Health and Health Equity in Climate Adaptation

A primer for incorporating health and health equity considerations into climate resilience efforts

"Climate change influences the core conditions of life, including the air we breathe, the food we eat, the water we drink, and the land we live on. The rapidly changing climate also multiplies existing population health challenges, including the spread of climate sensitive infectious diseases, and exacerbates health inequities."
*(Dr. Theresa Tam, **Mobilizing Public Health Action on Climate Change in Canada** [2022], pp. 8)*

Introduction

Climate change is a growing concern across the country with impacts felt daily in the lives of individuals and communities. In Simcoe Muskoka, people are experiencing hotter temperatures, more frequent and severe extreme weather events, and significant flooding. These impacts are expected to worsen over the next few decades, with higher average temperatures and changing precipitation patterns. These changes will impact all aspects of society including built, natural, and social environments and as a result, overall community and individual well-being. In response to these challenges, municipalities and public institutions are taking action through planning, policies, and projects that aim to build local climate resilience. **Considering the health and health equity dimensions of climate change can help to strengthen local climate adaptation while improving our collective well-being.**

From housing and transportation, parks and greenspaces, to our social, cultural, and economic contexts, the relationship between climate change, health, and health equity is one that is embedded into every aspect of society. It connects the human experiences of climate change to the built, natural, and social environments around us, and recognizes the ways in which climate impacts are felt unevenly by different individuals and communities. While it may not be easy to see the connection between an affordable housing policy made today and the impacts of that policy on someone's heat-related illness tomorrow, these connections shape how community members are able to live (and live well) in a changing climate. **By applying a health and health equity lens to climate adaptation, we can break down silos and find transformative solutions that address the different ways that people experience climate change in their daily lives.**

If climate change is a challenge which requires a transformative, full-society response, then a health and health equity lens to climate resilience work can help connect efforts to improve overall well-being. We hope this resources will be useful for supporting your local adaptation efforts in meaningful and transformative ways . Together, we can work toward greater climate resilience and improved well-being for everyone in Simcoe Muskoka.

Resilience *refers to "the capacity or ability to anticipate and cope with shocks and to recover from their impacts" (Climate Insight). When it comes to climate change, climate resilience can be understood more specifically with regard to natural and human systems. It refers to the ability to effectively respond to and cope with climate hazard events, disturbances or trends while maintaining essential functions and the capacity to adapt, learn and transform. (IPCC)*

In essence, climate resilience is the capacity to thrive in a changing climate. However, building climate resilience - especially when done through a health and health equity lens -
helps to prepare communities and individuals for other potential hazards and threats beyond climate changes that may occur (e.g., the 2020 COVID -19 pandemic).

About this Document

This document is a companion to the **Health and Health Equity in Climate Adaptation Guide.** It offers an overview of key concepts in relation to climate adaptation, public health, and equity to emphasize the importance of a health and health equity lens across climate change response efforts. While the Guide offers tangible considerations for supporting the work of community partners, the **Health Equity in Adaptation Primer** aims to build understanding of the connection between these concepts. It can be read as an introduction to the Guide or as a standalone document and may be a helpful reference as you plan and implement adaptation projects.

This document was prepared through the collaborative efforts of the ***Simcoe Muskoka District Health Unit*** *and the* ***Ontario Resource Centre for Climate Adaptation.***

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Climate Adaptation

Increasingly, Canadian municipalities are preparing for climate change through local climate adaptation efforts. This work **builds climate resilience by helping communities to prepare for and respond to climate hazards and their impacts**. It aims to shift decision-making, mindsets, and activities while also creating supportive physical and social environments to help reduce or prevent harm as the climate changes.

> *"**Climate adaptation** refers to actions to prepare for and adjust to the current and projected impacts of climate change. Its aim is to minimize risks and effects of climate change while also taking advantage of any opportunities that arise." **(CCHVAA Primer)***

A guided planning process is often used to support climate adaptation efforts and involves researching climate forecasts, assessing vulnerabilities and risks, and implementing actions tailored to local context. It is one of the many activities that contributes to proactive action for climate change; however, even without an adaptation plan, small actions can make a difference in building community resilience.

