Philanthropy's Role in Supporting Community-Level Climate Action in Atlantic Canada: Opportunities and Challenges

Edmund Yirenkyi
PhD Student
Memorial University of Newfoundland, Grenfell Campus
School of Science and Environment
2025-01-15

ABSTRACT

This review explores how philanthropy contributes to climate action in Atlantic Canada, a region facing threats from extreme weather events, rising sea levels, and scarcity of resources that impact local communities. While public and private sector funding is vital, philanthropy offers unique opportunities to support localized, innovative climate solutions. This review explores the current climate finance landscape, identifies the specific needs of Atlantic Canadian communities, and evaluates how philanthropic funding can bridge gaps in financing. It focuses on the impact of philanthropy on climate adaptation and mitigation efforts, emphasizing community resilience and sustainability. While philanthropy can drive positive change, challenges such as equitable resource distribution, fostering systemic change, and empowering marginalized communities must be addressed. Philanthropic organizations should transition from providing short-term, project-focused funding to supporting long-term, transformative initiatives. Collaborative partnerships between governments, businesses, and civil society are key to maximizing impact. Addressing these challenges and embracing innovative approaches will enable philanthropy to serve as a powerful catalyst for climate action, fostering a more environmentally stable future and able to withstand climate challenges for Atlantic Canada and beyond.

Introduction

In recent years, the intersection between finance and climate governance has attracted significant attention as stakeholders confront the pressing challenges posed by climate change (Salazar & Katigbak, 2022). Despite the implementation of rapid and effective global emissions reduction strategies, some climate impacts have become unavoidable (Doelle & Munroe, 2012). Communities in Atlantic Canada are, therefore, preparing for increasingly severe droughts, rising sea levels, the shrinkage of glaciers and snowpacks that supply essential water resources, and the increased occurrence of severe weather events (Ackerman, 2009; Eyzaguirre et al., 2022). Ackerman (2009) suggests that the climate crisis poses a significant challenge to development. In the same way, the Canadian Climate Institute (2022) emphasizes that climate change poses a significant and escalating threat to Canada's economy and the well-being of its people. Schenker and Stephan (2014) argued that both mitigation and adaptation are essential strategies for tackling global climate change. Bednar et al. (2018) observe that the focus on sustainable solutions to the climate crisis has moved from just mitigation to also include the essential costs of adaptation. These adaptation and mitigation efforts necessitate significant funding (Tennant et al., 2024). Schenker and Stephan (2014) maintain that this dual necessity of addressing both aspects highlights the crucial role of financing within climate governance frameworks.

However, while mitigation is acknowledged as a global public good requiring coordinated international efforts, adaptation is often more effectively carried out locally, facilitating quicker and broader actions (Salazar & Katigbak, 2022). Schenker and Stephan (2014) pointed out that while reducing greenhouse gas emissions is a significant focus in political discussions, adapting to climate change is becoming more critical for two reasons. First, some aspects of climate change are unavoidable, even with significant emissions reductions; for example, rising sea levels are an inevitable consequence of past greenhouse gas emissions and may continue to affect coastal communities regardless of future actions. Second, the benefits of adapting are primarily local, whereas mitigation helps everyone and requires global cooperation (Schenker & Stephan, 2014).

With delays in reaching a new agreement to replace the Kyoto Protocol, there is increasing focus on local adaptation measures (Schenker & Stephan, 2014) despite their potentially high costs (Tennant et al., 2024). Ayers (2009) points out that the World Bank (2006) estimated that the cost of climate-proofing development investments—ensuring they are resilient to climate change—would range from $10 billion to $40 billion per year. This process involves assessing vulnerabilities and implementing strategies to ensure infrastructure can withstand extreme weather and other climate challenges (Ayers, 2009). Furthermore, Schenker and Stephan (2014) highlighted that by mid-century, developing countries, and smaller communities may require $70 billion to $100 billion each year to adapt to a two °C temperature rise, surpassing earlier estimates by the United Nations Framework Convention on Climate Change (UNFCCC, 2007). Both figures illustrate the substantial financial challenges associated with adaptation. However, this estimate has been criticized (Ayers, 2009) for not including the costs of making existing natural and physical resources more resilient, funding new projects specifically for climate change, or the

expenses that families and communities will face to adapt to these changes (Schenker & Stephan, 2014). This suggests that the actual figure could be higher once all these factors are included in the cost estimate.

Papin and Beauregard (2024) highlight that numerous billionaires have made significant financial commitments to take the lead in climate governance over the past fifteen years. They cite examples such as Richard Branson's $3 billion pledge to climate solutions in 2006, Elon Musk's investment in carbon capture technologies in 2021, and Bill Gates's influential book *How to Avoid Climate Disaster*. The wealth and influence of these individuals allow them to play key roles in climate action. Furthermore, Nisbet (2019) reported that more than 9,000 cities and municipalities, along with 245 state and regional governments worldwide, have committed to the goals of the 2015 Paris climate agreement. These efforts are backed by over 6,000 companies and 1,400 multinational corporations that have integrated climate change and carbon pricing into their business strategies (Nisbet, 2019). This financial support and commitment highlight the importance of both public and private funding for innovative climate initiatives. Furthermore, the visibility of private donors in the climate discourse can help attract more resources and raise awareness about climate issues, thereby enhancing governance efforts. By positioning themselves as leaders, these figures provide key financial backing and shape public discussions and policies, demonstrating the connection between finance and climate governance (Papin & Beauregard, 2024).

Municipalities are vital stakeholders in addressing climate change (Carvalho, 2018). As primary carbon emissions sources, cities face significant economic and social costs from extreme weather, mainly due to their high population and building densities (Cohen et al., 2019). Despite this, many municipalities remain locked into high-carbon development paths, heavily reliant on car-centric transportation and energy-intensive industries (Carvalho, 2018). While coordinated action among various levels of government is essential for tackling climate change (Canadian Climate Institute, 2022), communities must also adopt new development strategies, reduce carbon emissions, and enhance their resilience to increasingly frequent and severe weather events (Carvalho, 2018). In Atlantic Canada, it is essential to understand the various coordinated efforts and strategies for creating solutions to climate change. This includes knowing how to mobilize resources effectively and grasping the funding dynamics. Effective community-level climate action and coordinated efforts for building resilient communities depend on identifying and leveraging various funding sources—including philanthropy—to support new strategies and initiatives (Tennant et al., 2024).

Although there is considerable research on climate governance and the involvement of different financial actors, there is a clear gap in understanding the specific role of philanthropy in funding climate action at the community level, especially in Atlantic Canada. Much of the existing research has focused on global mitigation efforts and the financial commitments of high-profile individuals and corporations (Ayers, 2009). There is limited study of how these funds translate into local adaptation initiatives (Ackerman, 2009). In addition, the distinct challenges faced by Atlantic Canadian communities in addressing climate change, including rising sea levels, extreme weather events, and resource vulnerabilities, as highlighted by Dietz and Arnold (2021), require a deeper

analysis of funding dynamics and the interplay between philanthropy and other financial actors. This research addresses this gap by exploring finance as an essential component of climate governance. It will examine the role of philanthropy alongside other funding sources in supporting community-level climate action in Atlantic Canada. The study will also explore how philanthropic contributions can enhance resilience and adaptation efforts in the region while identifying the limitations and challenges that philanthropy faces in fulfilling its potential. By analyzing the effectiveness of these funding mechanisms within the context of Atlantic Canada, this research seeks to provide insights into optimizing financial support for climate initiatives, ultimately contributing to more robust climate governance frameworks.

Material and Methods

This study employs an integrative literature review, synthesizing existing research on philanthropy and climate change to critically examine philanthropy's role in financing climate action (de Souza et al., 2010). The review is guided by an overarching goal: to examine finance as a component of climate finance and evaluate philanthropy's role, challenges, and the effectiveness of philanthropic funding and other funding sources in tackling climate change, particularly at the community level in Atlantic Canada. The integrative review allows for a comprehensive synthesis of diverse findings, enabling an understanding of the issues central to the research question. This approach is particularly relevant to transdisciplinary research on climate finance, where contributions from multiple disciplines, such as environmental science, economics, and social policy, intersect to inform climate governance (Torraco, 2016). This methodology ensures a comprehensive, evidence-based analysis of philanthropy's role in climate financing, focusing on Atlantic Canada. The integrative literature review framework, supported by thematic and comparative analysis, provides a solid foundation for addressing the research question and contributing to scholarly discussions on climate finance.

Data Sources and Selection Criteria

Data for this study were collected from articles and reports identified through targeted searches in academic databases such as JSTOR, Scopus, and Web of Science, as well as key organizational and institutional reports. The database searches yielded 107 articles; an additional 24 sources were found through library resources, including papers, case studies, and abstracts. These were identified by reviewing the references of studies found in the database searches to determine which published and unpublished materials should be included.

The selection criteria focused on peer-reviewed articles and reports addressing core themes such as climate finance, philanthropy in climate governance, and community-level climate adaptation. Only studies published between 2000 and October 2024 were included to ensure the review's relevance, with particular attention to the literature covering Atlantic Canada and similar regions facing climate challenges. This targeted approach provided a strong foundation for evaluating the role and limitations of philanthropy within climate finance.

The selection process began by screening the 131 initially identified studies for thematic relevance. Seven duplicates were removed, and only peer-reviewed studies, including case studies and reports, were considered, as reviewing all articles in full was not feasible. Materials like correspondence, book chapters, commentaries, editorials, hearings, and personal communications were excluded due to accessibility issues. Furthermore, only articles published in English were included to prevent any potential misinterpretation. The titles and abstracts of the articles were reviewed to ensure they met the established criteria, resulting in the exclusion of 68 studies that either did not align with the study's objectives or lacked clear methodologies. In the end, 56 articles focusing on climate finance, philanthropy, climate change, and climate governance in Canada were included in the study.

To facilitate a structured analysis, articles were further categorized by primary themes:

i. Climate change in Canada, with a focus on Atlantic Canada
ii. Multi-level climate governance
iii. Financing Climate Change Action
iv. Philanthropy and climate change/climate finance
v. Philanthropy in Canada (with a focus on Atlantic Canada
vi. Environmental Philanthropy
vii. Donor trust/Accountability, evaluation, and assessing impact in philanthropy

This methodology ensures an evidence-based analysis of philanthropy's role in climate financing, specifically in Atlantic Canada. The integrative literature review framework, supported by thematic and comparative analysis, establishes a solid foundation for addressing the research question and advancing scholarly discussions on climate finance. Given the paper's emphasis on Atlantic Canada, additional consideration was given to studies focusing on this region or regions with similar climate and socio-economic conditions.

Data Synthesis and Integration

Data relevant to the research questions were extracted and analyzed through thematic analysis. This process involved identifying patterns and themes and noting similarities and relationships within the data. Initially, emerging patterns from the reviewed articles were identified, and similar or related data were grouped into six themes. Each theme was then carefully reviewed for accuracy and key findings. This analysis also uncovered sub-themes, such as philanthropic funding, scale limitations, and governance challenges, which helped shape the analysis section. Frameworks from sources like Ackerman (2009) and Brechin and Espinoza (2017) were used to evaluate each financing source's scale, accountability, and strategic focus. This comparison highlighted philanthropy's unique role and limitations in addressing gaps in climate finance, especially in community-based initiatives in Atlantic Canada.

