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## PREPARING SOCIAL PURPOSE ORGANIZATIONS FOR THE IMPACTS OF CLIMATE CHANGE

A comprehensive analysis of the intersectionality between climate change and social issues in urban contexts, the effect on social purpose organizations, and case studies of intersectional programming.

Prepared for  
**Pillar Nonprofit Network**  
201 King Street London, ON

Prepared by  
**PRAKTical Consulting**  
Western University MES

## Disclaimer

This report is an academic exercise conducted by graduate students in the *Master of Environment and Sustainability* (MES) program in the *Centre for Environment and Sustainability* (CES) at Western University, London, Ontario, Canada. The named consulting company that produced this report is a fictional entity created for the purpose of this exercise. For information on this program, please visit [www.uwo.ca/mes/](http://www.uwo.ca/mes/).

### Authors:

Rideau Haskins

Preet Jassal

Alexandra Keesmaat Freeman

Kara Proeschel

Thurkkha Thayalalingam



# Western

The Centre for Environment  
& Sustainability

## Land Acknowledgement

The writers of this report acknowledge that we meet and work across the ancestral lands of Turtle Island, which may also be referred to as Canada. We respectfully recognize and acknowledge the relationship that the First Nations, Inuit, and Métis peoples across Turtle Island have with their ancestral land.

Through colonialism, settler societies have silenced Indigenous voices and controlled narratives, omitting or misrepresenting Indigenous histories, cultures, and traditions. We recognize that some reconciliatory actions have been made, however, there is a greater commitment to reconciliation and healing required. This commitment to reconciliation is critical to upending the continued oppression and inequities experienced by Indigenous Peoples on Turtle Island. These inequities are evident in social, economic, and health disparities between indigenous and non-indigenous populations, the increased number of Missing and Murdered Indigenous Women and Girls, and the lack of access and quality of necessities including housing, food, and water supplies.

We understand that the interactions between Indigenous communities and the land are a sacred process that needs to be respected. We acknowledge that the impacts of climate change on Indigenous communities will vary and understand that health effects and disparities are presented vastly different from community to community. The information in this report is intended to help highlight some inequities that many Indigenous communities face across Turtle Island while recognizing that it is presented from a Western settler perspective. We recognize and respectfully acknowledge the diversity of experiences of Indigenous Peoples across Turtle Island and that the information shared in this report may not represent the experiences of every Indigenous community.

## Executive Summary

The effects of climate change are widespread, leading to long-term social, economic, and environmental impacts. For mid-sized Canadian cities, some of the major environmental impacts include food insecurity, extreme weather resilience, and environmental pollution. Understanding the intersectionality between social issues in the urban sector and climate change allows organizations to create targeted and effective climate action programs. The primary relationships identified in this report are between climate change and social issues such as poverty, racial inequalities, mental health, climate migration, and food access. This analysis explores the relationship between these topics and the ways in which social purpose organizations in Canada are impacted by a multitude of intersections. Information and recommendations from this report can be applied to any mid-sized city in Canada.

Five social purpose organizations that have implemented socio-environmental intersectional programming were researched and interviewed for this report. The organizations and their primary social focus are as follows:

- Archway Community Services: Provides a range of programs including climate resiliency and response
- The SEED: Tackles food insecurity by creating a circular food system
- Faith & the Common Good: Engages faith communities in climate action
- Greenway-Chaplin Community Centre: Engages community and staff in environmental efforts
- Alternative Land Use Services (ALUS): Promotes agricultural intersectionality and climate resilience

The report compiles a series of recommendations regarding how Canadian social purpose organizations can incorporate climate action into programming and mitigate the negative impacts climate change has on their operations. These recommendations include but are not limited to:

- Educate the community on environmental reduction strategies and a comprehensive view of climate change
- Collaborate with environmental networks and local actors to improve the organization's ability to address climate change, gain access to financial aid, resources, and to bridge the urban-rural divide
- Incorporate on-site green and natural infrastructure
- Reduce operational carbon footprint and environmental impact, allowing for reduced building and operational costs in the future
- Create opportunities for marginalized communities including the BIPOC community members, unhoused persons, and migrants
- Prepare for the growing need in community resources including mental health, cooling and heating stations, and food banks

An educational primer was created as a resource for social purpose organizations to be informed on the intersectionality between the urban social sector and climate change issues. This primer will be distributed to social purpose organizations and will be accessible digitally through the Pillar Nonprofit Network website. It is included in **Appendix C**.

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## 1. Introduction

Climate change refers to the long-term shifts in temperature and weather patterns that cause intense global environmental changes. Drought, flooding, extreme weather, rising temperatures, wildfires and declining biodiversity are increasing at unprecedented levels, and these changes to the natural environment have human consequences.<sup>1</sup> Western Canada is experiencing higher than normal rates of extreme heat and cold events.<sup>2</sup> In urban areas, climate change intensifies social issues like hunger, poverty, natural disasters, water scarcity and forced displacement by climate change, especially for members of the population facing intersectional inequities. Consequently, social purpose organizations will inevitably experience the worsening effects of climate change, whether that be increased demand for their services or lack of access to resources. Furthermore, understanding the intersectionality between climate change and urban social issues is an essential component of how organizations can take action to better serve their client base as they face the social impacts of climate change. Examining existing social purpose organizations in that incorporate climate action into their programming can provide insight and recommendations for other organizations to follow suit.

Intersectionality refers to the combined impacts of people who face multiple sources of inequities. It encompasses but is not limited to race, ethnicity, gender, sexuality, class, (dis)ability, age, language, and religion. The effects of climate change greatly exacerbate the issues that stem from differences in socio-economic status. People living with multiple sources of inequities will be even more impacted. For example, inequities in gender and race are tied to higher rates of poverty. BIPOC community members and female-identifying community members are more likely to be impacted by poverty, have less access to resources, and therefore be more impacted by climate change. This is important for social purpose organizations to consider for projects and programming that incorporates climate change action. The intersectionality between climate change and urban social issues can be further illustrated by the seventeen sustainable development goals (SDGs) outlined by the United Nations (UN). SDGs address the deprivations faced by many in the world (poverty, hunger, unsanitary water) and how their solutions coincide with the strategies that combat climate change.

## 2. Project Information

### 2.1. Objectives

This report explores and explains the intersectionality between climate change and social issues, with an emphasis on the experiences and roles of social impact organizations in urban contexts. Understanding the effects of climate change is important to delivering Pillar Nonprofit Network's broader mission to support nonprofits, social innovators, and social enterprises. This report identifies five social purpose organizations addressing the intersection of climate change and social issues, recognizing the impacts of climate change on social organizations. These case studies are examples of best practices to determine how social purpose organizations can incorporate climate action into their mission and objectives. This report also includes a primer to educate social purpose organizations on climate change effects and recommendations to integrate climate action into their programming. Additionally, this report includes separate pages dedicated to key information from case studies.

### 2.2. Project Description

This report identifies the impacts of environmental problems and climate change on social purpose organizations through an intersectional analysis of socio-environmental issues in urban environments. It provides a deep understanding of how existing and future environmental issues impact social organizations and determines which climate impact's social purpose organizations experience the most. The report develops recommendations on how these organizations can incorporate climate action into their programming to inform and prepare social purpose organizations for the effects of climate change. Research on social purpose organizations with existing programming that addresses social and climate change issues was conducted to inform recommendations. Literature reviews, secondary research, interviews, and previous case studies are utilized to determine the best-practice approaches and strategies for social purpose organizations to identify and address socio-environmental issues.

### 2.3. Scope

The selected case studies are of social-purpose organizations which have implemented programming that simultaneously addresses social and climate change issues. This report does not include for-profit and government organizations as Pillar Nonprofit Network focuses primarily on nonprofit organizations. However, relevant information or examples from such organizations can still be considered if there is a lack of nonprofit programming examples that address the intersectionality of social and environmental issues. The report will consider climate change issues as well as other environmental issues not directly related to climate change, as both will have social impacts. The highlighted environmental issues include, but are not limited to, water and food scarcity, flooding, resource depletion, and biodiversity loss. All research gathered is relevant to social and climate change issues that London, Ontario and similar mid-sized Canadian cities face. For example, the impacts of hurricanes would not be included in the project, as hurricanes are rare in London, Ontario. The report uses research

sources and case studies from 2013 onwards to ensure that the social and environmental issues explored are relevant today.

The report does not focus on how social purpose organizations may impact and contribute to climate change as it falls outside the project's objective to guide social purpose organizations on climate action and incorporating environmental issues into their programming. However, the report may briefly explore or reference this issue as it arises during research.

The report includes five case studies focusing on social purpose organizations in mid-sized Canadian cities. Focusing on mid-sized Canadian cities allows for the extrapolation of findings to social purpose organizations in the London and Middlesex area, which Pillar Nonprofit Network serves. The social purpose organizations considered for the case studies ideally add or improve equity, diversity, and inclusion (EDI) in cities and communities while addressing environmental problems or engaging in climate action.