While not everyone has access to the same resources for implementing large-scale adaptation action, through collaboration, innovation, and starting small, everyone can contribute to building climate resilient communities. We all have a role to play in responding to climate change, and any action that can help to generate momentum and move things forward is an important part of this work.

> *"**Climate change** mitigation refers to any action that limits or prevents greenhouse gas emissions from entering the atmosphere, as well as any enhancing activities that remove these gases from the atmosphere (carbon sequestration)." (**Climate Insight**)*
>
> *While climate adaptation and mitigation are distinct areas for municipal action, there are many ways in which the two fields overlap. Many climate adaptation actions can have mitigation co-benefits and vice versa. When it comes to health, this synergy is especially true.*

It is important to keep in mind that without intentional and explicit efforts to address social inequities as a part of climate adaptation,

inequities can be worsened, leading to additional harms or burdens placed on certain groups and individuals. Incorporating a health and health equity lens into climate adaptation leads to adaptation efforts that are meaningful and effective for everyone.

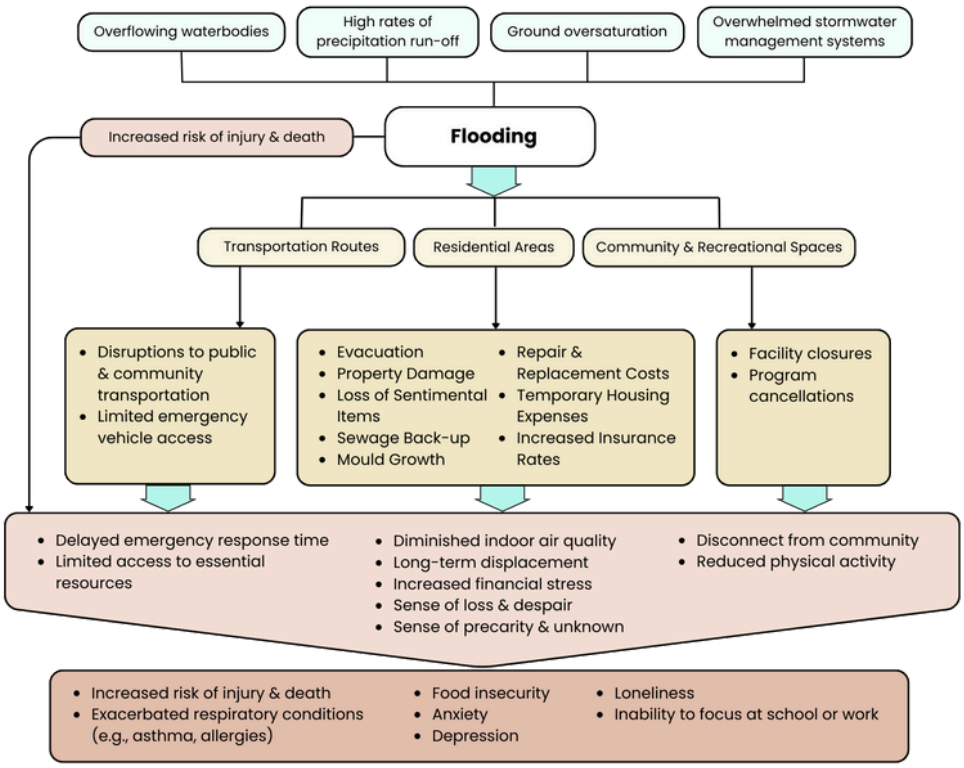
Considering Health

> ***"Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." **(WHO)***

Health considerations can be connected to almost every part of climate response efforts because health isn't just about avoiding injuries or illnesses - **it encompasses the physical, mental, emotional, spiritual, social, and economic well-being of individuals and communities.**