The thematic analysis findings were synthesized to address the study's central research objectives. Results were organized according to the identified themes to create a coherent narrative. Insights

from various disciplines were integrated within a transdisciplinary sustainability framework. For instance, environmental science research on climate resilience was combined with policy analyses on philanthropic funding to provide a comprehensive view of philanthropy's potential and limitations in climate finance. Special emphasis was placed on the context of Atlantic Canada to highlight the region's unique challenges and opportunities, focusing on gaps in philanthropic support for long-term resilience initiatives.

Limitations

This study's scope is limited to secondary data analysis from selected articles, which may exclude recent research not covered in the initial 131 documents. Additionally, while the paper emphasizes the Atlantic Canadian context, some findings had broader applicability, while others are country-specific. Finally, the inherent variability in philanthropic priorities and approaches across different foundations may limit the generalizability of some findings.

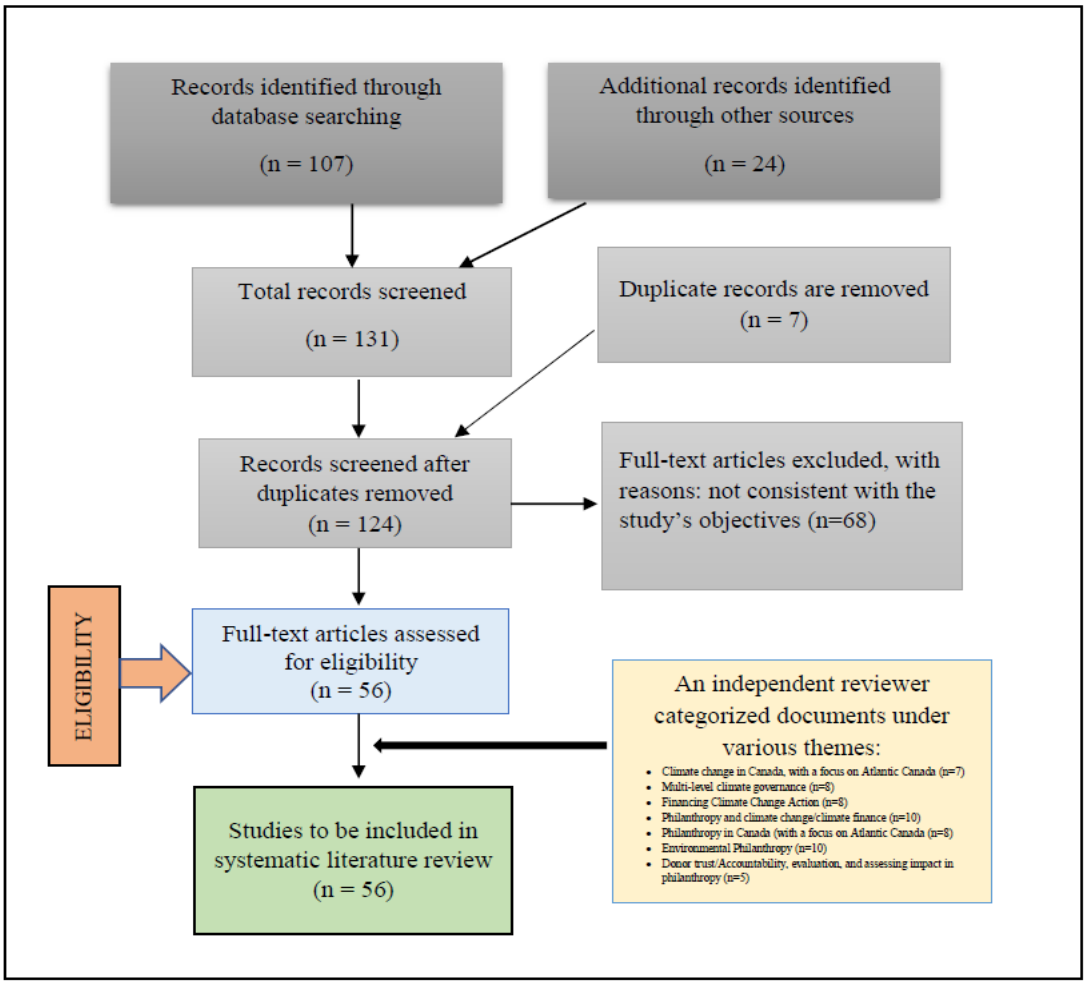

Figure 1: Flowchart for document selection strategy

Results

The literature review explored key aspects of philanthropy's role in climate finance, with a particular focus on community-level climate action. Finance is a crucial element of effective climate governance, directly impacting the success of both mitigation and adaptation efforts. Adequate financial resources are essential for implementing and scaling climate initiatives, particularly in vulnerable communities. International agreements, such as the Paris Agreement, underscore the importance of financial mobilization, while local governments require innovative mechanisms to tackle climate challenges. Carbon pricing and adaptive governance are vital tools for incentivizing climate action and ensuring flexibility in resource allocation. Philanthropy, especially through foundations and community-based organizations, supports grassroots climate initiatives, addresses local needs, and fosters community-driven solutions. However, challenges persist in mobilizing sufficient funds, ensuring equitable distribution, and aligning financial strategies with broader climate goals. The review also examines the diverse contributions of philanthropy, alongside other actors, in advancing climate solutions. Additionally, it highlights the limitations faced by philanthropy in effectively supporting climate action, including resource constraints, scalability issues, and structural barriers. Finally, it emphasizes strategies to enhance philanthropy's role in climate finance, calling for innovative, equitable, and collaborative approaches. The following sections provide a detailed analysis of these topics, offering insight into philanthropy's current impact and its potential in the future.

Financing as a Core Element of Climate Governance

Finance is a central pillar of effective climate governance, playing a central role in determining the success of climate mitigation and adaptation efforts. Some scholars argue that even the most ambitious climate policies cannot achieve their desired outcomes without sufficient financial backing (Bednar et al., 2018; Baird et al., 2015; Vogel, 2015). From global frameworks to local resilience strategies, financial mechanisms are vital to supporting climate action at every level of governance (Michaelowa et al., 2020).

Baird et al. (2015) contend that finance is central to the effectiveness of climate governance, as it directly influences the ability to implement and scale mitigation and adaptation initiatives. Without adequate funding, the impact and reach of climate governance frameworks are limited, as financial resources are essential for developing and executing emission-reducing and resilience-building projects. Chaloux et al. (2014) highlight that climate governance requires coordinated efforts across various levels of government, each utilizing its own resources and tools. As Doelle and Munroe (2012) noted, local governments have become key actors in climate action, particularly in areas where national and international responses have fallen short of scientific recommendations. However, their success in addressing climate change depends on the availability of sufficient financial resources (Brechin & Espinoza, 2017). This emphasizes the centrality of finance in local climate governance, as financial constraints often limit the scope and impact of local mitigation and adaptation efforts (Vogel et al., 2020). Without adequate funding, even the most ambitious

local initiatives may struggle to achieve meaningful progress (Doelle & Munroe, 2012). A case in point is Port aux Basques, Newfoundland and Labrador, which has been significantly affected by coastal erosion and flooding driven by climate change. While the town has developed detailed adaptation strategies, the lack of sufficient financial resources to carry out these plans has hindered its ability to enhance resilience and protect at-risk populations (Dietz & Arnold, 2021). This example illustrates how inadequate climate financing can impede a community's ability to address climate-related challenges effectively.

Financial Mechanisms in Local and International Agreements

Climate governance involves societies' systems and processes to manage mitigation and adaptation strategies in response to climate change (Vogel et al., 2020; Schenker & Stephan, 2014). Financial mechanisms are central to advancing efforts to address climate change at both local and global levels. They help mobilize resources, facilitate the flow of funds, and incentivize nations to take meaningful action. These financial tools are key to both international and local agreements (Schenker & Stephan, 2014). Effective climate governance depends on substantial financial mobilization, as demonstrated by major international agreements like the Kyoto Protocol and the Paris Agreement. The Kyoto Protocol, adopted in 1997, established binding emission reduction targets for industrialized nations and introduced financial instruments such as the Clean Development Mechanism (Leggett, 2020). The Paris Agreement, adopted in 2015, set a global goal to limit warming to well below 2°C and committed to mobilizing $100 billion annually to support climate efforts in developing countries (United Nations, n.d.). Both agreements underscore the vital role of finance in combating climate change (Michaelowa et al., 2020). Tennant et al. (2024) stress the importance of mobilizing financial resources, technology, and capacity-building support, particularly from developed countries, to assist developing nations. These global financial efforts are crucial for immediate climate action as well as for fostering long-term resilience and sustainable development (Antimiani et al., 2017).

The financial commitments outlined in these agreements emphasize the substantial funding required to meet global emissions reduction targets (Doelle & Munroe, 2012). The United Nations Framework Convention on Climate Change (UNFCCC, 2007) estimated that achieving a reduction of 7 gigatonnes (Gt) by 2020 would require an investment of approximately $140 billion, at $20 per ton of CO_2, with even more significant funding necessary for more ambitious reduction targets by 2030 (Ackerman, 2009). In Atlantic Canada, where climate variability and extreme weather events threaten infrastructure, substantial financial investment is essential to adapt critical infrastructure, including roads, power grids, water systems, and ports (Vogel, 2015). Due to their high initial costs, long lifespans, and interdependencies, these assets present particular challenges for adaptation. Thus, effective financial strategies are necessary to support infrastructure resilience as part of overall climate governance (Craft et al., 2013).

At the local level, municipalities like Halifax are taking the lead in climate mitigation and adaptation (Doelle & Munroe, 2012). Achieving these climate goals involves the collaboration of

various stakeholders, including governments, the private sector, and civil society (Schenker & Stephan, 2014). However, despite having authority over key emissions sectors such as building codes and transportation, local governments often lack the financial capacity to implement large-scale climate strategies (Vogel, 2015). As a result, external funding—via grants, private investments, and innovative financial mechanisms like green bonds—is crucial for turning local climate plans into action. Although local initiatives may be smaller in scale, they can significantly impact by raising public awareness, fostering community participation, and contributing to broader climate goals (Vogel et al., 2020). Combining top-down national policies with bottom-up local actions, a hybrid approach can drive systemic change. The case of Halifax illustrates how financial resources from local, provincial, and federal sources are essential for successful local climate governance (Doelle & Munroe, 2012).

The Need for Increased Financial Mobilization

Despite the urgent need for climate action, financial contributions in North America and globally have still not reached the necessary levels. The Intergovernmental Panel on Climate Change (IPCC) had previously called for developed countries to reduce emissions by 25-40% below 1990 levels by 2020 (Doelle & Munroe, 2012), but this deadline has passed. Focus has now shifted to even more ambitious goals. At the COP29 conference in November 2024, the pressing need for increased financial support was a major point of discussion. Negotiators worked to establish a new "collective quantified goal" for climate finance, aiming to boost funding well beyond the initial $100 billion annual target for developing countries (UNFCCC, 2024). This shift shows that more significant investments are needed to meet the emission reduction targets necessary to avoid the most severe climate impacts.

