A New Paradigm for Safeguarding Earth-Regulating Systems in the Anthropocene.” *Proc. Natl. Acad. Sci. U.S.A.* 121(5), <https://doi.org/10.1073/pnas.2301531121>.

⁸⁷ Government of Canada, Environment and Climate Change Canada. (2021). [Government of Canada Legislates Climate Accountability with First Net-Zero Emissions Law](#).

⁸⁸ United Nations. (2025). [Seizing the Moment of Opportunity: Supercharging the New Energy Era of Renewables, Efficiency, and Electrification](#). New York.

⁸⁹ Wellbeing Economy Alliance. (2022). [Case Studies: New Zealand—Implementing the Wellbeing Budget](#).

⁹⁰ Wellbeing Economy Alliance. (2022). [Case Studies: Iceland—Wellbeing Framework](#)

⁹¹ Wellbeing Economy Alliance. (2022). [Case Studies: Scotland—Building a Wellbeing Framework Through Public Consultation](#).

⁹² Wellbeing Economy Alliance. (2022). [Case Studies: Finland—Universal Basic Income Pilot](#).

⁹³ Welsh Government. (2025). [Well-being of Future Generations \(Wales\) Act 2015: The Essentials](#).

⁹⁴ Haluza-DeLay, R., et al. (2009). *Biodivcanada.ca*. [How Canadians Value Nature: A Strategic and Conceptual Review of Literature and Research](#).

⁹⁵ McGuinty, D., Government of Canada, National Defence. (2025). [Minister McGuinty’s Remarks at the 4th Montreal Climate Security Summit](#).

⁹⁶ Government of Canada. (2025). [Quality of Life Framework for Canada](#).

⁹⁷ Government of Canada. (2025). [Quality of Life Framework for Canada](#).

⁹⁸ Government of Canada. (2025). [Quality of Life Framework for Canada](#).

⁹⁹ Government of Canada. (2025). [Quality of Life Framework for Canada](#).