When it comes to climate adaptation, there are obvious ways that climate change, population health, and community well-being interact. For instance, heavy rain that leads to flooding can directly increase an individual's risk of physical injuries or even death (e.g., someone is hit by a falling tree branch or gets caught up in high floodwaters). However, there are many less obvious ways that climate hazards can impact health outcomes in the short and long-term through interactions with natural and/or human systems. The following graphic illustrates how an extreme weather event as described above can shape health outcomes for individuals, households, and communities:

F**igure 1:** Examples of Flood Impacts on Population Health (due to increased frequency and severity of extreme weather events)*



** This image does not encompass the full range of possible impacts or health outcomes that can result from flooding. Rather, it provides some specific examples to help better illustrate the connection between climate change and health.*

Applying a health lens to the adaptation process allows us to consider and respond to these impacts by supporting communities and individuals before, during, and in the immediate aftermath of climate emergencies. At the same time, this lens can be used to drive much-needed action on the social and structural factors that compound and exacerbate climate-related health risks. By considering all of these possibilities, our collective efforts can strengthen community resilience and support better health and well-being outcomes in the long-term.

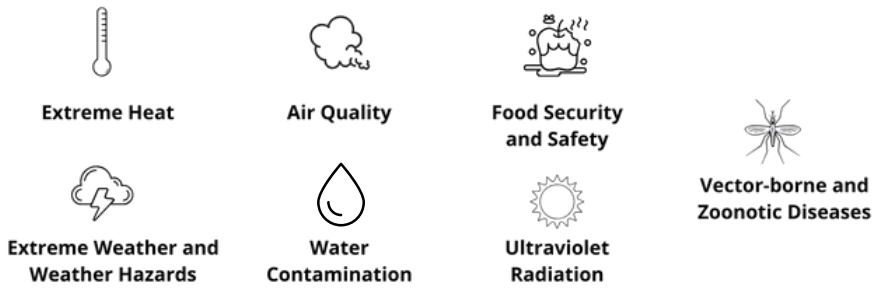
For additional examples of how climate hazards can impact health, see Appendix 1.

Climate Hazards of Concern in Simcoe Muskoka

In 2017, the Simcoe Muskoka District Health Unit (SMDHU) released the first iteration of *A Changing Climate – Assessing Health Impacts and Vulnerabilities to Climate Change within Simcoe Muskoka.* This climate change and health vulnerability assessment was created in-line with both national and provincial recommendations to meet the following goals:

- To identify potential climate-sensitive health outcomes expected to occur due to climate change within Simcoe Muskoka;
- To determine increased vulnerability to these climate-sensitive health outcomes within Simcoe Muskoka; and
- To identify policies and actions to help limit the impact of climate change on climate-sensitive health outcomes in Simcoe Muskoka.

An updated process is currently underway that builds on the original assessment and includes new learnings to better inform future work. The new Climate change and health vulnerability and adaptation assessment (CCHVAA) notes that there are currently* seven climate hazards of concern in Simcoe Muskoka that are known to impact the physical and mental health of individuals and communities. These include:



Each hazard represents an area of concern for the general population. At the same time, health outcomes connected to these hazards may be especially pronounced for specific populations such as children, seniors, and individuals living with low income, who are

unhoused or precariously housed, and/or who are living with pre-existing chronic conditions.

For example, of the 599, 843 people who reside in Simcoe Muskoka, approximately 20.8% of the population (124, 765 People) are older adults (aged 65+) – this number is expected to increase to 30% of the population by 2041. With a rise in the senior population expected alongside projected temperature increases, there will be a significant increase in individuals who are at higher risk of experiencing heat-related illness. It is important that considerations such as these be accounted for in adaptation processes to ensure that actions can be implemented which meet each population's specific needs.