A 2018 IPCC report warned that the world was on course for a 3°C rise in global temperatures, and the UN Environment Programme's (UNEP) 2022 Emissions Gap Report predicted a 2.8°C increase if current policies remain in place (Cleary & Willcott, 2024). Both Canada and the United States have faced challenges in meeting the climate targets set by the IPCC, prompting regional and local governments to take on a more prominent role in climate mitigation efforts (Doelle & Munroe, 2012). National governments are often unable to meet their climate commitments due to factors such as political disagreements, competing economic priorities, limited funding, and challenges in implementing effective policies. As a result, regional entities are turning to local financing solutions to address their climate resilience needs (Doelle & Munroe, 2012; Carvalho, 2018). These difficulties at the national level make it necessary for local governments and organizations to find alternative sources of funding to tackle climate change more effectively at the regional and community levels. This highlights the need for innovative financial mechanisms and coordinated multi-level financing systems to drive climate action at all governance levels. These projections underscore the urgency of strengthening climate governance (Baird et al., 2015) through innovative financial tools and mechanisms that catalyze action across different governance levels (Carvalho, 2018).

Carbon Pricing

Climate change poses significant risks to public health and global economic stability (Salazar & Katigbak, 2022). Carbon pricing is a crucial financial tool for addressing these risks by incentivizing the reduction of greenhouse gas emissions. It assigns a monetary value to carbon dioxide (CO2) emissions, usually through a tax or cap-and-trade system (Cleary & Willcott, 2024). This method charges individuals or businesses for their emissions, making pollution more costly and encouraging the adoption of cleaner alternatives. In a carbon tax system, a fee is imposed on emissions, while in a cap-and-trade system, companies buy and sell permits to pollute within a set limit (World Bank, 2020). This price signal encourages organizations and individuals to adopt cleaner technologies, reduce energy consumption, and invest in low-carbon infrastructure (Cleary & Willcott, 2024). For instance, Cleary and Willcott (2024) note that Callahan and Mankin (2022) estimate that climate-related damages cost the global economy approximately US$6 trillion between 1990 and 2014. In response, carbon pricing has become a widely supported policy tool within climate governance, seen as essential for reducing emissions and mitigating the impacts of climate change (Cleary & Willcott, 2024, citing World Bank, 2020). However, its effectiveness can depend on the design and implementation of the pricing system, which varies across different regions and countries.

Nisbet (2018) argues that financing climate action through mechanisms like carbon pricing is crucial for understanding how global and local efforts can align to tackle climate challenges. At the same time, several analysts contend that philanthropists and environmentalists may have placed too much faith in carbon pricing as a panacea for effectively addressing climate change. Despite broad international support, the adoption of carbon pricing in climate governance has been inconsistent, and progress toward meaningful climate mitigation remains inadequate (Cleary & Willcott, 2024). Both Nisbet (2018) and Cleary and Willcott (2024) agree that carbon pricing is widely recognized as a crucial tool for addressing climate change. However, its implementation remains limited, with only 68 initiatives across 47 countries (Cleary & Willcott, 2024). While this suggests that, on average, each country has at least one initiative, the distribution of these initiatives is uneven, with some countries having multiple initiatives while others have none (Antimiani et al., 2017). This uneven distribution is a problem because certain regions, particularly those most vulnerable to climate change, may lack sufficient support or targeted initiatives (Levett, 2021). For example, some countries may have limited resources or face challenges in implementing climate resilience programs, leading to inadequate progress in addressing local climate needs (Cleary & Willcott, 2024). Nisbet (2018) noted that the real challenge is not just creating effective policies but ensuring that financial mechanisms are robust, scalable, and able to support climate action at all levels of governance.

The Importance of Adaptive Governance and Flexible Financing

Adaptive governance and flexible funding are important mechanisms for addressing climate change, offering the responsiveness and agility needed to cope with its unpredictable and evolving impacts (Schenker & Stephan, 2014). Adaptive governance refers to a dynamic decision-making process that ensures climate actions remain effective through collaboration and continual adjustments (Baird et al., 2015; Vogel et al., 2020). It is vital for tackling wicked problems, such as climate change, which are complex, interconnected, and resistant to straightforward solutions (Bednar et al., 2018). Flexible funding facilitates the rapid allocation of resources to address urgent climate challenges, including disaster response, resilience-building, and emerging risks (Baird et al., 2015).

According to Desanlis et al. (2021), the success of climate adaptation efforts depends on securing both stable and sufficient financial resources. Stable funding is crucial because climate adaptation programs often require lengthy and complex design and implementation processes (Bednar et al., 2018), which can be disrupted by political changes or shifting budget priorities. Despite increasing recognition of their importance, adaptation programs often face significant underfunding due to their limited visibility in public and political discussions (McCarthy, 2004). However, as awareness of climate change impacts grows, this situation is gradually improving (Desanlis et al., 2021). Adequate financial resources are essential for tasks such as conducting impact assessments and vulnerability analyses, as well as sustaining the necessary infrastructure for climate adaptation, including climate models, technical expertise, and outreach materials (Bednar et al., 2018). Thus, continuous and sufficient funding is necessary to ensure that climate adaptation efforts can progress from research and design to long-term implementation (Vogel, 2015). Adaptive governance has become an important response to climate change, a wicked problem characterized by uncertainty, complexity, and interconnectedness, which makes traditional governance approaches insufficient (Bednar et al., 2018). In Canada, adaptive governance and co-management have informed strategies in sectors like healthcare, law enforcement, and natural resource management, where multiple actors collaborate across jurisdictions to achieve common goals (Baird et al., 2015; Bednar et al., 2018). In the context of climate adaptation, however, a unified governance framework is still lacking at the national level despite localized efforts by organizations such as Health Canada and municipalities like Toronto and Mississauga (Bednar et al., 2018; Vogel, 2015). This fragmentation highlights the need for a more cohesive governance structure, supported by financial and institutional resources, to build resilience on a larger scale.

Adaptive governance requires diverse, flexible funding sources to address the evolving climate challenges. This includes collaboration among government agencies, non-governmental organizations, and the private sector, which can help avoid redundant efforts and maximize outcomes. Effective coordination between funding agencies is critical to ensure that initiatives are comprehensive and leverage the strengths of multiple partners (Bednar et al., 2018). Baird et al. (2015) stress the importance of governance in coordinating climate action, including adaptation,

through policies and collaborations that help societies address shared challenges. While collaboration among various stakeholders is increasingly common in climate governance, the role of government remains central as the accountable organizer of these efforts (Michaelowa et al., 2020). Climate adaptation governance is particularly complex due to the diverse range of stakeholders, the uncertainty of climate change impacts, and the novel nature of human-driven climate change (Bednar et al., 2018). For governance to be effective, it is essential to clearly define roles, responsibilities (Bednar et al., 2018), and expected outcomes while ensuring that the tools and strategies used are appropriate for the specific context of adaptation (Craft et al., 2013).

Financial Strategies to Enhance Climate Resilience

Climate finance also plays a central role in supporting global agreements such as the Paris Agreement, which emphasizes the importance of mobilizing financial resources for climate adaptation and mitigation efforts, especially in developing countries. These financial flows are facilitated through an intricate ecosystem of bilateral and multilateral aid, private finance, and development bank-managed trust funds (Michaelowa et al., 2020). They also note that multilateral development banks (MDBs) have established over 200 climate-related trust funds to aid developing countries and remote communities in their climate goals, with donor governments providing significant replenishments to ensure continuity in project funding. While the financial mobilization through these funds has been substantial, transparency and coordination challenges persist, affecting the efficient tracking and allocation of resources for effective climate action (Phillips, 2018).

In Atlantic Canada, shifts in infrastructure financing policies, such as the introduction of the $33 billion Building Canada Plan, reflect an increasing focus on large-scale, long-term investments (Craft et al., 2013). Craft et al. (2013) further stated that this program encompasses initiatives for Indigenous communities, supported through the First Nations Infrastructure Fund and a broader interdepartmental approach involving Public-Private Partnership Canada. However, despite these advances in infrastructure funding, there is limited integration of climate adaptation within these streams (Vogel et al., 2020), as indicated by an absence of adaptation-linked projects in the Departmental Performance Reports (Craft et al., 2013). This gap highlights an opportunity to embed climate considerations into long-term adaptation funding, which is essential for climate resilience.

Addressing Gaps in Climate Finance and Policy Implementation

For adaptation efforts to be effective, climate governance frameworks need to build financial strategies that secure initial funding and sustain ongoing adaptations (Bednar et al., 2018). This includes innovative financing tools like green bonds, carbon pricing, and sustainable investment standards that direct financial flows toward low-carbon initiatives and encourage private-sector investment in climate-friendly projects (Antimiani et al., 2017). Climate governance frameworks

must address the mobilization of funds and equity issues, ensuring that financial resources reach the regions and communities most vulnerable to climate impacts (Doelle & Munroe, 2012; Hoicka et al., 2023). The role of finance in climate governance is thus multifaceted, extending beyond a mere support mechanism to become a foundational element that shapes climate policies and determines their effectiveness. Financial strategies must be embedded within climate governance frameworks to achieve ambitious climate objectives, creating consistent and equitable financial flows to support climate resilience (Bednar et al., 2018), particularly in regions like Atlantic Canada, where local adaptation is essential to meet growing climate risks (Dietz & Arnold, 2021).

Finance is not simply a supportive element in climate governance but a foundational component that shapes climate policy effectiveness at every governance level (Doelle & Munroe, 2012). International agreements like the Paris Agreement provide essential funding frameworks, yet local and regional governments require innovative financial tools and adaptive governance to effectively address their unique climate challenges. A diversified and flexible approach to financing, with mechanisms such as carbon pricing, green bonds, and multi-level partnerships, is vital to bridge the gap between climate ambitions and real-world implementation (Conteh, 2018). Only through sustained and well-coordinated financial support, including philanthropic financing, can climate governance achieve its objectives to ensure resilience and sustainable development amid the growing risks of climate change. Philanthropic contributions are significant in bridging funding gaps and catalyzing innovative solutions, making them an essential component of the broader financial landscape for climate action.

Role of Philanthropy in Financing Community-Level Climate Action

The philanthropic sector is critical in advancing climate change mitigation and adaptation in Atlantic Canada. Philanthropy, broadly defined as the private provision of resources for public benefit by individuals, corporations, and foundations (Barman, 2017), encompasses various organizations, from formal foundations to informal community groups (Elson et al., 2018). A growing emphasis on place-based philanthropy emphasizes the importance of addressing the distinct needs of specific communities or regions (Levett, 2021). This approach is particularly relevant in Atlantic Canada, where climate change impacts are highly localized and demand tailored solutions (Ivany, 2021). In Canada, various philanthropic organizations and foundations play a central role in the philanthropic landscape. These include family foundations (e.g., the Donner Canadian Foundation), corporate foundations (e.g., RBC Foundation, Suncor Energy Foundation) (Squires, 2022; Ivany, 2021), and public foundations such as community foundations and pooled resource organizations like the Canadian Women's Foundation, all of which are vital in mobilizing local resources for climate action (Elson et al., 2018). However, only organizations registered with the Canada Revenue Agency (CRA) as charities or non-profits qualify for recognition within the country's regulatory framework, with distinct criteria for each category (Ivany, 2021). As grant-making entities, foundations distribute private or corporate wealth to support public-benefit causes, often through environmental, social justice, or community-focused

initiatives (Barman, 2017). Ivany (2021) states that while these foundations aim to serve the public good, their funding priorities are frequently influenced by the values of their founders or the interests of the corporations that support them. As a result, the agendas of funded organizations are often shaped by the preferences of funders, which may prioritize economically viable solutions, such as clean growth, over more transformative approaches to environmental or social challenges (Elson et al., 2018).