## **2.4. Deliverables**

1. Identify and characterize the intersectionality between environmental and social issues within an urban context and how environmental issues impact social purpose organizations in mid-sized Canadian cities.
2. Identify how nonprofit social purpose organizations with diverse focus areas can incorporate climate action in their work.
3. Compile five national case studies to include in the final report that illustrate intersectional programming or social purpose organizations incorporating climate change considerations into their programming.
4. Provide a short primer to educate social purpose organizations on their linkage(s) to climate change and climate change impacts that will be available on the internet and shared with other nonprofit organizations, workshops, and educational institutions.

### 3. Intersectionality of Climate Change and Social Issues

#### 3.1. Sustainable Development Goals

The Sustainable Development Goals are a framework through which to understand the intersectionality of climate change and social issues. Created by the United Nations and adopted in 2015, the Sustainable Development Goals (SDGs) are seventeen calls to action for all UN member states to recognize the interconnectedness of eradicating poverty, improving health and education, reducing inequality, promoting economic growth, and mitigating climate change and environmental issues (Figure 2).<sup>3</sup> At their core, the SDGs recognize that planetary and human well-being are inextricably linked. For social purpose organizations, integrating sustainable development goals into their programming is a valuable tool for addressing socio-environmental issues.

Multiple Sustainable Development Goals are addressed by recognizing the intersection between climate change and social issues. Accomplishing Goals 1 (No poverty), 2 (Zero hunger), 3 (Good health and well-being), 5 (Gender equality), 6 (Clean water and sanitation), and 10 (Reduce inequalities) will require actions toward Goals 11 (Sustainable cities and communities) and 13 (Climate action). Social purpose organizations addressing hunger, health, poverty, gender equality, clean water, and reduced inequalities can incorporate strategies that meet targets for sustainable communities and climate action.



Figure 1: The seventeen sustainable development goals created and adopted by the UN. Source: United Nations

### 3.2. Poverty and Climate Change (SDG 1 & 11)

Marginalized and low-income communities will suffer disproportionately from the effects of climate change, deepening the inequality they already face. In urban areas, low-income Canadians are more likely to encounter multiple inequities (relating to gender, race, ethnicity, (dis)ability) that exacerbate poverty.<sup>4</sup> Extreme weather events induced by climate change will disrupt global supply chains and resources availability, impacting the cost of basic necessities, home insurance, and energy.<sup>5</sup> The Canadian Climate Institute estimates that if no action is taken to adapt to increasing extreme weather, the economy will suffer a \$25 billion loss in 2025, with further economic losses in the future. These economic impacts will subsequently cause a drop in incomes and a loss of jobs across Canada.<sup>6</sup> Additionally, the average yearly catastrophic insurable losses from extreme weather in Canada have risen to around \$2 billion, compared to 1980-2008 when losses averaged only \$422 million a year (Figure 3). This will cause home and business insurance prices in Canada to increase due to the anticipation of more frequent and intense extreme weather events.

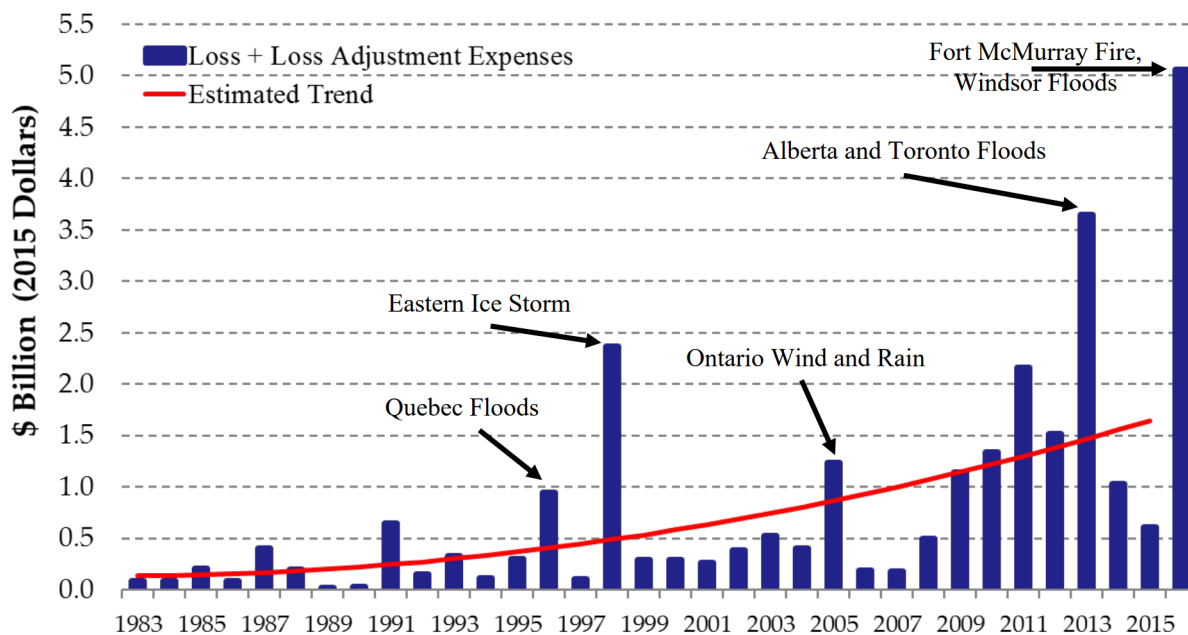


Figure 2: Increasing Catastrophic Insured Losses in Canada from 1983 to 2015 showing how economic losses and insurance claims are increasing. Source: Faith & the Common Good

International recognition that the climate cannot sustain the current rate of GHG emissions has led to government mandated carbon reduction programs across countries and within industries. The Paris Agreement's emissions-reduction targets require Canada to be carbon neutral by 2030. Consequently, the cost of energy and fuel will continue to increase given the effects of Carbon Tax legislation.<sup>6</sup> Resource availability, energy cost, and home insurance will directly impact affordability, especially in Canada's already unaffordable urban areas.

Low-income Canadians are less prepared to handle the direct impacts of climate change-induced weather events, as they live in areas facing increased environmental risk.<sup>4</sup> Urban low-income neighbourhoods are frequently located in flood plains or areas with high levels of air pollution.<sup>4</sup> Additionally, urban low-income neighbourhoods tend to have less vegetation and therefore have increased temperatures and less resilience against extreme weather, which climate change is causing to increase in frequency and severity.<sup>4</sup> Consequently, disadvantaged groups in urban areas are more susceptible to the damage caused by climate change and have a decreased ability to cope and recover from the damage.<sup>4</sup>

Low-income households are less likely to be equipped with weatherproofing, air conditioners, and air purifiers.<sup>6</sup> These factors mean low-income households are more likely to be adversely affected by the climate change impacts of poor air quality and extreme weather events such as storms, heat waves, and forest fires. The unhoused population is at the greatest disadvantage in the face of these impacts. They have no protection against the climate change-induced impacts of poor air quality and extreme weather. Consequently, low-income Canadians are more likely to experience heat exhaustion, heat stroke, respiratory failure, or frostbite.<sup>7</sup>

#### *Sustainable Development Goals and Poverty*

Some SDGs aim to reduce and improve the status of poverty, while also acknowledging the effects of climate change on people experiencing poverty. The first goal of the SDGs is to end poverty in all its forms and ensure that everyone has equal access to basic services and economic resources.<sup>3</sup> This goal also specifically aims to strengthen the resilience of those experiencing poverty and to reduce their vulnerability to climate-related events and the resulting economic, social, and environmental effects. Sustainable cities and communities, SDG 11, aims to increase mitigation and adaptation methods for climate change and the resilience of communities to disasters. This goal recognizes the risk that people experiencing poverty face as a result of climate change and aims to reduce urban poverty and community vulnerability.



*The makeshift homes of people experiencing homelessness are more vulnerable to extreme weather, including winter storms. (Global News, 2018)*

### *Impact on Social Purpose Organizations*

The effects of climate change will increase reliance on social purpose organizations providing services to low-income communities and unhoused individuals. Rising costs of essential goods and services will put financial strain on low-income Canadians, further amplifying the need for community-based resources such as food banks, health clinics, and childcare programs. SPOs operating in high-risk environmental areas should anticipate an additional demand for support during extreme weather events, as their clientele is especially vulnerable. For unhoused individuals, services such as health clinics, cooling spaces, warming spaces and shelters will become even more critical for basic wellbeing.

In addition to the challenges faced by their clients, social purpose organizations will also face increased operating costs due to the rising costs of basic necessities, energy, and fuel. This will particularly impact SPOs that rely on automotive transportation for their programming and services, or those that distribute food or resources. SPOs should also anticipate increased insurance prices, especially if they operate in areas susceptible to extreme weather.