* *Due to the ongoing nature of climate change, future impacts may arise that are not yet known. The language of "currently" is used in this context as a recognition that new impacts or different ways of understanding the impacts listed may emerge over time.*

Applying an Equity Lens

*"The term **'equity'** refers to fairness and justice and is distinguished from equality: Whereas equality means providing the same to all, equity means recognizing that we do not all start from the same place and must acknowledge and make adjustments to imbalances. The process is ongoing, requiring us to identify and overcome intentional and unintentional barriers arising from bias or systemic structures." (**National Association of Colleges and Employers**)*

Climate change and its impacts affect people in different and uneven ways. When it comes to health, this means that certain groups and individuals may be at higher risk of experiencing negative health outcomes, or experiencing more severe negative health outcomes, in response to climate hazards. Various factors determine why some groups are at higher risk of negative health outcomes from climate change including factors that influence level of exposure, sensitivity, and ability to adapt. These interrelated components contribute to what is often referred to in adaptation work as "vulnerability."

Applying an equity perspective to climate adaptation recognizes that risk varies within a population; it's shaped by societal factors that can be addressed through planning, policies, and action. In public health, these factors are known as *determinants of health*, and may include social, ecological, and structural influences. It's important to understand the link between public health and climate change using this lens, as the negative health effects of climate change can be worsened by systems of privilege and power that prioritize the needs of some over others. Failing to address these factors can have compounding and detrimental effects on true community resilience.

Health Equity

Many people do not have fair opportunities to achieve their full health potential. This uneven access contributes to health inequities, or differences in health that are systemic, modifiable, avoidable, and unfair. These inequities arise when societal and structural forces systematically disadvantage certain groups and create unjust differences in the conditions required for good health (determinants of health). As a result, health inequities contribute to the way that certain communities and individuals will face adverse health outcomes or increased risk in response to climate hazards.

Working toward **health equity** means ensuring that everyone has fair access to opportunities and conditions that promote health without facing disadvantages (Cite,) (Cite). It is achieved when disparities in health status between different groups, caused by variations in the determinants of health, are reduced or eliminated.

Applying an equity perspective to climate adaptation recognizes that risk varies within a population; it's shaped by societal factors that can be addressed through planning, policies, and action. In public health, these factors are known as determinants of health, and may include social, ecological, and structural influences. It's important to understand the link between public health and climate change using this lens, as the negative health effects of climate change can be worsened by systems of privilege and power that prioritize the needs of some over others. Failing to address these factors can have compounding and detrimental effects on true community resilience.

Components of Climate Vulnerability

Exposure - In relation to public health, exposure refers to the degree to which a person or community is likely to come into contact with a climate-related event or stressor. Influencing factors may be physical or social, and can include **geography, land-use, and topography**, as well as **determinants of health such as occupation, quality of housing, and more.**

Sensitivity - Sensitivity refers to the degree to which a person or community is likely to be affected by a climate-related event. It is heavily influenced by factors including a**ge, gender, and health status** as well as **determinants of health such as socio-economic conditions, access to health services, experiences of marginalization, access to resources, and more.**

Adaptive Capacity - Adaptive capacity is the ability of a person or community to successfully adapt to and manage the impacts resulting from climate change. Influencing factors may include access to resources and services, knowledge of individuals and communities, state of infrastructure, and social relationships/networks.

Considering Vulnerability

> *Vulnerability refers to "the tendency of exposed elements such as human beings, their livelihoods, and assets to suffer adverse effects when impacted by hazard events." (**Climate Insight**)*

Vulnerability is a technical term that is used across adaptation work to assess the risk of facing adverse outcomes from climate hazards based on levels of exposure, sensitivity, and adaptive capacity. However, using the term vulnerability can be problematic because the word has historically been used to define certain groups or communities in ways that take away their agency and compound social inequities.[1] When it comes to working with different groups throughout the adaptation process, especially those who have been historically marginalized, we avoid using the term to describe or label specific communities or groups of people, as this reinforces systems of inequity by failing to account for (and take action on) the social and structural factors that increase risk.