The Canadian Philanthropy Commitment on Climate Change, launched in 2021, shows the sector's proactive stance on climate action. This initiative calls on Canadian foundations to incorporate climate considerations into their missions, focusing on regional resilience and aligning efforts with Indigenous rights (Ivany, 2021). Place-based philanthropy has since become instrumental in this approach, as it enables foundations to bridge government funding gaps and fund sustainable, community-driven solutions that address specific climate impacts in Atlantic Canada (Squires, 2022). Campbell (2019) notes that community-based organizations (CBOs), often supported by philanthropic funding, are particularly well-suited and situated to address climate issues at the local level. Alongi and Tilghman (2021) emphasize that philanthropic organizations and foundations with climate and environment programs typically employ four key strategies: granting and regranting, policy advocacy, community organizing, and land conservation. In developing their program strategy, some foundations are shifting their approach to prioritize allocating some percentage of their grant-making to non-profit organizations operating at the grassroots level, aiming to drive forward local solutions (Ramirez et al., 2022). As Campbell (2019) highlights, these community-based organizations are uniquely positioned to push for meaningful climate action at the local level. As government support decreases, philanthropic funding plays a crucial role in enabling CBOs to undertake land conservation, community organizing, and resilience-building efforts, addressing the pressing needs of rural and climate-vulnerable communities in Atlantic Canada (Squires, 2022). This grassroots, place-based approach aligns broader environmental goals with localized strategies, reinforcing philanthropy's essential role in climate adaptation (Ramirez et al., 2022).

The presence of both private and public foundations in Canada has catalyzed the formation of key intermediary organizations designed to support the sector's development through targeted policy advocacy and educational programs (Elson et al., 2018). These organizations, structured into resource networks, foster collaboration and enhance capacity-building efforts across the philanthropic landscape (Ivany, 2021). Noteworthy examples include Community Foundations of Canada, founded in 1999, which supports community foundations, and Philanthropic Foundations Canada, established in 1992, which serves private foundations. Both organizations are instrumental in strengthening the philanthropic sector in Canada and advancing its engagement with social and environmental issues (Elson et al., 2018). The allocation of philanthropic resources to climate change initiatives remains a topic of debate within the literature. Some scholars, such as Ayers (2009), contend that a larger share of philanthropic funding is directed toward adaptation efforts aimed at reducing the immediate impacts of climate change and supporting recovery in

vulnerable communities. In contrast, others, such as Antimiani et al. (2017), highlight significant philanthropic investments in mitigation measures designed to reduce future climate risks. However, the precise distribution of funds between adaptation and mitigation remains difficult to ascertain. Furthermore, philanthropic funding for climate action in Canada is not evenly distributed, with certain provinces, notably British Columbia and Ontario, receiving a disproportionately large share of the resources (Squires, 2022).

Philanthropic foundations are increasingly directing resources toward climate initiatives that integrate both adaptation and mitigation strategies within broader sustainable development frameworks (Squires, 2022). These foundations are pivotal in supporting innovations in low-carbon technologies, advancing systemic change, and empowering marginalized communities through collaborative efforts (Hoicka et al., 2023). Additionally, many foundations are adopting impact-driven investment strategies designed to generate financial returns and measurable social and environmental outcomes (Barman, 2017). Despite these efforts, there remains a significant need to expand the equity and scale of funding across various regions and sectors to address the complex and multifaceted challenges posed by climate change (Levett, 2021). Although philanthropic foundations are instrumental in climate action, their funding for climate-related initiatives is relatively modest compared to other sectors, such as health and education (Ayers, 2009; Levett, 2021). Environmental funding accounts for only a small portion of total foundation grants, with climate-focused projects receiving an even smaller share (Desanlis et al., 2021; Squires, 2022). This disparity underscores the urgent need for increased philanthropic investment in climate change mitigation, adaptation, research, and efforts to overcome the barriers that hinder more effective climate action (Ackerman, 2009). In response, foundations increasingly embrace innovative approaches like impact investing, which seeks to generate financial returns and measurable social and environmental benefits (Colting-Stol, 2020). This growing focus on impact investing reflects the expanding potential of philanthropy to drive meaningful and transformative change in addressing the climate crisis.

Corporate foundations like Suncor Energy and RBC typically direct their climate change funding toward initiatives that align with their business priorities and economic goals (Carroll et al., 2021). For instance, Suncor Energy, a leading oil and gas company, has concentrated its funding on carbon capture and storage technologies, which aligns with its commitment to continuing fossil fuel operations (Levett, 2021). On the other hand, philanthropic organizations with a broader environmental focus, such as the David Suzuki Foundation, have supported various climate change initiatives in Atlantic Canada (Ivany, 2021). These include renewable energy projects, conservation efforts, and community-based adaptation strategies. They tend to direct resources toward conservation and clean growth initiatives, which align climate action with economic development. This often includes market-driven solutions, such as carbon offsetting and emissions trading (Baird et al., 2015). For example, Carroll et al. (2020) observed that the Suncor Foundation allocated 66.2% of its environmental funding to clean growth projects. This demonstrates the fossil fuel industry's influence in prioritizing emission reduction strategies that support low-carbon

technologies while promoting economic growth. Philanthropic foundations, therefore, aim to support grassroots organizations by enhancing their autonomy and effectiveness rather than controlling their mission or leadership (Carroll et al., 2021). Foundations help channel these organizations into more professional activities, boosting mobilization for social causes, including climate change. This approach focuses on facilitating the growth and impact of grantees to contribute more effectively to climate action (Delfin & Tang, 2008).

Clark et al. (2018) note that foundations often act as intermediaries that shape the environmental agenda by directing funds in ways that emphasize economic sustainability alongside ecological goals. A notable example is the Canadian Environmental Grantmakers Network (now Environment Funders Canada), which pools funds from various foundations and distributes them to ENGOs (Colting-Stol, 2020). Corporate-linked donors' interests often shape these grants' direction, reinforcing a conservationist or clean growth-focused agenda. This funding dynamic results in a concentration of resources among a small subset of ENGOs, particularly those with missions focused on conservation and clean growth (Pearson, 2020). In 2017, nearly half of all environmental philanthropic funding was directed toward conservation-focused organizations, with large grants disproportionately supporting clean growth initiatives (Levett, 2021; Baptista & Perovich, 2020). Carroll et al. (2020) observed that although only 3.3% of donations to environmental non-governmental organizations (ENGOs) went to clean growth organizations, these donations accounted for 9.5% of total funding. This pattern reflects a preference for "affirmative" solutions, such as habitat protection and emissions reduction, which address the immediate symptoms of environmental issues without challenging the underlying economic systems that drive climate change. Foundations partner with organizations in science, education, health, and the environment to contribute to research and strengthen community resilience (Squires et al., 2022). Their hybrid grant-making models blend top-down and participatory approaches, identifying effective projects and fostering inclusivity in climate action (Colting-Stol, 2020). An example is the Community Foundations of Canada (CFC), which supports the Sustainable Development Goals (SDGs) through planning, granting, and producing Vital Signs reports to inspire community foundations. Their work strengthens community resilience and promotes partnerships to address local and global challenges, including climate change. CFC's collaborative approach highlights the role of philanthropy in driving community-driven, impactful climate action (Hale, 2010).

Role of Different Actors

Barman (2017) states that philanthropy involves three main types of donors: individuals, foundations, and corporations. In North America, individuals contribute the largest share of charitable donations, accounting for about 70% of all contributions. For instance, in 2023, individuals donated approximately $374.40 billion, which made up 67% of total charitable giving in the United States (Barman, 2017; Nisbet, 2018). People can donate either during their lifetime or as a bequest after they pass away (Nisbet, 2018). This substantial level of individual

philanthropy depicts the vital role that personal donations play in supporting various charitable initiatives, highlighting the impact of individual contributions in fostering social and environmental change. Barman (2017) distinguishes between “mega” donors, who give large sums, and “mass” donors, who give smaller amounts. Foundations are another key source of philanthropy (Carroll et al., 2020), contributing 15% of charitable donations in North America (Barman, 2017). There are different types of foundations: Independent foundations are funded by one person, family, or corporation; community foundations are funded by many donors and focus on local needs; and operating foundations, like museums, use their endowments to run their own programs (Bednar et al., 2018; Barman, 2017). Corporations also give money and goods through their own foundation or directly, making up about 5% of all charitable giving (Michaelowa et al., 2020). Many companies encourage employee donations through payroll deductions, matching gifts, and volunteer programs (Baird et al., 2015). Corporate giving is often part of a company’s broader Corporate Social Responsibility (CSR) efforts, focusing on how they treat their stakeholders (Barman, 2017).

In Atlantic Canada, diverse actors, including philanthropic organizations, CBOs, NGOs, and private sector contributors, play pivotal roles in financing community-level climate action. Philanthropic foundations, such as the Ivey and McConnell Foundations, have been instrumental in funding renewable energy initiatives, environmental conservation projects, and local resilience programs, particularly for rural and vulnerable communities (Reeder et al., 2020; Carroll et al., 2020). Community-based environmental organizations (CBEOs) partner with local communities on climate adaptation projects, such as retrofitting infrastructure for climate resilience and promoting ecosystem restoration, often engaging local leaders to enhance community ownership and trust (Reeder et al., 2020). Foundations with environmental mandates have also supported renewable energy projects, fostering the adoption of solar and wind technologies and encouraging energy efficiency practices. These organizations act as intermediaries, channeling funds from federal and corporate entities toward grassroots projects that directly address local climate vulnerabilities (Clark et al., 2018).

In addition to foundations, corporate involvement in climate finance—though relatively modest compared to public funding—supports “clean growth” initiatives through corporate foundations and industry associations, focusing on reconciling environmental goals with economic interests (Carroll et al., 2021). Bednar et al. (2018) state that local CBOs and NGOs often partner with municipal and provincial governments to provide grassroots climate solutions. Initiatives such as the Federation of Canadian Municipalities (FCM) and the Intact Centre on Climate Adaptation (ICCA) offer valuable tools for conducting vulnerability assessments and providing resources to support climate adaptation efforts (Bednar et al., 2018). The involvement of community-level actors and the private sector portrays the growing trend toward a multi-stakeholder approach to climate finance in Atlantic Canada. However, this approach often prioritizes business-oriented “clean growth” solutions, which focus on market-driven environmental strategies, over more transformative climate actions that address the root causes of climate change (Carroll et al., 2020).

Non-profit organizations, particularly environmental advocacy groups, have played an essential role in promoting climate action by working with various levels of government—federal, provincial, municipal, and Indigenous—as well as public agencies and the courts (Campbell, 2019). According to Carroll et al. (2020), these organizations have grown in response to changes in government policy, stepping in to fill gaps in regulation and public services left by the state, a process described by Goldman (2005) as the "neo-liberalization of civil society." While these organizations help advocate for marginalized and low-income communities, their work can sometimes align with the interests of the state and corporations, especially when they receive funding from these sources (Carroll et al., 2021; Ayers, 2009).