### **3.3. Racial Inequalities and Climate Change (SDG 10)**

Indigenous, Black, and other racialized communities are disproportionately affected by the negative impacts of climate change. Specifically in urban areas, racialized communities have been historically located in spaces with high environmental risks such as air pollution and chemical contamination.<sup>7</sup> This occurs because facilities that produce high levels of contaminants are often located in predominantly BIPOC communities. In Toronto, researchers from York University found that areas with racialized communities and recent immigrants had more soil contamination, waste sites, and industrial land use.<sup>8</sup> For example, over fifty industrial plants are located within a 25km radius of the Aamjiwnaang First Nation of Ontario.<sup>9</sup> Studies have also shown that the prevalence of sustainable and green amenities in urban areas is significantly higher in wealthy areas that are predominantly white.<sup>10</sup> Lack of green infrastructure makes it more challenging for these low-income communities to recover from the effects of climate change, such as poor air or water quality and the increased frequency of natural disasters.<sup>12</sup> For example, during the 2021 heat dome in British Columbia, a higher mortality risk was reported for populations with lower incomes and those living in areas with less green infrastructure.<sup>13</sup> Social purpose organizations that operate in racialized communities with less green infrastructure could take note of this relationship and make efforts to increase green infrastructure, improving community health and climate resilience.



*Green infrastructure such as rain gardens in urban areas. (United States EPA, 2023)*

Climate change specifically impacts Indigenous peoples due to their cultural and spiritual connections with nature. Cultural practices such as hunting, gathering, and fishing are adversely impacted by climate change, affecting Indigenous communities' psychological health, livelihoods, and way of life.<sup>11</sup> These impacts are not just felt in rural First Nation reserves; urban Indigenous populations that travel outside of their cities to perform their cultural practices are also affected. Notably, Indigenous peoples are positioned to positively impact the environment and climate more significantly when in leadership positions due to their traditional knowledge and connections to nature. Indigenous peoples make up less than five percent of the global population, yet they protect 80% of the world's biodiversity.<sup>1213</sup>

#### *Sustainable Development Goals and Racial Inequalities*

The SDG 10 commits to reducing inequalities in all countries and promoting the inclusion of people around the globe, regardless of factors like sex, race, political affiliation, and financial status. The goal recognizes the discrimination felt among different communities, proportion of people living below 50% median income, and the need to adopt social and wage policies to achieve equality.<sup>3</sup> The targets under SDG 10 provide a framework to work towards reducing inequalities, which are also emphasized by climate change, thus reducing racial inequalities too.



### *Impact on Social Purpose Organizations*

Social purpose organizations must recognize the challenges that it may be harder to cater to marginalized communities due to the complex effects of climate change. Therefore, organizations created to support marginalized communities could continue to improve their programming to mitigate the negative impacts of climate change. For example, since marginalized neighborhoods have less green space, community organizations in these areas can work to plant more trees and greenery around the neighborhood.

Social purpose organizations working with the Indigenous communities can incorporate climate change impacts into their operating strategies as it directly impacts Indigenous people's culture and spiritual values. Furthermore, since racial inequalities will continue to exacerbate the social impacts of climate change, social purpose organizations could perform anti-racism advocacy to combat systemic inequalities. Organizations can expect an increased demand for their services (food assistance, housing, or financial support) when climate events, such as disastrous weather conditions cause hardships to their communities.

### **3.4. Mental Health and Climate Change (SDG 3 & 13)**

The intensifying threat of climate change has been identified to affect the psychological well-being of individuals around the world, as declared by the WHO.<sup>14</sup> Climate change impacts also exacerbate many of the factors that lead to poor mental health, such as the inequities stemming from socioeconomic status and gender.<sup>15</sup> Of 95 countries included in a 2021 survey conducted by the WHO, less than 10% had included mental health considerations and support such as increased investment in active transportation, and incorporating mental health support in community resiliency into their climate change plans.<sup>15</sup> The lack of mental health support in areas with marginalized communities is also a source of major concern as these populations are most sensitive to the negative impacts of climate change.<sup>15</sup>

As wildfires, flooding, and heat waves become more frequent in Canada, it is critical to address how these events affect mental health. Mental illnesses such as post-traumatic stress disorder, anxiety, and depression have been prevalent in individuals affected by extreme weather events. Studies have found that psychological trauma stemming from climate-related disasters can be up to forty times more prevalent than psychological trauma from physical injuries, particularly in marginalized communities.<sup>15</sup> As shown in Figure 4, loss of homes and loved ones or injuries caused by extreme weather events have been found to increase the risk of psychological trauma.<sup>16</sup> Additionally, there tends to be higher suicide risks and worsened mood and behavioral disorders in communities that are disproportionately affected by climate change.

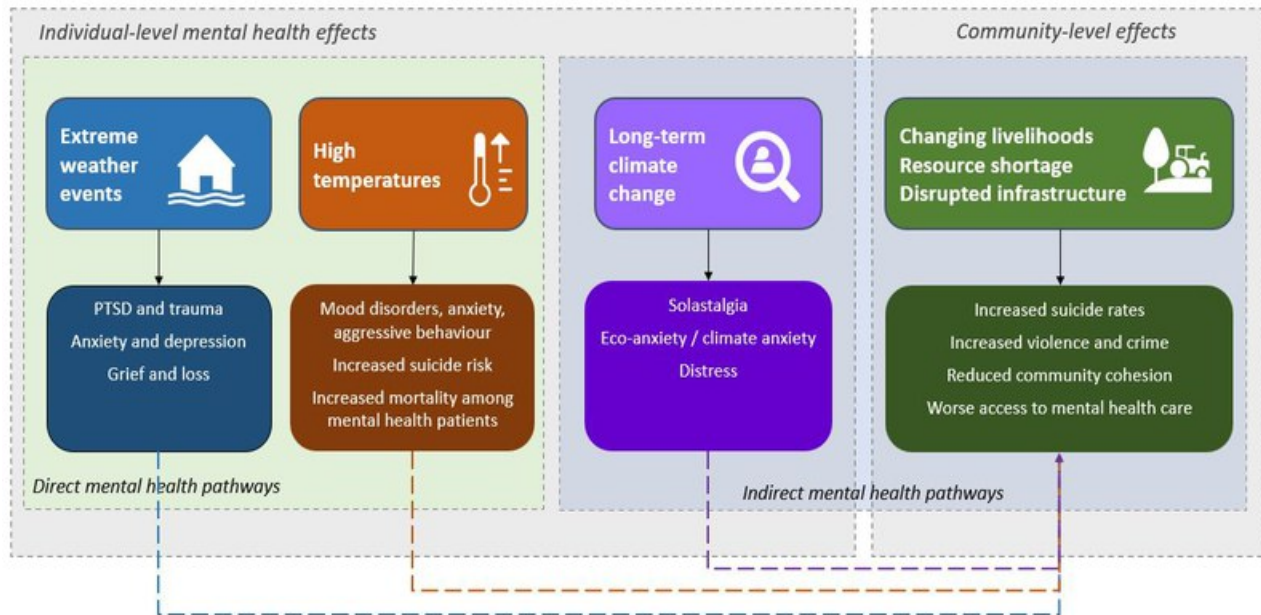


Figure 3: Individual and community level impacts of extreme weather events and climate change on mental health. Source: European Climate and Health Advisory

The prevalence of eco-anxiety, or climate change anxiety, is specifically increasing in youth populations. Eco-anxiety is defined as fear, anger, or hopelessness regarding the future of the planet and its impact on future generations.<sup>17</sup> The idea of eco-anxiety has been referred to in research by terms such as solastalgia, eco-angst, environmental distress, and environmental grief. Populations that are more passionate about environmental issues, including youth, women, and indigenous communities, are more likely to develop eco-anxiety, leading to an increase in suicide rates and long-term health effects for those groups.<sup>18</sup>

#### *Sustainable Development Goals and Mental Health*

The SDGs directly aim to improve global mental health conditions and address mental health struggles, including those caused by climate change events.<sup>3</sup> Ensuring people of all ages experience healthy lives and a positive well-being (SDG 3) aims to reduce the negative impact climate change can have on human physical and mental health. By achieving SDG 3's target, support will be provided to individuals with mental health concerns, a lower suicide mortality rate, and prevent/treat individuals experiencing substance abuse.<sup>3</sup> Additionally, taking action to combat climate change (SDG 13) is critical to reduce mental health conditions and long-term health conditions. Taking proactive measures to address climate change can improve the well-being of those who experience depression, eco-anxiety, and physical or mental trauma, as a result of climate change.

#### *Impact on Social Purpose Organizations*

As the area of study on the intersectionality between mental health and climate change is still novel, social purpose organizations that support mental health can begin to create programs to target environmental issues in their community. Some organizations have already been

providing mental health services following extreme weather events, however, there could be regular initiatives to address the impact of climate change on mental health. Additionally, catering programs to marginalized communities that are disproportionately experiencing the negative impacts of climate change is vital to improving the general outlook and motivation for climate action. Alongside mental health professionals, social purpose organizations play an important role to direct their communities' focus toward positive environmental change while providing support to prevent the development of eco-anxiety.