***"Vulnerability** is not inherent. Environmental, political and socially constructed conditions have made many individuals and communities more vulnerable to the health impacts of climate change. Climate change vulnerability is constructed by multiple factors, which vary depending on region, health status, age, socioeconomic status, and many other social determinants of health." (Climate Change and Health: An Exploratory Study Investigating Perceptions of Climate Change Impacts and Adaptations to Protect Health in the Parry Sound Region, 2021).*

Public Health Perspectives

Determinants of Health

Determinants of health are non-medical factors that affect health and well-being. These include various forces and structures—like economic, social, and political systems—as well as social norms that shape the conditions of people's daily lives (such as income, education, working conditions, stable housing, access to healthcare, and experiences of discrimination). When thinking about the health outcomes of climate change, these determinants are crucial for understanding differentiated risk and how it is influenced by health inequity.

Understanding the Determinants of Health [2]

Structural: Includes values, beliefs, world views, culture & norms, governance, laws, policies, and other institutional processes.

Social: Refers to non-medical factors in daily life that influence health and include the conditions in which people are born, grow up, live, work, play, learn, and age.

Ecological: Refers to conditions that enable life on earth and include oxygen, water, food, the ozone layer, natural resources, the climate, and more.

Figure 2: Examples of Social, Economic, and Ecological Conditions of Daily Life that Influence a Healthy and Dignified Life (**Let's Talk: Determinants of Health**, NCCDH [2024], pp. 6).

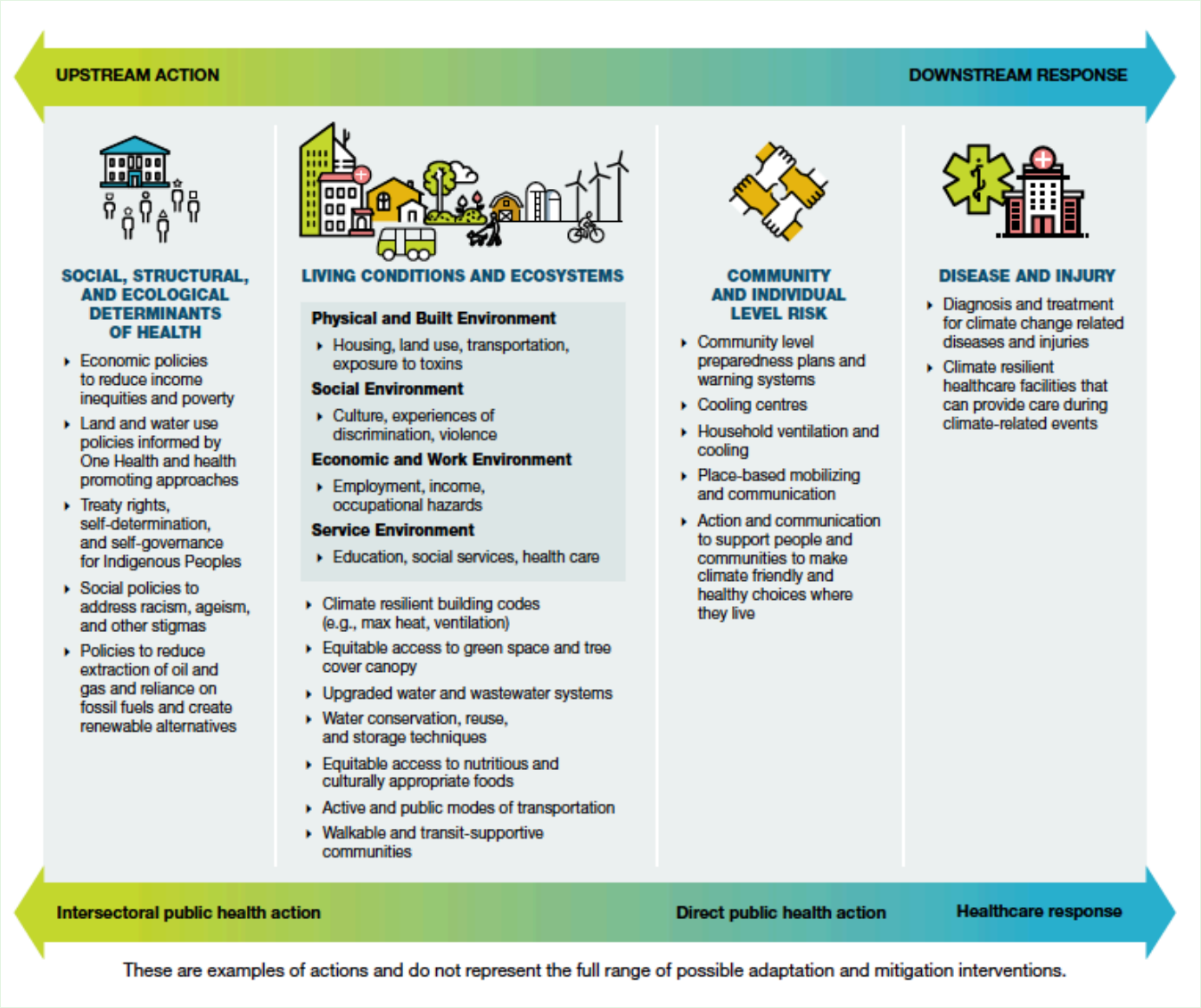
To ensure that climate adaptation efforts are truly effective, transformative actions are needed to change the systems that uphold inequalities and shape the social determinants of health. This requires collaboration across different sectors, departments, and areas for action. It can also draw from the public health continuum, which emphasizes both upstream and downstream approaches for addressing health outcomes and the factors that influence them.