Carroll et al. (2020) assert that non-profit organizations in Canada commonly endorse the "clean growth" model, which seeks to reconcile economic and environmental objectives within the confines of the existing capitalist framework. This approach stands in contrast to Indigenous and climate justice movements, which call for a just transition that centers on reconciliation, community-led solutions, and energy democracy. Foundations and ENGOs that support clean growth commonly collaborate with government actors at all levels, with Indigenous groups asserting leadership in climate adaptation and land stewardship (Reeder et al., 2020). However, climate financing is quite complex at the international level, incorporating funds such as the World Bank's BioCarbon Fund, Global Environment Facility, and Green Climate Fund. These initiatives combine federal contributions with private and philanthropic funding to support sustainable land use and renewable energy projects (Carroll, 2020). Development Finance Institutions (DFIs) and multilateral development banks, such as the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD), also play an instrumental role in financing climate resilience projects, often in coordination with local governments and Indigenous stakeholders (Michaelowa et al., 2020). Through initiatives like green bonds and public-private partnerships, DFIs and Indigenous and municipal actors contribute to climate finance, underscoring the critical role of multi-level collaboration for sustainable community-level climate action (Clark et al., 2018).

This network of government, business, and charitable organizations supports strategies like carbon pricing, using renewable energy, and nature-based solutions such as protecting forests and wetlands. These approaches have gained broad political and financial support (Carroll et al., 2020; Reeder et al., 2020). Their close connection to local contexts and stakeholders enables them to deliver targeted programs while complementing government-led strategies, enhancing both the effectiveness and scalability of climate resilience efforts (Ayers, 2009; Carroll et al., 2020). Although federal and provincial governments allocate funding for climate adaptation programs, these resources are often distributed through NGOs, foundations, and community-based organizations to enhance local impact (Vogel, 2015). By leveraging the expertise and local networks of intermediary organizations, this approach helps communities—particularly those in rural and vulnerable regions—build resilience to climate change (Squires, 2022). These organizations support community-driven initiatives such as infrastructure retrofitting, ecosystem

conservation, and sustainable resource management (Colting-Stol, 2020). In addition, they facilitate access to government climate funding, ensuring that programs are aligned with local needs and broader government strategies, thereby increasing the effectiveness and scalability of climate resilience efforts (Carroll et al., 2020).

Limitations and Challenges in Philanthropy Supporting Climate Action

Philanthropic foundations are essential in addressing climate change, both globally and locally (Madénian & Neste, 2023). They have helped shape international climate policies and have supported cities in taking action (Morena, 2023). These foundations have been vital in funding climate change mitigation and adaptation efforts in vulnerable regions like Atlantic Canada (Gamble, 2014). Their contributions help fund local projects that reduce emissions, build resilience, and address the specific climate challenges in these areas, often filling funding gaps left by governments (Lutter, 2010; Gamble, 2014). However, its potential to drive transformative climate action is undermined by structural, operational, and ideological challenges (Delfin & Tang, 2008). These limitations constrain the sector's capacity to foster equitable, systemic, and sustainable solutions, revealing inherent inefficiencies in its current models and practices.

A fundamental limitation in philanthropy's climate action efforts is the inequitable distribution of resources across geographic regions (Squires, 2022). In Canada, philanthropic funds are disproportionately allocated to economically developed provinces such as Ontario and British Columbia, while regions like Atlantic Canada remain critically underfunded (Levett, 2021). Despite being among the most climate-vulnerable areas—facing rising sea levels, extreme weather events, and coastal erosion—Atlantic Canada receives only 2.7% of the country's total environmental philanthropic funding (Squires, 2022; Gamble, 2014). This disparity intensifies socio-economic vulnerabilities, particularly in rural and Indigenous communities (Ivany, 2021), which often lack the institutional capacity to compete for large-scale funding opportunities (Vogel, 2015).

Philanthropic funding mechanisms tend to favor urban-based organizations that can meet conventional grant criteria such as measurable outcomes, established administrative structures, and organizational capacity (Baptista & Adrienne, 2020). This preference sidelines smaller, remote communities, leaving critical climate adaptation needs unmet (Squires, 2022). For instance, underfunding in Atlantic Canada has hindered progress in sustainable fisheries, water management, climate-resilient infrastructure, and forest conservation (Ivany, 2021). This neglect perpetuates regional disparities, weakening national efforts to build equitable and comprehensive climate resilience (Taylor & Blondell, 2023).

Another challenge lies in philanthropy's prioritization of market-driven "clean growth" strategies, such as renewable energy projects, carbon offset programs, and emission reduction technologies (Carroll et al., 2020). While these initiatives contribute to incremental progress, they often fail to address the root causes of environmental degradation, including economic inequality and unsustainable consumption patterns (Madénian & Neste, 2023). This focus aligns philanthropic

goals with corporate and economic development agendas, often at the expense of transformative, community-centered approaches (Michaelowa et al., 2020). In Atlantic Canada, the preference for market-based solutions marginalizes rural and Indigenous communities, whose justice-oriented, place-based solutions frequently diverge from the agendas of prominent philanthropic actors ((Ivany, 2021; Ramirez et al., 2022). These systemic socio-economic drivers of climate vulnerability remain insufficiently addressed, limiting the potential for long-term structural change (Aminur et al., 2024). The result is a philanthropic sector that reinforces existing power dynamics rather than challenging them (García, 2023).

Furthermore, philanthropic funding models often exhibit structural biases that favor established organizations with significant institutional capacity (Baptista & Adrienne, 2020). Grassroots initiatives—especially those led by low-income, Indigenous, or historically marginalized groups—frequently struggle to secure funding, as they do not align with conventional grant criteria (Ramirez et al., 2022). This bias diminishes the inclusivity of philanthropic interventions, sidelining diverse perspectives in climate governance and decision-making. Grassroots initiatives, however, are uniquely positioned to deliver place-based solutions tailored to local climate risks and socio-economic conditions (Delfin & Tang, 2008). Expanding philanthropic support for these initiatives would democratize environmental governance, fostering social innovation and enabling communities to co-create climate adaptation strategies that reflect their lived experiences and priorities (Ivany, 2021). Without this shift, the transformative potential of philanthropy remains constrained.

Philanthropy faces a significant limitation in its lack of diversity, which creates barriers for grassroots organizations, especially those led by marginalized communities (Ramirez et al., 2022). Many philanthropic foundations are controlled by wealthy, predominantly white individuals, which shapes how they engage with social movements and impact vulnerable communities (Taylor & Blondell, 2023). For example, Ramirez et al. (2022) found that less than 12% of environmental funders are people of color, highlighting the racial disparity within the sector. This lack of diversity can lead to bias, causing funders to overlook or misunderstand the needs of marginalized groups. As a result, grassroots organizations, particularly in poorer areas, are often seen as too risky or unprofessional to receive funding (Taylor & Blondell, 2023). Critics also point out that philanthropy is deeply tied to historical injustices, such as slavery, colonization, and land theft, which allowed wealth to concentrate in the hands of a few (Ramirez et al., 2022). This history of accumulated wealth reinforces existing power imbalances and perpetuates inequality. Many argue that the concentration of philanthropic power in the hands of wealthy individuals or foundations exacerbates these injustices and perpetuates a system of unequal influence (García, 2023). To address these issues, there is a growing call for a shift toward more democratic, participatory, and accountable forms of philanthropy (Ramirez et al., 2022; García, 2023). Critics of philanthrocapitalism emphasize the need for philanthropy to be more inclusive and transparent to serve marginalized communities better and address pressing social issues. The challenge lies in

transforming giving models to make philanthropy more effective, equitable, and responsive to the needs of those it aims to support (Barman, 2017; García, 2023).

Philanthropic interventions often focus on short-term, measurable outcomes, such as the number of people served or immediate project results (Lefèvre & Fontan, 2017). For example, providing disaster relief funding can be easily quantified by the amount of aid distributed (Clark et al., 2018). In contrast, systemic change aims to address the root causes of issues, like advocating for policy reforms, which, while measurable over time, are more challenging to quantify in the short term (Lefèvre & Fontan, 2017). While this approach is helpful for evaluation purposes, it can fragment climate action efforts and overlook the deeper causes of climate vulnerability. Jensen and Dowlatabadi (2018) show that while tiny, incremental solutions can be helpful, they often fail to address more significant structural issues like economic inequality, political inaction, and harmful economic systems. This issue is particularly evident in Atlantic Canada, where many rural and Indigenous communities face significant barriers to adopting more transformative climate adaptation strategies (Vogel, 2015). These barriers include limited resources, lack of technical expertise, and reduced political influence. Short-term philanthropic projects with narrow goals can worsen these inequalities, leaving communities unable to pursue comprehensive and sustainable solutions for climate resilience (Carroll et al., 2021).

Traditional philanthropic models are often shaped by donor priorities, which tend to align more with corporate interests or personal agendas than with the needs of marginalized communities (Schenker & Stephan, 2014). Carroll et al. (2020) critique the neo-liberalization of philanthropy, where the focus on measurable impacts and financial returns limits the sector's ability to support justice-driven solutions. Baptista and Perovich (2020) identify two key consequences of this structural limitation: an overemphasis on technical fixes, like emission reduction technologies, and reinforcing existing power imbalances by directing resources toward projects that align with donor preferences. These practices restrict philanthropy's potential to drive meaningful structural change (Taylor & Blondell, 2023). In prioritizing projects that deliver immediate, measurable results, philanthropic organizations often overlook the broader, long-term efforts needed to address systemic inequalities and empower marginalized groups (Baptista & Perovich, 2020). This focus on short-term outcomes can impede progress on deeper structural issues, limiting the potential for sustained social change (Carroll et al., 2021).

Philanthropy holds significant potential to drive climate action and social innovation, particularly in under-resourced regions such as Atlantic Canada (Colting-Stol, 2020). However, the sector's limitations—including inequitable funding distribution, reliance on market-based solutions, bias against grassroots initiatives, fragmented focus, and structural barriers—constrain its ability to fulfill this potential. To overcome these challenges, philanthropy must adopt a more inclusive and transformative approach (Levett, 2021). This involves equitable allocation of resources to historically underfunded regions, prioritizing community-led and justice-oriented initiatives, and fostering long-term, systemic change (Carroll et al., 2020). As philanthropy directly addresses these challenges and implements innovative strategies, it can drive meaningful progress in the fight

against climate change. This will help create a more sustainable and equitable future for Atlantic Canada and communities worldwide.

Enhancing Philanthropy's Role in Climate Finance

Philanthropy holds immense potential as a transformative force in addressing climate challenges by empowering communities, fostering grassroots leadership, and addressing systemic barriers to participation (McCarthy, 2004). However, to fully realize this potential, philanthropy must adopt more inclusive, equitable, and collaborative approaches (Taylor & Blondell, 2023). Philanthropic foundations significantly influence public policy by funding research, supporting policy implementation, and evaluating impacts on communities (Michelson, 2021). Despite this, concerns about legitimacy and accountability persist, particularly for private foundations that operate without transparency regarding their wealth, allocation, and beneficiaries (Morena, 2016). Critics like Barman (2017) and Carroll et al. (2020) argue that philanthropic practices often reflect the broader functions of capitalism, potentially perpetuating inequalities. To address these concerns, philanthropy should prioritize transparency and participatory governance models (Schenker & Stephan, 2014). For example, Lefèvre and Fontan (2017) emphasize the transformative potential of participatory grant-making, where activists actively shape grant allocation. Such approaches can dissolve the traditional donor-recipient dichotomy, ensuring resources align with community priorities (Schenker & Stephan, 2014). This evidence shows that philanthropy's effectiveness lies in how resources are governed, not merely their scale.