### **3.5. Migrants and Climate Change (SDG 7 & 13)**

According to a 2022 report from the Environmental Justice Foundation, 41 people are displaced every minute globally due to climate change.<sup>18</sup> Because of this, Canada is projected to see an increase in climate refugees.<sup>19</sup> Climate refugees - or climate migrants - can be defined as migrants who cross borders due to the impacts of climate change. The international community does not officially recognize them as refugees, even as they flee unlivable conditions. Additionally, many climate migrants do not recognize that the reason for their migration is climate related. For example, climate change-induced drought impacts the livelihoods of farmers and many communities in the Global South. Subsequently, citizens start migrating due to the lack of economic opportunities in their country without realizing the root cause of their migration is due to climate change. Furthermore, climate refugees cannot apply for refugee status and must identify as migrant workers to seek economic opportunities in Canada. According to Statistics Canada, immigrants made up the largest share of the Canadian population in 150 years in 2022,<sup>19</sup> and immigrants are more likely to face higher rates of poverty.<sup>20</sup> The large number of immigrants within Canada that also face economic hardship will increase reliance on social purpose organizations.

#### *Sustainable Development Goals and Climate Migrants*

The sustainable development goals (SDGs) have recognized and integrated various solutions to mitigate the impact of climate change on global populations and climate migrants.<sup>21</sup> Providing affordable and renewable energy systems (SDG 7) reduces greenhouse gas emissions and mitigates the effects of climate change, reducing the need and likelihood of population relocation. Climate migrants are considered marginalized communities, and SDG 10 aims to reduce inequalities based on gender, geographic location, and migration status as well as to prevent these groups from being forced to relocate. SDG 13 (climate action) and 15 (life on land) address climate migration, as both goals focus on mitigating climate change effects and promoting sustainable lifestyles, thereby reducing the factors that cause populations to migrate from their homelands.

#### *Impacts on Social Purpose Organizations*

Migrants are more likely to settle in urban areas, resulting in a surplus of people relying on urban social purpose organizations and their programming. Organizational services that may face a higher demand include English classes, food banks, emergency loan services, furniture donations and more. As organizations experience an increase in client bases and client

diversity, future programming can align with the new and expected multiculturalism and linguistic differences. Organizations may have to re-evaluate programming budget, content, and delivery to ensure it is inclusive to present and incoming members.

### **3.6. Food Access and Climate Change (SDG 2)**

Canada's food system is tightly integrated into the global food system as a major importer and exporter of food. Food and beverage processing is the second-largest industry in the country, making Canada the fifth-largest food exporter.<sup>22</sup> The impacts of climate change are regionally based. As global climate patterns shift, inevitable alterations to growing conditions will affect the availability and cost of certain foods as well as change production demands in different areas. Human pressures on the earth's system are causing a rise in the frequency and amplitude of extreme weather events and a reduction in ecological resilience, with food production being "the first victim."<sup>23</sup> Agriculture and livestock production in Canada will likely experience less extreme pressure in other, more vulnerable areas such as sub-Saharan Africa or South America. Canada, however, will encounter unique challenges due to the characteristics of landforms and the type of weather experienced in different areas.

Nearly 2 million Canadians experience food insecurity, with lone, female-parent families in urban areas being the most affected.<sup>24</sup> In Canada, the direct impacts of climate change on food access are seen in northern and Indigenous communities due to the changing duration and thickness of sea ice, unpredictable weather, shifting seasons, and wildfires.<sup>25</sup> Currently, there is a general lack of understanding of how climate change will directly affect food access for urban populations. However, considering the significant integration of Canada's food system domestically and internationally, impacts on Canadian agriculture and the global food system will have indirect and cascading effects on food access in urban areas. Climate change will make it increasingly difficult and financially unrealistic for low-income households in urban areas to access high-quality food.

#### *Global Food System*

Despite the abundance of food produced and exported from Canada, there is significant reliance within the Canadian food system on imports of fruits, vegetables, and processed foods such as coffee, chocolate, and other specialty foods.<sup>26</sup> The Intergovernmental Panel on Climate Change has declared that climate change will adversely pressure global food production, especially in vulnerable regions such as Sub-Saharan Africa, Southern America and the Caribbean, Southern Asia and Western and Southern Europe.<sup>1</sup> Global warming will specifically cause weakened soil health and pollination, create conditions favouring the growth of weeds and invasive species, and shift the distribution of pests and pathogens.<sup>1</sup> Furthermore, a warmer climate increases the need for herbicides while simultaneously decreasing their effectiveness. Ocean warming and acidification caused by the uptake of carbon dioxide are already affecting shellfish aquaculture and fisheries in oceanic regions, adversely impacting food production.<sup>1</sup> Additionally, changing weather patterns are causing the redistribution of

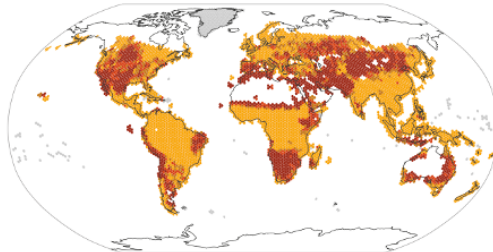
marine fish stocks from mid-to-low-latitude regions to higher-latitude regions. Subsequently, over half of the world's fisheries are expected to experience declining productivity.<sup>27</sup>

Flooding, heatwaves, droughts, extreme precipitation, and natural disasters will cause large and sudden crop losses called “food shocks.” These food shocks cause major and sometimes compounding effects on the global food system, leading to disruptions in the transportation and distribution of food. For example, extreme rainfall in Iowa in the spring of 2019 destroyed grain silos across the state, damaging not only the food supply but also the infrastructure that supported its storage and distribution.<sup>1</sup> Extreme weather and natural disasters will increase in frequency and severity due to climate change, posing a great risk to food systems across the world.

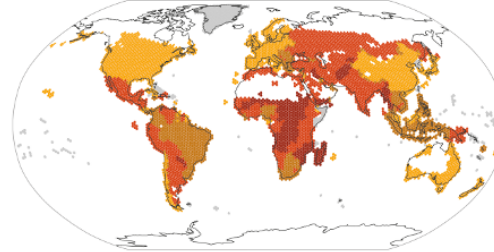
#### Rainfed agriculture: Drought risks, hazards, exposure and vulnerability indicators

Observed period 1986–2015

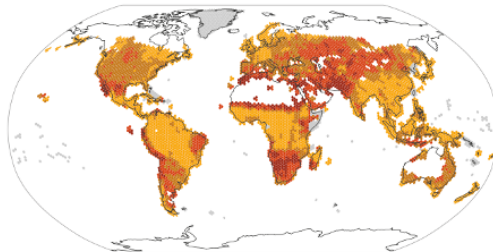
(a) Hazard and exposure indicator score



(b) Vulnerability index



(c) Drought risk index



Indicator scores for rainfed agriculture



Low

High

□ Areas with no crops

■ Areas with no data

Data averaged over 1.5° hexagons

Figure 4: Hazard and exposure indicator score (a), vulnerability index (b) and drought risk index (c), for rainfed agricultural systems between 1986 and 2015. Source: IPCC

Impacts on the global food system have spillover effects on the Canadian food system. If certain products become limited or unavailable, demand on local production and the cost of imported foods will increase. Declining or more expensive supply will undermine the availability and affordability of food in Canada, particularly for those already vulnerable to food insecurity.

#### Food production in Canada

Canada's diverse landforms and types of weather make agricultural production unique to each region. For example, the dry farmland in Alberta and Manitoba is best suited for hay, field crops, and cattle, whereas British Columbia's climate is better for producing horticulture and mushrooms.<sup>28</sup> Nonetheless, these areas are vulnerable to symptoms of climate change,

including temperature fluctuations, varying precipitation and wind levels, and the increase in pest-related diseases in crops and livestock. Understanding the intersection between the impacts of climate on agricultural production and access to food is critical to continue managing the relationship between climate change and food production.

Increases in temperature cause stress to crops and livestock sensitive to high heat levels, limiting growth and causing lower yield.<sup>29</sup> High temperatures and dry weather augment the demand for irrigation while limiting irrigation capacity. Temporal imbalances between seasons introduce pests and diseases, affecting the health of livestock and crop yield and making it challenging to manage farming practices for the upcoming year. Physical damage to agricultural lands, such as the uprooting of plants, dispersing loose soil, or breaking down growing crops, is also caused by heavy rainfall and winds. These disruptions to food production will be felt in urban areas that rely on Canada's agricultural sector for the distribution and access to food.

#### *Sustainable Development Goals and Food Access*

The sustainable development goals tackle a range of critical global issues, including world hunger and food access. The second SDG, zero hunger, focuses on food security, and promotes nutritional and sustainable agriculture, to ultimately end world hunger.<sup>3</sup> The zero-hunger goal, however, faces climate change challenges, such as varying weather events, which affects food production and availability in various regions. Food consumption is also addressed in the twelfth SDG, responsible consumption, and production patterns. Sustainable food consumption practices, such as reducing food waste or purchasing from local growers, contribute to addressing these issues by ensuring that we consume only what we need and supporting sustainable food production methods.