The Public Health Continuum

The public health continuum recognizes the need for different types of action to address both micro and macro issues related to health outcomes: those that respond to immediate health needs (downstream) and others that work to change the fundamental factors affecting health (upstream). When it comes to health equity and the uneven experience of climate impacts, upstream interventions tend to focus on policy and planning to address the root causes of increased risk, while mid and downstream approaches will deal more directly with preparation and response to climate-related health impacts.

A health equity lens incorporates the public health continuum as an important part of effective and meaningful action for building community resilience across the uneven distribution of risk. It emphasizes both upstream and downstream approaches that address root causes of health inequity while recognizing the importance of fair, direct, and immediate access to services.

Figure 3: Upstream to Downstream: A Continuum of Climate-Health Action (**Mobilizing Public Health Action on Climate Change in Canada**, Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2022, Government of Canada)



Life Course Approaches to Climate Change

A life course perspective highlights that all stages of a person's life are interconnected with each other, and to past and future generations. It recognizes that each stage of life (including health) is influenced by a combination of factors. This perspective is important when thinking about climate change because climate hazards affect people differently at various life stages, from prenatal development to old age. Impacts from climate change can have a cumulative effect on health throughout a person's life. This means that the health impacts of climate change can be immediate or develop over time, influencing chronic disease risk and health disparities now and into the future. [3]

Research shows that both social, environmental, and economic factors contribute to health outcomes across an individual's life course. Much like the connection between climate change and the determinants of health, climate adaptation efforts should consider how policies and structures impact long-term health outcomes. Additionally, interventions must look beyond single events to understand and address how multiple climate events and exposures, as well intersecting factors such as social, environmental, and individual influences, can shape positive or negative health outcomes for different populations.

Figure 4: Impacts of Climate Change Across the Life Stages (**Climate change impacts on health across the life course,** George Washington University [2024], pp. 3)

Bringing It All Together: Youth Mental Health

The topic of youth mental health provides valuable insights into how health, health equity, and a life course perspective on public health are connected when it comes to climate change:

Increasingly, evidence shows that young people are especially susceptible to climate distress and anxiety. In an article published by the Journal of Climate Change and Health, a survey of 1000 young people across Canada identified that at least 78% of respondents felt that climate change is impacting their overall mental health, with 37% reporting that their feelings about climate change are negatively impacting their daily functioning.[4]This example shows a direct correlation between climate change and mental health. However, evidence also suggests that youth mental health is already precarious and influenced by factors such as the COVID-19 pandemic. It is also shaped by considerations such as poverty, racism, disability, and more that influence determinants of health.[5] This means that climate change is compounding what is already a mental health crisis amongst youth.[6]