Grassroots initiatives are indispensable for addressing localized climate challenges; however, overemphasizing these efforts can hinder philanthropy's broader impact (Ramirez et al., 2022). Over-prioritization of grassroots solutions, however, often leads to fragmented interventions that fail to address systemic drivers of climate vulnerability and inequality (García, 2023). While grassroots actions excel at meeting immediate community needs, they often lack the capacity and scalability required to address structural climate governance challenges (McCarthy, 2004). For example, grassroots initiatives have advanced local adaptation strategies in Atlantic Canada. However, systemic issues like weak policy frameworks remain unaddressed due to insufficient alignment between grassroots actions and higher-level governance (Gamble, 2014). To mitigate this imbalance, philanthropy must adopt a dual approach of integrating localized actions with systemic reforms (Barman, 2017). Collaboration between grassroots actors, larger institutions, and national or international organizations is essential. Foundations can play an intermediary role, bridging gaps and fostering alignment between community efforts and broader climate strategies (Nisbet, 2019).

Philanthropic funding models must evolve from prescriptive practices, where external experts dictate solutions, to more inclusive frameworks that empower local actors (Delfin & Yung, 2018). Advocacy-focused strategies can amplify community voices, enabling grassroots actors to address systemic barriers effectively (García, 2023). This shift necessitates multi-year, unrestricted funding to build grassroots organizations' technical, administrative, and financial capacities

(Baptista & Perovich, 2020). Decentralized decision-making models provide a promising framework for inclusive philanthropy. Drawing on natural ecosystems, where decision-making is distributed rather than centralized, philanthropic networks can create adaptive, context-sensitive interventions (Garcia, 2017). These approaches use the knowledge and skills of different people and groups, helping to allocate resources responsively and effectively.

McCarthy (2004) pointed out that philanthropic funding has historically fostered a competitive environment, which has led to a sense of scarcity among grantees, particularly in underfunded areas like climate justice. However, the recent increase in climate funding offers a chance to move from competition to collaboration (Desanlis et al., 2021). Foundations should focus on distributing resources more equitably, especially to marginalized communities in underserved areas (Ramirez et al., 2022). As philanthropic organizations prioritize partnerships over competition, they can drive lasting change (Squires, 2022). Supporting advocacy and building community capacity can also help people take active decision-making roles (Taylor & Blondell, 2023). This shift can move philanthropy from charity to justice (Saifer et al., 2021), addressing systemic barriers and strengthening communities for greater resilience (García, 2023).

Discussion

The literature on climate finance and governance reveals several key themes, including the significant role of philanthropy, the diverse contributions of various actors, and the urgent need for a transformative approach. These themes will be explored in detail to provide insights into how finance is a crucial component of climate governance, the role of philanthropy in funding community-level climate action, and how principles such as equity, inclusivity, and innovation can lead to sustainable and effective climate finance strategies.

Financing as a Core Element of Climate Governance

The literature shows that financing is the backbone of climate governance, shaping the scale, scope, and sustainability of climate action. Financial mechanisms are key to advancing mitigation and adaptation, supporting global commitments like the Paris Agreement, and driving action at all levels (Michaelowa et al., 2020; Doelle & Munroe, 2012). However, gaps in financial mobilization, coordination, and accessibility continue to hinder progress, highlighting the need for adaptive governance and innovative financial tools. Often lacking resources for large-scale initiatives, local governments rely on external funding, such as green bonds and public-private partnerships (Vogel, 2015; Doelle & Munroe, 2012).

Carbon pricing, green bonds, and multilateral trust funds are critical to addressing the implementation gap, but challenges remain. For instance, while carbon pricing is widely endorsed, it is underutilized globally (Cleary & Willcott, 2024). Green bonds show promise, but their integration into adaptation projects remains limited (Craft et al., 2013). Ensuring equitable financial support for developing countries and vulnerable populations, as emphasized in the Paris Agreement, is also crucial (Antimiani et al., 2017). Adaptive governance—characterized by

flexible, collaborative approaches—can improve resilience and financial planning (Bednar et al., 2018). Local governments, like those in Halifax, play a critical role, but their success depends on financial support from all levels (Doelle & Munroe, 2012). A hybrid approach combining top-down and bottom-up strategies is essential for achieving comprehensive climate governance.

Financial strategies must be stable, equitable, and adaptable to bridge the gap between climate ambitions and outcomes. Key actions include expanding carbon pricing, improving transparency in multilateral funding, integrating adaptation into infrastructure financing, and leveraging innovative tools like green bonds for private-sector investment. Addressing financial gaps is crucial to achieving sustainable, resilient climate outcomes.

Influential Role of Philanthropy in Financing Community-Level Climate Action

Philanthropy is important in advancing climate change mitigation and adaptation efforts because it provides flexible and targeted funding that complements public and private sector initiatives (Squires, 2022). This is especially crucial in areas where traditional financial sources may be limited or slow to respond (Ivany, 2021). Philanthropy can support innovative, community-driven solutions that may not align with government and business sectors' immediate interests or timelines, enabling quicker and more localized action (Levett, 2021). Additionally, philanthropic funding often focuses on marginalized and vulnerable communities, ensuring that climate resilience efforts are equitable and inclusive, reaching those most affected by climate change (Nisbet, 2019). In regions like Atlantic Canada, which face highly localized climate vulnerabilities, philanthropic organizations serve as crucial intermediaries, bridging gaps in government funding and providing context-specific solutions (Gamble, 2014). These organizations, spanning the private, corporate, and public sectors, employ various strategies—including grants, policy advocacy, and community organizing—to drive climate action (Alongi & Tilghman, 2021). The emphasis on place-based approaches in philanthropy allows global environmental goals to be better aligned with local needs (Squires, 2022). This helps grassroots organizations tackle the unique challenges faced by communities that are most vulnerable to climate change (Campbell, 2019; Ramirez et al., 2022).

Corporate foundations, such as those associated with RBC and Suncor Energy, often channel their financial support into clean growth initiatives and low-carbon technologies, reflecting their alignment with broader economic interests (Carroll et al., 2020). While these strategies may encourage market-driven solutions promoting green technologies (Baptista & Perovich, 2020), they also prioritize economically viable actions over more transformative or systemic climate measures (Baird et al., 2015). This approach may inadvertently limit the scope of climate action, particularly about social justice and equity considerations (McCarthy, 2004). Furthermore, disparities in the geographic distribution of philanthropic funding—where provinces like British Columbia and Ontario receive disproportionate shares—highlight the need for a more equitable allocation of resources to ensure that vulnerable regions, such as Atlantic Canada, are not left behind in the push for climate resilience (Squires, 2022).

Innovative approaches within the philanthropic sector, such as impact investing, have expanded the potential for addressing climate challenges by linking financial returns with measurable environmental outcomes (Colting-Stol, 2020). However, environmental funding remains a small fraction of overall philanthropic expenditures despite these innovations, with climate-specific initiatives receiving even less attention (Desanlis et al., 2021; Levett, 2021). This underinvestment underscores the urgency of increasing philanthropic contributions to climate action, particularly in areas such as research, adaptation, and mitigation, where financial resources remain insufficient to meet the scale of the crisis (Ackerman, 2009). Foundations also function as important intermediaries within the climate funding landscape, shaping environmental agendas through strategic investments. For example, networks like Environment Funders Canada (EFC) help pool resources to amplify the impact of grants, yet their focus tends to be on conservation-based initiatives that may inadvertently sideline more systemic approaches to climate governance (Clark et al., 2018; Pearson, 2020). While these funding strategies are critical for addressing immediate environmental needs, they often fail to address the broader socioeconomic drivers of climate change, which are central to the long-term sustainability of climate action (Baptista & Perovich, 2020).

Despite these limitations, philanthropic foundations remain essential in fostering cross-sectoral collaboration, strengthening community resilience, and supporting innovative solutions that integrate both adaptation and mitigation strategies within sustainable development frameworks (Squires, 2022; Hoicka et al., 2023). When philanthropy supports community-led initiatives that emphasize fairness and inclusion, it can play a crucial role in addressing the specific challenges of climate change at the local level. Expanding the scale and inclusiveness of philanthropic investments is essential to unlocking the sector's full potential to contribute to both local and global climate goals. In this way, philanthropy's growing involvement in climate action can offer a valuable opportunity to make meaningful progress toward a more sustainable and resilient future.

The Role of Different Actors in Climate Finance

Individuals, foundations, corporations, CBOs, and NGOs play essential roles in climate finance (Carroll et al., 2021). Individuals contribute through donations and sustainable investments, with over $1 trillion invested in green funds globally by 2023 (Antimiani et al., 2017; Tennant et al., 2024). Foundations provide grants for research and local projects, contributing $3.6 billion in 2021 (Morena, 2023). Corporations invest in green technologies (Michaelowa et al., 2020), with $1.4 trillion spent on climate initiatives in 2023 (Madénian & Neste, 2023). CBOs implement local solutions and manage a significant portion of climate funds, such as 40% of the Green Climate Fund. NGOs help manage and direct climate finance, contributing $6 billion to climate action in 2022 (Carroll et al., 2021). Together, these actors ensure that resources reach those who need them, driving effective climate action (Carroll et al., 2020; Michaelowa et al., 2020). Philanthropic efforts, particularly in regions like Atlantic Canada, show the importance of multi-stakeholder approaches that integrate public, private, and grassroots initiatives to address climate challenges.

The Role of Government

At all levels—national, regional, and local—governments are vital actors in climate finance, driving policies, mobilizing resources, and fostering collaborations to address global and local climate challenges (Vogel et al., 2020). Their role spans from setting international climate commitments to implementing localized interventions, making them indispensable in the fight against climate change (Bush & Lemmen, 2019). By strengthening coordination across different levels of government, ensuring the equitable distribution of resources, and adopting inclusive, justice-oriented approaches, governments can maximize their impact and ensure that climate action is effective and sustainable (Bush & Lemmen, 2019; Vogel et al., 2020). Through these efforts, governments have the potential to create a more resilient future by aligning climate finance with the needs of vulnerable communities and addressing systemic barriers to action.

Individuals and Foundations in Climate Finance

Individuals are the dominant contributors to philanthropy in North America, accounting for nearly 70% of charitable donations, with foundations contributing 15% (Barman, 2017; Nisbet, 2019). This pattern is observed globally, as individuals also play a significant role in charitable giving across Europe and Asia (Papin & Beauregard, 2024), though the exact percentages may vary by region. Foundations are key in financing community-driven climate initiatives, with independent, community, and operating foundations funding local resilience programs, renewable energy adoption, and ecosystem restoration projects (Carroll et al., 2020; Reeder et al., 2020). Foundations like the Ivey and McConnell Foundations act as intermediaries, channeling federal and corporate funds toward grassroots efforts that target climate vulnerabilities in rural and Indigenous communities (Clark et al., 2018). Despite these efforts, philanthropic funding often reflects donor priorities, which can limit support for transformative climate actions (Carroll et al., 2020). For example, clean growth initiatives funded by corporate-linked foundations frequently prioritize market-driven solutions such as renewable energy and carbon offset programs, sidelining justice-oriented approaches that address systemic inequities (Baird et al., 2015; Ramirez et al., 2022).