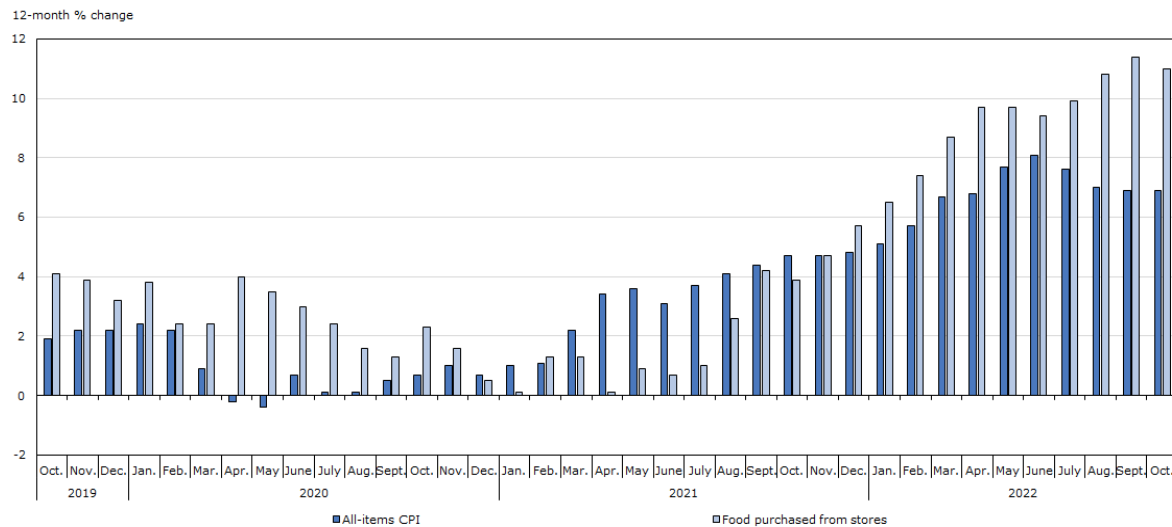
#### *Impact on Social Purpose Organizations*

Social purpose organizations focusing on agriculture, farmer welfare, and food production are undeniably at the forefront of the effects of climate change and food access in Canada. Social purpose organizations could begin to adapt their programming to address and mitigate the negative influences of climate change. Specifically, they can gain a better understanding of the long-term effects of climate change on crop yield, implement nature-based solutions to sustain ecosystem services disrupted by climate change, or begin investing in climate-resistant crops or livestock.

In urban areas, food banks are the primary response to food insecurity in Canada, sourcing food from manufacturers, producers, retailers, and donations from the general public. Presently, food banks serve households experiencing extreme food insecurity, and their usage is perceived as a last resort.<sup>24</sup> Figure 6 displays how food prices have increased from 2019 to 2022, thus affecting food access. If food access declines for the general population, food banks can expect more users that are experiencing extreme food insecurity. Relying on donations of excess from manufacturers and producers, limited food availability can have a significant impact on food banks and other social purpose organizations that address food

insecurity. With the effects of climate change on food access compounding, these organizations and their users are facing increasingly challenging circumstances.

**Food purchased from stores has outpaced headline inflation since December 2021, Canada, October 2019 to October 2022**



Source: Statistics Canada, table 18-10-004-01 - Consumer Price Index, monthly, not seasonally adjusted.

**Figure 5: Canadian food prices have increasing from 2019-2022. Source: Statistics Canada**

### 3.7. Environmental Pollution and Health (SDG 3, 6, 13, & 15)

#### *Impacts of Air Pollution*

Social positionality influences exposure to environmental impacts, including air pollution. Communities with low socio-economic status end up residing in areas that experience an<sup>30</sup> Air pollution has many damaging impacts on the human body and health institutions. Pollutants such as ozone and particulate matter can cause various respiratory illnesses and chronic cardiac irregularities.<sup>31</sup> A study conducted in Hamilton, Ontario concluded that the highest concentration of air pollutants exposed to the majority of residents was a result of vehicle emissions.<sup>32</sup> The heaviest impacts were on those living in highly condensed urban areas located near city traffic or close to nearby industrial operations.<sup>32</sup> Changes to weather patterns and weather severity brought on by climate change can further influence the production and movement of pollutants, increasing exposure to harmful respiratory toxins.

#### *Wildfires and Particulate Matter*

Wildfire smoke exposure has a lasting and far-reaching impact on communities and wildlife. Changes to temperature and precipitation are influencing the frequency of wildfires, extending the fire season, and broadening the accumulated area of wildfire.<sup>33</sup> Pollutants spread by wildfire smoke include carbon monoxide, nitrogen dioxide, ozone, volatile organic compounds, and particulate matter.<sup>33</sup> Specifically, fine particulate matter can be incredible dangerous to one's health and cause issues in both the lungs and the heart. As displayed in Figure 7, fine particulate matter accumulated approximately 35% of Alberta's annual air pollutants emissions in 2020, which is understandable given the increase in wildfires that year.<sup>34</sup> Studies have highlighted a significant connection between wildfire smoke exposure and declines in lung

function, doctor visits for respiratory problems, and respiratory hospitalizations.<sup>33</sup> Wildfire smoke can travel for up to thousands of kilometers away from the burn site. This means that wildfires happening in other countries can have the smoke and associated particulate matter appear in certain parts of Canada.<sup>34</sup> Certain community areas or vulnerable populations may experience a higher degree of exposure to wildfire smoke due to their location, socio-economic status, or pre-existing health conditions such as asthma.<sup>33</sup>

### Distribution of air pollutant emissions by province and territory, Canada, 2020



Figure 6: In Alberta, nitrogen oxides and fine particulate matter were the two highest pollutants in 2020; while carbon monoxide and volatile organic compounds were the two highest pollutants in Ontario in 2020. Source: Environment and Climate Change Canada

### Persistent Organic Pollutants

Abundant in the natural environment, persistent organic pollutants (POPs) are being introduced into ecosystems at an alarming rate. These devastating chemical contaminants persist over long periods and are difficult to manage and remove because of the complex global transport process.<sup>35</sup> POPs include pesticides and chemicals introduced through industries such as forestry, horticulture, agriculture, and in some cases, natural events such as volcanic eruptions and wildfires.<sup>35</sup> POPs accumulate in animals, humans, food systems, and water supplies, leading to health hazards and negative environmental impacts.<sup>35</sup> Human health effects of POPs include increased risk of cancer, hormone disruption, cardiovascular disease, obesity, and learning disabilities. These health effects can impact anyone, regardless of their location, class, or status.<sup>35</sup> Climate change is expected to alter the exposure patterns of POPs.<sup>36</sup> Sea ice coverage will increase POP mobilization as ice continues to disappear over the next 30 years due to rising temperatures.<sup>36</sup> This will lead to a significant release of stored pollutants into our environment.<sup>36</sup> Bushfires and wildfires lead to increased POPs in the environment from biomass burning, regrowth of vegetation, and soil distribution.



### *Waterborne Illnesses and Diseases*

In Canada, the risk of waterborne illnesses will be increased by heavy rainfall, floods caused by increased runoff, faulty water treatments, and drought.<sup>37</sup> The increase in heavy rainfall and precipitation will escalate the amount of waste runoff (human and animal), as well as wildlife manure into water reservoirs contaminating the available sources used for drinking water.<sup>37</sup> Furthermore, climate change will impact the intensity and length of the quarterly seasons.

Waterborne diseases are spread through contaminated drinking water, through exposure from swimming and water activities or food contamination.<sup>37</sup> Water can be contaminated in a multitude of ways, including animal or human waste, leaking septic systems, runoff from agricultural lands, or failure in water treatments.<sup>37</sup> Weather is often a main factor in increasing the prevalence of waterborne diseases.<sup>37</sup> This can be seen through the outbreak of toxoplasmosis in Victoria, British Columbia that occurred in 1995.<sup>38</sup> This outbreak was a result of heavy rainfall and runoff that contaminated local water reservoirs.<sup>38</sup> Due to the increase in melting snow and ice caps in the North, the intensity of rainfall and runoff will continue to increase in Southern areas more often due to these impacts of climate change. As rainfall continues to intensify, these types of contamination events will happen more frequently in urban areas.

### *Sustainable Development Goals and Environmental Health and Pollution*

The SDGs have recognized and integrated various solutions to mitigate the impact of climate change on environmental pollution and community health. Ensuring healthy lives and well-being for all (SDG 3) addresses all major health issues impacting individuals of all ages. This goal attempts to reduce health inequalities, systemic barriers, and social determinants of health so that everyone receives the same level of care regardless of their where they are or who they are. SDG 6 (clean water and sanitation) aims to ensure access to safe water sources and sanitation for all, while SDG 13 (climate action) and 15 (life on land) address community health and environmental pollution by advocating for climate change mitigation strategies.