Additionally, there is another layer to the connection between mental health outcomes and climate change that can be understood through a lifecourse approach. Changes such as more frequent and severe extreme weather events can have an impact on early-life stages, for example, by interrupting normal fetal development. These impacts can then lead to greater risk of mental health outcomes such as anxiety or depressive disorder, ADHD, and more as children get older.[7]As the risk of climate impacts increases across local communities, taking action to build community resilience in ways that are both preventative and responsive is an important part of supporting improved mental health outcomes. Moreover, these solutions must be designed in ways that recognize the unique challenges faced by youth while also responding to the factors that shape early childhood development.

Embedding Indigenous Perspectives into Climate Adaptation

The Indigenous Peoples of Turtle Island (North America) have resided on this land since time immemorial. However, colonization and the reluctance within “Canada” to recognize it’s true history have had a profound impact on the health and well-being of Indigenous Peoples in contrast to privileges gained for non-Indigenous people.[8] As a result, Indigenous Peoples face a disproportionate burden of impacts and increased risk of experiencing negative health outcomes as a result of climate change. Contributing to this inequitable distribution is that change disrupts the inherent and intimate connection that exists between Mother Earth and Indigenous Peoples.[9]At the same time, the Indigenous Peoples of Turtle Island have unique strengths for responding to climate changes with knowledge systems and lived experiences that are critical for climate action.[10] Accordingly, developing climate adaptation strategies that are meaningful, effective, and that truly build climate resilience for everyone must include active and equal participation of local Indigenous peoples including First Nations, Inuit, and Métis.

In 2020, the Simcoe Muskoka District Health Unit released a report entitled *Two Approaches, One Shared Learning Journey to Support Climate-Health Adaptation Planning* - a two part knowledge synthesis project undertaken in collaboration with the Public Health Agency of Canada and Cambium Indigenous Professional services. The project combines Western and Indigenous knowledge systems, with *Module 2: Indigenous lens on climate adaptation planning* developed by Kerry-Ann Charles. It recognizes that there is not ‘one size fits all’, for how to include Indigenous

berspectives in the adaptation planning process and a lack of understanding around how to respectfully engage with Indigenous Peoples and Communities to include these perspectives. It identified some best practices to support the inclusion of Indigenous perspectives into adaptation processes. This report emphasizes the importance of creating opportunities for the meaningful incorporation of Indigenous voices into climate adaptation work and building cultural competence to support public health units and other organizations in partnering with and learning from Indigenous populations.

Resources for Further Learning

There is no single knowledge system or way of knowing that applies to all Indigenous peoples. While the following resources offer a starting point for learning more about Indigenous approaches to climate adaptation, they should not replace meaningful and direct engagement.

- **MODULE 2: Indigenous lens on climate adaption planning** (pp. 109 in Two Approaches, One Shared Learning Journey to Support Climate-Health Adaptation Planning, SMDHU)
- **For Our Future: Indigenous Resilience Report** (NRCAN)
- **The Risks and Threats of 'Nature-basedClimate Solutions 'for Indigenous Peoples** (Indigenous Climate Action)
- **From Risk to Resilience: Indigenous Alternatives to Climate Risk Assessment in Canada** (Yellowhead Institute)
- **Climate Atlas of Canada**
- **Indigenous Climate Action**