Corporate Contributions and Private Sector Involvement

Corporate philanthropy, often linked to broader corporate social responsibility (CSR) strategies, contributes approximately 5% of total charitable giving (Barman, 2017; Michaelowa et al., 2020). Corporations like RBC and Suncor Energy support clean growth projects aligning environmental goals with economic development (Carroll et al., 2020). While advancing renewable technologies and emissions reduction, these initiatives are often critiqued for perpetuating existing power structures and prioritizing incremental progress over systemic change (Baird et al., 2015).

Community-Based and Non-Governmental Organizations

CBOs and NGOs are pivotal in implementing localized climate solutions, partnering with municipal and provincial governments to address vulnerabilities through retrofitting infrastructure, conducting vulnerability assessments, and promoting sustainable resource management (Bednar

et al., 2018; Reeder et al., 2020). Their grassroots focus fosters trust and community ownership, enhancing the effectiveness of place-based climate interventions. However, NGOs and CBOs often operate within funding constraints, with resources disproportionately directed toward urban-based organizations that align with donor preferences (Squires, 2022).

Multinational and Bilateral Organizations

Multilateral and bilateral organizations are crucial in mobilizing and allocating global climate finance, supporting large-scale initiatives, and localized solutions (Michaelowa et al., 2020). Entities like the World Bank, Green Climate Fund, and bilateral agencies such as USAID provide resources for renewable energy, sustainable infrastructure, and capacity-building projects, often partnering with governments, NGOs, and private sectors (Antimiani et al., 2017). However, inequitable resource distribution, donor-driven priorities, and administrative barriers can limit their effectiveness. Strengthening collaboration with grassroots and Indigenous organizations, simplifying funding access, and integrating justice-oriented approaches are essential for maximizing their impact and ensuring inclusive, equitable climate resilience (Baptista & Perovich, 2020; Ramirez et al., 2022).

Challenges and Limitations

Philanthropy's potential to support transformative climate action is hindered by structural and operational limitations (Nisbet, 2018; Morena, 2023). Funding disparities disproportionately affect rural and climate-vulnerable regions like Atlantic Canada, which receive only a small fraction of total philanthropic resources despite facing significant climate risks (Levett, 2021; Squires, 2022). Additionally, donor-driven priorities favor measurable outcomes and market-based solutions, limiting investments in systemic and justice-oriented climate actions (Carroll et al., 2020; Baptista & Perovich, 2020). Though well-positioned to address local needs, grassroots initiatives often lack the institutional capacity to secure funding, further marginalizing underrepresented communities (Taylor & Blondell, 2023). Furthermore, philanthropic models emphasize short-term, fragmented interventions, which impede long-term structural change and the pursuit of comprehensive climate resilience (Lefèvre & Fontan, 2017; Jensen & Dowlatabadi, 2018).

Toward a Transformative Approach

Philanthropy must strategically align with long-term climate goals, prioritize equity and inclusivity, and foster collaboration across sectors to enhance its transformative impact. Decentralized decision-making and participatory grant-making can empower marginalized groups, democratizing resource allocation and fostering alignment with community priorities (Schenker & Stephan, 2014; Garcia, 2017). Long-term, unrestricted funding is essential to build grassroots capacity and support initiatives that reflect diverse lived experiences (Baptista & Perovich, 2020).

Additionally, philanthropy can balance localized grassroots actions with systemic reforms, fostering collaboration between community actors, larger institutions, and government stakeholders (Barman, 2017). Focusing on justice-oriented approaches and addressing the

structural drivers of vulnerability can allow philanthropy to go beyond its traditional role as a financial intermediary. In doing so, it can become a key driver of sustainable and equitable climate action (Saifer et al., 2021; Garcia, 2023). The role of different actors in climate finance illustrates the complexity and potential of multi-stakeholder approaches to addressing climate challenges (Carroll et al., 2021). While philanthropy has significantly contributed to localized climate action, its effectiveness is constrained by inequities, structural biases, and donor-driven priorities. A transformative shift toward equity-focused, participatory, and systemic strategies (García, 2023) is essential to unlock philanthropy's full potential in climate finance, ensuring that all communities, particularly the most vulnerable, benefit from sustainable and inclusive climate resilience initiatives (Ivany, 2021).

Conclusion

This review has explored the role of philanthropy in financing community-based climate action in Atlantic Canada, highlighting its potential to complement traditional funding sources, such as government and private sector investments, in addressing the region's climate challenges. This research addressed this gap by exploring finance as an essential component of climate governance. It will examine the role of philanthropy alongside other funding sources in supporting community-level climate action in Atlantic Canada. The study also explored how philanthropic contributions can enhance resilience and adaptation efforts while identifying the limitations and challenges that philanthropy faces in fulfilling its potential, especially in Atlantic Canada. Philanthropic organizations have proven instrumental in supporting climate adaptation efforts, particularly in areas where government resources may be insufficient or inaccessible. Their ability to fund localized projects, often focusing on vulnerable communities, positions them as critical actors in enhancing climate resilience.

However, several barriers limit philanthropy's full potential in driving climate action. A significant issue is the inequitable distribution of philanthropic resources, with less funding directed toward vulnerable regions such as Atlantic Canada than more economically developed provinces. This funding imbalance exacerbates existing climate vulnerabilities in these regions, restricting the scope and effectiveness of local climate initiatives. Additionally, philanthropic funding often prioritizes market-based solutions or large, established organizations, potentially sidelining grassroots efforts and community-led projects that may be better suited to the specific needs of local populations. Another key challenge lies in the stringent recognition and registration processes for philanthropic organizations. The bureaucratic hurdles involved in registering and officially recognizing smaller organizations—particularly those focused on local or grassroots climate adaptation efforts—can impede their ability to access funding and operate effectively. These barriers are especially challenging for organizations that work in underrepresented or neglected communities, where smaller, community-led projects can be more flexible and better able to meet the immediate needs of local people. Without greater flexibility in how philanthropic organizations

are recognized and supported, many local groups may struggle to secure the necessary resources to implement climate solutions tailored to their contexts.

To enhance the effectiveness of philanthropy in addressing climate change, it is essential that funding be more equitably distributed, with increased support for marginalized communities and community-based organizations. Furthermore, recognizing and registering philanthropic organizations should be streamlined and made more flexible, allowing smaller organizations—especially those with a strong local presence and understanding of community needs—to access funding and operate without undue administrative barriers. Philanthropic initiatives should also prioritize projects that address systemic inequalities and social justice issues, ensuring that climate adaptation efforts are inclusive and equitable.

Moreover, philanthropy should work more collaboratively with governments, businesses, and other stakeholders to leverage expertise and resources, fostering innovative solutions to the climate crisis. While philanthropy can support climate action, it cannot replace the need for sustained public investment and comprehensive government policies. To maximize the impact of philanthropic contributions, it is crucial to advocate for greater public-sector engagement and long-term financial commitments to climate change mitigation and adaptation. By fostering stronger collaboration between philanthropic organizations, government bodies, and the private sector and ensuring that the process of recognizing philanthropic organizations is more flexible and inclusive, a more sustainable and resilient future for Atlantic Canada can be achieved.

References

Ackerman, F. (2009). *Financing the climate mitigation and adaptation measures in developing countries - G-24 Discussion Paper Series.* Geneva: United Nations Conference on Trade and Development.

Aminur, M., Shaha, R., & Wang, X. (2024). Assessing social-ecological vulnerability and risk to coastal flooding: A case study for Prince Edward Island, Canada. *International Journal of Disaster Risk Reduction, 106*, 104450. doi:https://doi.org/10.1016/j.ijdrr.2024.104450

Antimiani, A., Costantini, V., Markandya, A., Paglialunga, E., & Sforna, G. (2017). The Green Climate Fund is an effective compensatory mechanism in global climate negotiations. *EnvironmentalScience and Policy, 77*, 49–68. doi:https://doi.org/10.1016/j.envsci.2017.07.015

Ayers, J. (2009). International funding to support urban adaptation to climate change. *Environment and Urbanization, 21(1),* 225–240. doi:https://doi.org/10.1177/0956247809103021

Baird, J., Plummer, R., & Bodin, Ö. (2015). Collaborative governance for climate change adaptation in Canada: experimenting with adaptive co-management. *Experimenting with adaptive co-management. Regional Environmental Change, 16(13),* 747–758. doi:https://doi.org/10.1007/s10113-015-0790-5

Baptista, A. I., & Perovich, A. (2020). *Environmental justice and philanthropy: Challenges and opportunities for alignment Gulf South and Midwest case studies.* New York, NY: Tishman Environment and Design Center.

Barman, E. (2017). The social bases of philanthropy. *The Annual Review of Sociology, 43*, 271–90. doi:https://doi.org/10.1146/annurev-soc-060116-053524

Bednar, D., Raikes, J., & Mcbean, G. (2018). *The governance of climate change adaptation in Canada- Report on Multi-sector Multi-level Workshops and Expert Insights.* Toronto, Ontario: Institute for Catastrophic Loss Reduction. Retrieved from https://www.iclr.org/wp-content/uploads/2018/04/cca-climate-change-report-2018.pdf

Brechin, S. R., & Espinoza, M. I. (2017). A case for further refinement of the green climate fund's 50: 50 ratio climate change mitigation and adaptation allocation framework: Toward a more targeted approach. *Climatic Change, 142(3–4),* 311–320. doi:https://doi.org/10.1007/s10584-017-1938-8

Bush, E., & Lemmen, D. S. (2019). *Canada's changing climate report.* Ottawa: Government of Canada - Gouvernement du Canada.

Callahan, C., & Mankin, J. (2022). National attribution of historical climate damages. *Climate Change, 172(3),* 1–19. doi:https://doi.org/10.1007/s10584-022-03387-y

Canadian Climate Institute. (2022). *Damage Control: Reducing the costs of climate impacts in Canada.* Ottawa: Canadian Climate Institute.

Carroll, W. K., Graham, N., & Shakespeare, M. (2020). Foundations, ENGOs, Clean Growth Networks. *Canadian Journal of Sociology/Cahiers canadiens de sociologie, 45(2)* , 109-142. doi:https://doi.org/10.1111/cars.12349

Carroll, W. K., Graham, N., & Shakespeare, M. (2021). Mapping the environmental field: Networks of foundations, ENGOs and think tanks. *Canadian Review of Sociology/Revue Canadienne de Sociologie, 58(3),* 284–305. doi:https://doi.org/10.1111/cars.12349

Carvalho, G. (2018). *Climate finance for Canadian cities: Is debt financing a viable alternative? - IMFG Papers on Municipal Finance and Governance.* Toronto: Institute on Municipal Finance & Governance - University of Toronto.

Clark, R., Reed, J., & Sunderland, T. (2018). Bridging funding gaps for climate and sustainable development: Pitfalls, progress, and potential of private finance. *Land Use Policy, 71*, 335–346. doi:https://doi.org/10.1016/j.landusepol.2017.12.013

Cleary, S., & Willcott, N. (2024). Carbon pricing: Necessary but not sufficient. *Finance Research Letters, 68*, 1-7. doi:https://doi.org/10.1016/j.frl.2024.106017

Cohen, S., Bush, E., Zhang, X., Gillett, N., Bonsal, B., Derksen, C., . . . Watson, E. (2019). Synthesis of findings for Canada's Regions - Chapter 8 . In E. Bush, & D. L. (eds), *Canada's Changing Climate Report* (pp. 424–443). Ottawa, Ontario: Government of Canada.