### *Impacts on Social Purpose Organizations*

Climate change will worsen the exposure to environmental pollution as climate disruptions shift how contaminants are currently contained in the natural environment. Unsheltered and vulnerable communities are more likely to be exposed to these contaminants and experience adverse health effects. There will be an increase in reliance on social purpose organizations providing community health services, as well as an increase in health-related issues for social purpose organizations serving these vulnerable populations.

### 3.8. Summary of Intersectionality between Climate Change and Social Issues

The social issues presented in this report do not encapsulate all the impacts caused by climate change. The six different chosen social issues highlight large areas of impacts for social purpose organizations that will continue to get worse if no preventative measures are mentioned or discussed. Below is a summary point from each of the social issues previously mentioned, for social purpose organizations to take into consideration.

#### *Key Takeaways for Social Purpose Organizations*

- SPOs providing services to low-income Canadians and unhoused individuals will experience increased demand for their services, especially if the SPO is operating in an area that is vulnerable to extreme weather. In addition to the challenges faced by their clients, SPOs will likely experience an increase in their operating costs.
- SPOs that operate in racialized communities with less green infrastructure can take note of the relationship between systemic racism and poor health outcomes in marginalized communities, and make efforts to increase green infrastructure, improving community health and climate resilience.
- SPOs that support mental health can begin to create programs to target environmental issues in their community.
- As SPOs experience increased client bases, future programming can align with the new and expected cultural and linguistic diversity, as well as re-evaluation for program budgets, content, and delivery to ensure the inclusivity to present and incoming members.
- SPOs could gain a better understanding of the long-term effects of climate change on crop yield, implement nature-based solutions to sustain ecosystem services disrupted by climate change, or begin investing in climate-resistant crops or livestock.
- As climate change and environmental pollution impacts continue to worsen, there will be an increase in reliance on SPOs providing community health services as well as an increase in health-related issues for SPOs serving vulnerable populations.

## 4. Case studies

### 4.1. Selection Rationale

The goal of examining the following selected case studies is to identify best practices for how social purpose organizations can incorporate climate action into their mission and objectives. These best practices can then be used to provide recommendations to other Canadian SPOs. The following organizations were chosen because of their existing programming that addresses the intersectionality of social and environmental or climate issues:

- Archway Community Services
  - A food bank that also provides extreme weather resilience and response
- The SEED
  - Tackles food insecurity by creating a circular food system
- Faith & the Common Good
  - Engages faith communities in climate action
- Greenway-Chaplin Community Centre
  - Engages community and staff in environmental efforts
- Alternative Land Use Services (ALUS)
  - Promotes agricultural intersectionality and climate resilience

Case studies were generally chosen from mid-sized Canadian cities and were found through general research or recommendations from Pillar Non-Profit. To understand the full scope of each organization's work, virtual interviews were conducted with a member of their leadership team when possible.

## 4.2. Archway Community Services

### *Organizational Background*

Archway Community Services is a multi-service nonprofit operating primarily in Abbotsford, Chilliwack, and Fraser Valley, British Columbia and continues to expand province wide. Archway provides over 100 programs to the public, including programming for children, youth and adults, addiction counselling services, parenting classes, and services for the unhoused. The organization promotes social justice, well-being, and positive leadership within its communities of operation.

### *Intersectional Programming*

In the wake of extreme weather events in British Columbia since 2021, Archway Community Services has been adapting its services to provide emergency relief. During the 2021 heat dome in British Columbia, many residents had no cool air or resources to accommodate the harsh conditions. Archway recognized that their client base, specifically elders and youth, were vulnerable to the heat but relied on other organizations to help, such as Greenpeace or Red Cross. In the fall of 2021, British Columbia was impacted by a flood and the food bank of Archway Community Services was called in to help as it was the largest food bank in the area. Archway recognized the need to expand its services beyond providing food to include the evacuation of vulnerable individuals. Archway volunteers assisted people experiencing homelessness, farm workers, farms, and other people at risk to safely leave the area.

While helping the community during these two catastrophic weather events, Archway recognized the need to incorporate services to address how climate disasters and climate change will impact their clients. Archway acknowledged the need for clearly established roles so community members would know which organizations to turn to for assistance during times of environmental distress. They began preparing for the future to ensure their community is safe. Archway is working with the City of Abbotsford to create a retroactive survey of their clients to understand how they have been impacted by weather disasters and what resources clients would require before, during, and after these events. Archway also began researching the systemized ways for a community to deal with future climate disasters. Archway strives to be more intentional in its support during climate disasters and has been focusing on extreme heat and cold events. During heat events, they have frequent wellness checks for their seniors' program (including providing extra water, sunscreen, and air conditioning units) and they have introduced building upgrades such as misting stations. During extreme heat and cold weather events, Archway promotes its locations as refuge stations for individuals that are unhoused and those with limited resources. Archway Community Services will be prepared for climate events as they continue to implement climate change considerations into their services and programs. They continue to calculate how its services and volunteers can best support the community every day and during crises.



*Emergency Reception Centre set up by the City of Abbotsford that Archway volunteered at during major flooding events (Archway Community Services, 2021).*

As an organization, Archway Community Services continues to promote environmentally friendly practices to reduce its own carbon footprint. The locations of their facilities are not well supported by public transit systems, therefore, the majority of their staff and patrons must drive. They have proposed a plan to create an electric vehicle charging station on their premises to allow users to charge their cars at work. Additionally, Archway is upgrading to energy efficient windows to further manage their buildings' energy consumption.

#### *Relevance of Archway Community Services*

Archway Community Services recognized the social impacts of climate change and immediately took action to incorporate climate change into their plans and strategies. Specifically, their programming addresses the social impacts of extreme weather. Additionally, the organization is reducing their own environmental impact, which will reduce operational costs in the long run, which is important as climate change impacts financial capacities of social purpose organizations.

#### *Summary of Archway Community Services Best Practices*

- ✓ Recognize the impacts of climate change based on their client base and catchment
- ✓ Incorporate extreme weather preparation into their programming and services
- ✓ Promote sustainable practices to reduce their own environmental impact

### **4.3. The SEED**

#### *Organizational Background*

The SEED is an organization dedicated to providing healthy food to people of all income levels in the City of Guelph, recognizing that over 20,000 people in Guelph-Wellington do not have access to healthy food. Their objective is to build a circular food system “fueled by the community and filled with dignity.” The SEED aims to drive this system change through social enterprise (particularly the employment of young people), community involvement, collaboration with other community organizations, building good food into the health care system and advocating for improved government policy. Recognizing the community food security needs and the climate and environmental impacts of wasted food, The SEED created several initiatives addressing this intersection.

#### *Intersectional Programming*

In partnership with the University of Guelph’s entrepreneurship program, The SEED created the Upcycle Kitchen. This initiative aims to collaborate with local farmers, suppliers, and businesses to minimize food waste and create delicious and nutritious products and meals, after discovering that a significant amount of food from distributors was being discarded for imperfect appearance despite its nutritional integrity and quality. The SEED also employs out-of-work youth through the Upcycle Kitchen, providing valuable training and experience. The first products created in the Upcycle kitchen were ketchup made from deformed tomatoes and bread from spent grain provided by a local brewery. To increase access for those in food need, the products produced by the Upcycle kitchen are sold at pay-what-you-can prices alongside the other food on their website. Ultimately, The SEED hopes to see Upcycle Kitchen products on retail shelves and delivered to student nutrition programs.

The Upcycle Kitchen has faced challenges in implementation. “Rescued” or imperfect food can be perceived as inferior or less desirable to food purchased at grocery stores – The SEED is actively trying to change these perceptions. Additionally, as it relies on donated food, there is unpredictability in its supply - both too much food and not enough. To manage these inconsistencies, The SEED freezes ingredients until all ingredients arrive or provides excess produce to The SEED’s food distribution programs.

The SEED also has a Community Food Warehouse that stores and distributes fresh produce. Most produce is received from Second Harvest, an organization that collects food deemed “unfit” for grocery stores. As a “food rescuer,” Second Harvest collects a surplus of edible and usable food from businesses and redistributes this food across their network of organizations and communities, including The SEED. The Community Food Warehouse then redistributes to local food banks and school programs in the Guelph-Wellington area. Through the Warehouse, food that would normally end up in a landfill is diverted into the homes of Guelph-Wellington.



*The Seed's sliding scale fresh food market to provide affordable food to community members of all incomes (The SEED, 2022).*

The SEED is involved in advocacy for food systems change and is the founder of Our Food Future. This initiative promotes and advocates for circularity in the food sector for the sake of the planet and people. Collaborating across organizations in the Guelph-Wellington area, Our Food Future aims to support the first circular food system in the area.

#### *Relevance of The SEED*

As an organization that addresses food insecurity, The SEED has created a localized and circular food network that is more resilient in the face of climate impacts than the traditional model of Food Banks. The Upcycle Kitchen and Community Food Warehouse divert waste while also expanding access to high-quality food for their community. Through these programs, the SEED directly addresses the food insecurity needs of their community and begins to transcend the limitations of Canada's food system.