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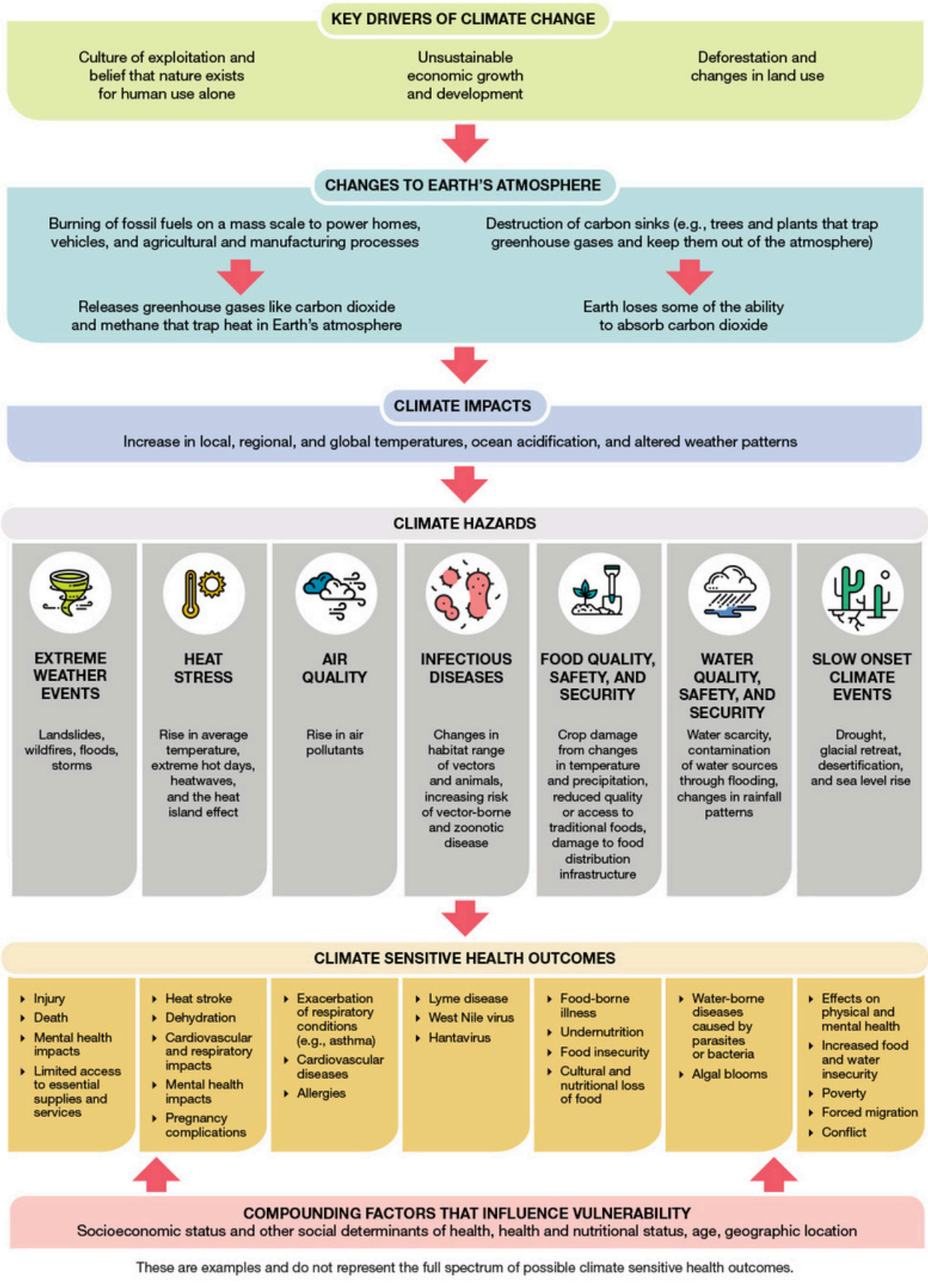
8. Charles-Norris, K-A. (2020). Module 2: Indigenous Lens on Climate Adaptation Planning. Two Approaches, One Shared Learning Journey to Support Climate-Health Adaptation Planning
9. Reed, G., Fox, S., Littlechild, D., McGregor, D., Lewis, D., Popp, J., Wray, K., Kassi, N., Ruben, R., Morales, S. and Lonsdale, S. (2024). For Our Future: Indigenous Resilience Report. Ottawa, Ontario.

Appendix 1: Impacts of Climate Change on Health (**Mobilizing Public Health Action on Climate Change in Canada**, Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2022, Government of Canada)



These are examples and do not represent the full spectrum of possible climate sensitive health outcomes.