Colting-Stol, J. (2020). *Foundation and climate action: Exploratory research.* Montreal: Canadian Philanthropy Partnership Research Network. Retrieved from Canadian Philanthropy Partnership Research Network repository.

Conteh, C. (2018). Multilevel governance through a strategic lens: Innovation policy delivery in Ontario. *Canadian Public Administration/Administration Publique du Canada*, 1–21.

Craft, J., Howlett, M., Crawford, M., & McNutt, K. (2013). Assessing policy capacity for climate change adaptation: Governance arrangements, resource deployments, and analytical skills in Canadian infrastructure policy making. *Review of Policy Research, 30,(1),* 42-65. doi: https://doi.org/10.1111/ropr.12002

Delfin, F. G., & Tang, S.-Y. (2008). Foundation impact on environmental non-governmental organizations: The grantees' perspective. *Nonprofit and Voluntary Sector Quarterly, 37*, 603-625. doi:10.1177/0899764007312667

Desanlis, H., Matsumae, E., Roeyer, H., Yazaki, A., Ahmad, M., & Menon, S. (2021). *Funding trends 2021: Climate change mitigation philanthropy.* Richmond, ON: Climate Works.

de Souza, M. T., Silva, M. D., & Carvalho, R. D. (2010). Integrative Review: what is it? How to do it? *Einstein (São Paulo), 8(1),* 102-106. doi:https://doi.org/10.1590/S1679-45082010RW1134

Dietz, S., & Arnold, S. (2021). Atlantic Provinces; Chapter 1. In N. L. (ed.) F.J. Warren, F. J. Warren, N. Lulham, & D. S. Lemmen (Eds.), *Canada's Changing Climate Report.* Ottawa, Ontario: Government of Canada.

Doelle, M., & Munroe, K. B. (2012). Climate governance at the municipal level in Canada: A case study of mitigation efforts in Halifax. In B. J. (ed), *Local climate change law environmental regulation in cities and other localities* (pp. 195-220). Cheltenham, UK: Edward Elgar Publishing. doi:https://doi.org/10.4337/9780857937483.00017

Elson, P. R., Fontan, J.-M., Lefèvre, S., & Stauch, J. (2018). Foundations in Canada: A comparative perspective. *American Behavioral Scientist, 62(13),* 1777–1802. doi:10.1177/0002764218775803

Eyzaguirre, J., Boyd, R., Morton, C., Semmens, C., Ramen, S., Reasoner, M., . . . Sherren, K. (2022). *Understanding climate change impacts in relation to wellbeing for Nova Scotia – Synthesis Report.* St. Halifax, NS: Eyzaguirre, J., Boyd, R., Morton, C., Semmens, C., Ramen, S., Reasoner, M., Cuell, C., Kohfeld, K. and Sherren, Report prepared by ESSA Technologies Ltd. and collaborators for Nova Scotia Environment and Climate Change.

Gamble, J. (2014). *Growing environmental philanthropy in Atlantic Canada.* Toronto: Canadian Environmental Grantmakers' Network.

García, L. (2023). An ecosystemic approach to human rights philanthropy. *Journal of Human Rights Practice, 15,* 678–684. doi:https://doi.org/10.1093/jhuman/huad048

Goldman, M. (2005). *Imperial Nature: The World Bank and Struggles for Social Justice in the Age of Globalization.* New Haven, CT: Yale University Press.

Hale, S. (2010). Community Foundations of Canada/Fondations Communautaires du Canada. In H. K. Anheier, & S. (. Toepler, *International Encyclopedia of Civil Society.* New York, NY: Springer. doi:https://doi.org/10.1007/978-0-387-93996-4_680

Hoicka, C. E., Stephens, J. C., Zhao, Y., & Hernandez, P. S. (2023). Misalignment or exclusion? Investigating climate and energy philanthropy. *Energy Research & Social Science, 106,* 1–8. doi:https://doi.org/10.1016/j.erss.2023.103317

Intergovernmental Panel on Climate Change (IPCC). (2018). *Special report: Global warming of 1.5 ºC.* Retrieved from https://www.ipcc.ch/sr15/

Ivany, M. A. (2021). *Rural philanthropy: Mapping patterns of charitable giving in Newfoundland and Labrador and Canada's Atlantic region.* Guelph, On: The University of Guelph. Retrieved from the University of Guelph Repository.

Jensen, T., & Dowlatabadi, H. (2018). Challenges in financing public sector low-carbon initiatives: lessons from private finance for a school district in British Columbia, Canada. *Climate Policy, 18(7)*, 878-888.

Lefèvre, S., & Fontan, J.-M. (2017). Which frameworks are appropriate to study and describe philanthropic foundations in Canada? *Canadian Journal of Nonprofit and Social Economy Research, 8(2)*, 5-23.

Leggett, J. A. (2020). *The United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement: A summary* . Washington, D. C: Congressional Research Service .

Levett, K. (2021). *Mobilizing rural capital: Place-based investing and philanthropy in the Sunshine Coast region, British Columbia.* Burnaby, BC: Simon Fraser University. Retrieved from Simon Frazer University Repository.

Lutter, T. (2010). Grantmaking networks and environmental grants in Canada. *The Philanthropist, 23(2)*, 126-139.

Madénian, H., & Neste, S. L. (2023). Philanthropic foundations as urban climate policy entrepreneurs. *Journal of Urban Affairs*, 1-18. doi:https://doi.org/10.1080/07352166.2023.2177550

McCarthy, D. (2004). Environmental justice grantmaking: Elites and activists collaborate to transform philanthropy. *Sociological Inquiry, 74(2)*, 250–270.

Michaelowa, K., Michaelowa, A., Reinsberg, B., & Shishlov, I. (2020). Do multilateral development bank trust funds allocate climate finance efficiently? *Sustainability, 12(14)*, 5529. doi:https://doi.org/10.3390/su12145529

Michelson, E. S. (2021). Science philanthropy, energy systems research, and societal responsibility: A match made for the 21st century. *Energy Research & Social Science, 72 101886*, 101886. doi:https://doi.org/10.1016/j.erss.2020.101886

Morena, E. (2023). The spirit of climate philanthropy. In K. Mitchell, & P. P.-W. (eds), *Handbook of Critical Philanthropy and Humanitarianism* (pp. 248-258). Milton Park, Abingdon, Oxfordshire, UK: Routledge. Retrieved from https://www.routledgehandbooks.com/doi/10.4324/9781003162711-21

Nisbet, M. C. (2018). Strategic philanthropy in the post-Cap-and-Trade years: Reviewing U.S. climate and energy foundation funding. *WIREs Clim Change, 9(4)*, 1-17. doi:https://doi.org/10.1002/wcc.524

Nisbet, M. C. (2019). Climate philanthropy and the four billion (Dollars, That Is). *Issues in Science and Technology*, 34-36.

Papin, M., & Beauregard, P. (2024). Can't Buy Me Love: Billionaire entrepreneurs' legitimation strategies in transnational climate governance. *Environmental Politics, 33(1)*, 70-91. doi:10.1080/09644016.2023.2180909

Pearson, H. (2020). Philanthropic foundations Canada: Building a community and a voice for philanthropy. In P. R. Elson, S. A. Lefèvre, & J.-M. Fontan, *Philanthropic foundations in Canada: Landscape, Indigenous perspectives and pathway to change* (pp. 33-53). Ontario, CA: Social Sciences and Humanities Research Council of Canada.

Phillips, S. D. (2018). Dancing with giraffes: Why philanthropy matters for public management. *Canadian Public Adminsitration/Administration Publique Du Canada, 61(2)*, 151–183.

Ramirez, J. S., Baptista, A. I., Greenberg, M., Perovich, A., Yulsman, A., Lopez, A., & Rosenberg, A. (2022). Grassroots environmental justice work and philanthropy: Challenges and opportunities. *The Foundation Review, 14(1)*, 33-46. doi: https://doi.org/10.9707/1944-5660.1601

Reeder, K. J., O'Donnell, S., & Prado, A. (2020). Leadership for climate change adaptation in a rural region in New Brunswick, Canada. *Journal of Rural and Community Development, 15(2)*, 54-73.

Saifer, A., Fontan, J.-M., Duprez, C., Sidorovska, I. G., & Litalien, M. (2021). Examining the COVID-19 response of Canadian grantmaking foundations: Possibilities, tensions, and long-term implications. *Canadian Journal of Nonprofit and Social Economy Research, 12(1)*, 14-30.

Salazar, V., & Katigbak, J. J. (2022). Enhancing the green climate fund operations through a climate justice lens. *International Journal: Canada's Journal of Global Policy Analysis, 77(2)*, 368–377. doi:https://doi.org/10.1177/00207020221130306

Schenker, O., & Stephan, G. (2014). Give and take: How the funding of adaptation to climate change can improve the donor's terms-of-trade. *Ecological Economics, 106, 44–55.*, 44-55. doi:https://doi.org/10.1016/j.ecolecon.2014.07.006

Squires, E. (2022). *Place-based environmental philanthropy: The role of community-based organizations in the Skeena watershed.* 32–50: Canadian Journal of Nonprofit and Social Economy Research, 13(2). doi:https://doi.org/10.29173/cjnser585

Taylor, D. E., & Blondell, M. (2023). *Examining disparities in environmental grantmaking: Where the money goes.* New Haven, CT: Justice, Equity, Diversity, and Sustainability Initiative (JEDSI) - Yale School of the Environment.

Tennant, D., Davies, S., & Tennant, S. (2024). Determinants of access to climate finance: Nuanced insights for SIDS and other vulnerable economies. *World Development, 180*, 1-22. doi:10.1016/j.worlddev.2024.106623

United Nations Environment Programme (UNEP). (2022, October 27). *Report: Emissions Gap Report 2022*. Retrieved from Resources: https://www.unep.org/resources/emissions-gap-report-2022#:~:text=The%20world%20is%20not%20on,cent%20to%20avoid%20global%20catastrophe.

United Nations Framework Convention on Climate Change (UNFCCC). (2007). *Investment and financial flows to address climate change.* Retrieved from http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf)

United Nations Framework Convention on Climate Change (UNFCCC). (2024). *COP29*. Retrieved from https://unfccc.int/cop29

United Nations. (n.d.). *The Paris Agreement*. Retrieved from Climate Action: https://www.un.org/en/climatechange/paris-agreement

Vogel, B. A. (2015). *Adapting to climate change: The case of multi-level governance and municipal adaptation planning in Nova Scotia, Canada"*. London, ON: The University of Western, Ontario.

Vogel, B., Henstra, D., & McBean, G. (2020). Sub-national government efforts to activate and motivate local climate change adaptation: Nova Scotia, Canada. *Environment, Development and Sustainability, 22*, 1633–1653. doi:https://doi.org/10.1007/s10668-018-0242-8

World Bank. (2006). *Clean energy and development: Framework, ESSD-VP/I-VP*. Washington D. C., USA: World Bank.

World Bank. (2020). *Pricing carbon*. Retrieved from Programs: https://www.worldbank.org/en/programs/pricing-carbon