#### *Summary of The SEED Best Practices*

- ✓ Recognize and address the intersections of climate change, food security, and food waste
- ✓ Strengthen communities' access to local food while greening the local food system and reducing food waste
- ✓ Advocate for circularity in the food sector for social and environmental reasons

#### **4.4. Faith & the Common Good**

##### *Organizational Background*

Faith & the Common Good is a Canada-wide interfaith network, encouraging spiritual and faith communities to work towards creating greener, more resilient, and sustainable neighbourhoods. Through effective education and collective action, these goals can be achieved. The organization's core goals are to build capacity via diversity, harness & motivate sustainability, and strengthen communities. Faith and the Common Good was founded by United Church ministers who educated United Church groups across the country on environmental issues. Through this, the founders became aware of the high demand from other faith groups who were eager to address and counteract the effects of climate change.

##### *Intersectional Programming*

Working with municipalities, Indigenous communities, and other faith-based or environmental partners, Faith & the Common Good has targeted a variety of environmental issues, including clean energy, active transportation, and clean water. Through Faith & the Common Good's longest-running program, Greening Sacred Spaces, faith groups are taught how to reduce their carbon and ecological footprints through webinars, workshops, certifications, and audits. One of the organization's primary goals is to support the reduction of emissions and waste produced by faith groups within their network. Practices include changes to lighting, insulation, and water usage to lower the community's energy consumption and also to save money from emissions and energy utilization.

One of Faith & the Common Good's programming goals is to provide adequate and equitable resources such as workshops and guides for clean energy in faith buildings to vulnerable populations within the community they work with. In the city of Hamilton, one of the faith groups in Faith & the Common Good's networks conducted asset mapping to catalogue the resources available to them to combat the local effects of climate change through an initiative called the Lighthouse Project. They also aim to identify which communities will require more resources given the disproportionate effects climate change can have on groups including visible minorities, individuals below the poverty line, and individuals living with physical disabilities.

Faith & the Common Good collaborated with the City of Brampton's municipal staff to train members of faith communities to become first responders. The organization has also been encouraging communities within its network to act as cooling or warming centers, offering food and phone charging stations during these emergency situations, and educating their community members about climate change and how they can prepare for climate related emergencies. The organization also has volunteers that help install high-end equipment such as generators and food preparation facilities when required by the communities they operate in.





*Community Asset Mapping conducted by St. Luthern Church in Hamilton, Ontario (Faith and the Common Good, 2018)*

#### *Relevance of Faith & the Common Good*

Faith & the Common Good is a leader in supporting diverse faith communities in Canada to incorporate climate action and sustainable practices into their organization. Since 2015, the organization has provided their community with ways to work together, adapt and prepare for extreme weather events. Faith & the Common Good has assisted major cities such as Brampton and Hamilton in extreme weather emergencies.

#### *Summary of Faith & the Common Good Best Practices*

- ✓ Recognize the impacts of climate change and the role that faith communities have on the environment
- ✓ Educate diverse faith groups on how to reduce their environmental impact
- ✓ Create sustainability resources for members of the organization's network
- ✓ Implement faith-based environmental programming for vulnerable populations

#### 4.5. Greenway-Chaplin Community Centre

##### *Organizational Background*

The Greenway-Chaplin Community Centre is a social service organization based in Cambridge, Ontario, providing an array of services and programs to their local community. Programs include teen drop-ins, ESL clubs, women's support groups, low-cost childcare, support for seniors, support for low-income parents, vaccine clinics, nurse clinics, and food markets. Through their programming, they cater to the needs of their community which may be affected by gender inequality, ageism, hunger, poverty, healthcare barriers, and experience language difficulties.

##### *Intersectional Programming*

Though Greenway is in its preliminary phase of integrating climate change impacts into its operations, they continue to add more environmental initiatives into the programs they offer. Initiatives include recycling and composting onsite and purchasing more reusable materials for their events. Additionally, their youth programs have taken an environmental approach with events such as community clean-ups, micro forest tree-planting, and conversations about composting and resource consumption. A community garden program called “Greenway Can Grow” was also established and runs in tandem with edible home gardening webinars.



*Greenway-Chaplin Community Centre's 2021 Backyard Garden (Greenway Chaplin, 2021)*

The Greenway-Chaplin Community Centre is a member of Sustainable Waterloo, as an observing organization, and pledges to incorporate sustainability into their organization.

However, internal changes have been kept to a minimum due to a shortage of staff and resources. The main challenge for Greenway-Chaplin is in promoting and articulating their potential sustainability initiatives to funders, donors, and community members. In the future, Greenway-Chaplin aims to create and distribute climate education resources to community members and to celebrate the sustainability work across the non-profit sector.

#### *Relevance of Greenway-Chaplin*

The Greenway-Chaplin Community Centre is taking the critical first step in implementing climate change into its programming by recognizing the impact, creating environmental related programming, and collaborating with other environmental groups. By taking the steps to include climate education and mitigation strategies to their programming, Greenway-Chaplin can begin to protect their client base, most of whom are vulnerable to the impact's climate change can have on their lifestyles.

#### *Summary of Greenway-Chaplin Best Practices*

- ✓ Recognize the social impacts of climate change
- ✓ Strengthen communities' access to local food and resources which climate change has created barriers to
- ✓ Pledge to incorporate sustainability into programming, engage staff in green initiatives, and reduce environmental impact
- ✓ Join an environmental network to learn about sustainable practices and collaborate with other organizations on community projects

## 4.6. ALUS (Alternative Land Use Services)

### *Organizational Background*

ALUS is a nationwide farmer-led charitable organization that engages farmers with the ecosystem services their land provides and encourages implementing nature-based solutions on agricultural land. The organization is self-described as a social purpose organization with environmental co-benefits, meaning there are positive environmental outcomes from their actions as an organization. Since 2000, ALUS has partnered with over 450 Canadian provincial and federal organizations, including Environment and Climate Change Canada, Natural Resources Canada, the Greenbelt Foundation, and Ontario Wildlife Foundation. Within their catchment areas, ALUS fosters relationships with the local Indigenous communities, local corporations, and social purpose organizations that impact the surrounding communities. Intersectionality guides ALUS's practices and programs. Understanding their community's social structure is critical to supporting farmers, providing knowledge, and creating thriving agricultural lands and ecosystems.

### *Intersectional Programming*

ALUS collaborates with farmers that have identified land that is marginal or uneconomical and helps to enhance the landscape. Improving the quality of the land can increase agricultural yield or assists the farmer in naturalizing the land, meaning it re-establishes the land's native species. The newly transformed land produces economic and intrinsic value for the farmer in the form of various ecosystem services and food production. In addition to the monetary value of their land, farmers can begin to learn more about the health of their land, ways to implement climate mitigation strategies on their property, and participate in local environmental conservation efforts. Becoming more involved in environmental conservation groups is especially important to rural Canadian farmers, who often feel disengaged by government-led urban-centric environmental activism.

ALUS has established chapters all over Canada and Ontario, including counties in southwestern Ontario like Middlesex, Norfolk and Elgin. Although the chapters are geographically connected, they are not homogenous, and thus the services are not linear across the three counties. The communities present in each county prioritize and target their specific needs during the planning and decision-making process. Programs are unique to the social conditions, crops/livestock or ecosystem service for each farmer. In Middlesex County, initiatives are focused on the Thames River watershed to keep the river clean and topsoil intact, and on livestock due to the small crop diversity. Elgin county has a diverse mix of crops, and its programming focuses on restoring wetlands to slow water influenced erosion and planting tallgrass to hold soil in place. Norfolk County has the most diverse crop range out of the three counties, most notably their tallgrass prairies and sandplain grasslands. The county mainly focuses on the restoration of tallgrass prairie and sandplain ecotypes. Tallgrass serves as a great ecological asset, a habitat for pollinators, and food for insects. Pollination will increase the health and crop yield of landscapes. This not only benefits the farmer, as it can

increase the services they can provide, but will also benefit the environment by providing a safe environment for pollinators and a flourishing ecosystem.

ALUS also aims to bridge the gap between urban and rural communities. For example, in an Albertan county, the residents wanted a more livable community with more green space. ALUS worked with farmers to turn non-productive areas of their land into functioning green spaces. Not only does creating more green space benefit the community's well-being, but it aids biodiversity, air quality, flood protection, and water filtration. It also aids the economy: water filtering plants upstream of a municipal water treatment plant will reduce its operating costs. Involving farmers in green space projects helps farmers recognize their relevance and impact on social and environmental issues. ALUS asks farmers to reconsider and enhance their farm's purpose and value.

ALUS has identified farmers and their associated farmland to be vulnerable to extreme weather events as a result of climate change. Specifically, rainfall intensity and frequency have increased in the last decade, along with unpredictable weather forecasts, posing a challenge to farmers. During extreme rainfall episodes, the soil becomes overly saturated and rain runoff will begin to wash off the topsoil of the crops, influencing crop yield. As a result, the long-term sustainability of the farm becomes impacted affecting crop availability and the farmer's livelihood. Moreover, upon entering water bodies, the nutrient-rich runoff will cause eutrophication, disrupting aquatic ecosystems, drinking water systems, and, thereby, human health. ALUS has worked to find a nature-based solution to manage and slow down runoff by creating natural buffers and wetlands. By slowing the water runoff, buffers and wetlands allow for more water absorption at a slower rate and offer a natural filtration system, removing excess nutrients from the runoff before reaching the water body.



*Before (left) and after (right) photos of a project in Assiniboine West, Manitoba in planting cattails to filter water pollutants to improve water quality and remove impurities from the water (ALUS, 2022)*

*Relevance of ALUS*

As an SPO aiming to bridge the disconnect between rural and urban communities, ALUS recognized the impacts of climate change and built programming to address these impacts, helping farmers adapt to extreme weather and rainfall by employing nature-based solutions. Climate resilience in agriculture is extremely important, as we all rely on agriculture and water bodies for our food, drinking water, health, and livelihoods. The urban and rural connection is also important. Social purpose organizations in mid-sized cities may not think to engage with the surrounding rural areas and this is a missed opportunity. Collaboration is key to adapting to climate change impacts.

*Summary of ALUS Best Practices*

- ✓ Recognize the impacts of climate change and build programming to address them
- ✓ Strengthen communities' access to local food and clean water
- ✓ Foster collaboration between urban and rural communities
- ✓ Implement nature-based solutions for climate resilience and a positive environmental impact

## 5. Recommended Actions

### 5.1. Strategies for Social Purpose Organizations

To combat the challenges presented by climate change, social purpose organizations can begin to take action and cultivate strategic plans and programs to ensure their operations can flourish and be effective in their missions by mitigating the effects of climate change felt by their clients. Planning for climate change impacts can be unique to each organization and its client base.

#### *Advocacy on socio-environmental issues*

Social purpose organizations can be powerful voices in advocacy and activism because of their tangible experience with social issues and social change. When considering policy advocacy at the federal, provincial, and municipal levels, it is critical that SPOs mobilize on climate and environmental issues – even if this has historically been beyond their scope. Since climate change further exacerbates inequality, advocating for equity and justice is equally important. As Canada works towards its goal to be net-zero by 2050, many organizations are calling for a just transition. Advocating for policy change within society will begin to address the structural inequities that affect SPOs client base. Below are policy areas in which social purpose organizations would offer a compelling perspective in advocating for change:

1. **Supporting Indigenous environmental activism, stewardship and self-determination:** Indigenous peoples across the world are the most significant protector of biodiversity and the natural environment. Indigenous peoples have been at the forefront of environmental advocacy because of their deep connection to land and traditional way of life that emphasizes the importance of living in harmony with nature. This connection and knowledge of land and its resources has enabled Indigenous communities to develop sustainable land management practices that have been effective for centuries. Allyship with Indigenous peoples contributes to ongoing reconciliation and environmental protection.
2. **Public transportation that services low-income areas:** There is less likely to be public transportation in low-income areas. Advocating for increased effective public transportation, especially in SPOs service areas, is necessary in increase accessibility to various services and employment opportunities with the city. This is particularly important for low-income individuals who may not have access to a car or other means of transportation. Many cities have better transit coalitions to collaborate with or support.
3. **Bike Lane Networks:** Biking is another affordable transportation option that improves physical health. Increasing mobility within the city promotes social equity for those without access to a car. Withing urban contexts, bike lanes are necessary to ensure the safety of users and encourage communities to participate in cycling. Many cities have local biking groups to collaborate with and support.
4. **15-minute cities:** This is urban planning concept that argues everyone living in a city should have access to most daily needs within a 15-minute walk or bike. The concept reduces carbon emissions by decreasing the use of cars and increasing human well-

being. The 15-minute city ensures that all people, regardless of location, have access to the services they need for work, food, health, education, and leisure, regardless of socio-economic status or access to cars.

5. **High-density affordable housing:** Affordable housing refers to housing that is affordable for low to moderate earners, generally 30% of a household's gross income. Affordable housing in urban areas is necessary to ensure that those earning moderate incomes, such as a teacher or dental technician have safe and decent places to live. Increasingly, this demographic is being pushed out of urban areas or is struggling to provide necessities within their households. From an environmental perspective, increasing density (more homes per lot of land) reduces the presence of harmful suburban sprawl or greenfield development. Encouraging high-density affordable housing in urban areas promotes environmental and social well-being.
6. **Applying the circular economy to Canada's food system:** Regenerative food production entails growing food in ways that improves biodiversity, air, and water quality while creating health and stable soils (Ellen Macarthur Foundation). Food waste can also be eliminated by encouraging the redistribution of food that does not need meet cosmetic standards for restaurants or grocery stores - programs like Second Harvest need to be replicated at scale.
7. **Green space, such as parks, ravines, and outdoor leisure spaces, especially in low-income areas:** Green space increases biodiversity and air and water quality and promotes physical and emotional well-being for its users. The presence of green space within a community promotes climate resilience through carbon sequestration, heat reduction, water management and biodiversity conservation.
8. **Supporting climate migrants and climate migrant activism:** Canadian and global non-profit organizations continue to advocate for the justice and safety of migrants forced to move due to climate change. Climate Displacement Planning Initiative (CDPI) is a Canadian non-profit that creates resources to help people moving within and into Canada due to climate change. CDPI also helps local Canadian governments and cities in addressing and supporting climate migrants.<sup>39</sup> Similar to the CDPI there are global organizations, such as Climate Refugees, that share the mission of working with climate migrants and local governments to ensure migrants are supported and successfully transition into their new living conditions. The Climate Action Network also supports climate migrants through political advocacy.

Advocacy in practice will look different depending on the type and capacity of the social purpose organization. Organizations can perform advocacy by signing, creating, or sharing petitions, speaking at city council meetings, meeting with provincial government representatives, organizing, attending, or sharing information about protests, and engaging with other local organizations to strengthen advocacy efforts. Making municipal and provincial governments aware of the social impacts of climate change may incite a stronger willingness to act. Identifying existing social and environmental causes locally and nationally can provide a



starting point for existing movements to support. Some Canada-wide advocacy organizations to support are:

- Ecojustice Canada – environmental law charity that uses the law to combat the climate crisis and defend nature
- Ellen Macarthur Foundation – aims to accelerate the transition to a circular economy, including a circular food system
- Global Climate Strike – organizes protests calling for climate action
- The ENRICH project – advocates and educates about environmental racism
- Keep Transit Moving Coalition – advocates for accessible and reliable public transit
- ACORN – advocates for quality, high-density affordable housing with different chapters in cities across Canada

### *Internal Commitments and Finances*

Climate change considerations can be embedded into core strategies in order for results to be seen in practice. This could look like internal meetings and planning sessions dedicated to climate, or, depending on size, a dedicated ‘Green Team.’ The Green Team could include community members, or it could regularly consult with the public to ensure they are meeting societal needs with its environmental programming. Based on recommendations from the UN, an organization’s commitments to integrate climate-change considerations should be science-based, relevant to climate justice, and publicly shared. There should be specific, numerical targets and stepping stones assigned to goals.<sup>40</sup>

Operating costs of some SPOs will need to be re-evaluated and may require additional funding. The impacts of climate change are unique to each organization, where funding may be used internally (ex. for the building) or externally for the community (services such as misting stations or programs). With an expected increase in products, energy and insurance premiums, organizations may find themselves under financial strain to continue their daily operations. To alleviate this financial strain, organizations should expand efforts to seek external funding.

**Appendix A** of this report gives an extensive but non-exhaustive list of multiple grant sources, funding programs, and educational opportunities that organizations could utilize. As the world starts to pay more attention to climate, this will be reflected in funding opportunities in the form of grants and loans specifically related to climate change adaptation and environmental considerations that social purpose organizations, that have previously only applied for social change-related funding, could greatly benefit from.

Additionally, corporations are beginning to pay more attention to ESG (Environmental and Social Governance) initiatives. Figure 8 shows the ESG concerns that corporations are focused on. Notably, corporations want to have a better impact on local communities. This is an opportunity for social purpose organizations to collaborate or seek funding from these corporations, offering both parties shared resources and the potential for joint projects.



*Figure 7: Environmental, social, and governance strategies are changing how business is done. Organizations can take advantage of corporations looking to improve their impact on local communities. Source: World Economic Forum*

### *Climate Change Mitigation*

Climate change mitigation refers to efforts to reduce humans' impact on the environment. Social purpose organizations could focus on reducing their environmental impacts, as this will also reduce operating costs by lowering electricity costs and increasing climate resilience. To begin, organizations operating out of a building or that own multiple properties can be more self-aware of their buildings' energetic operations. Organizations can begin to invest in insulated and bird-friendly windows, electric vehicle charging stations, and energy-efficient appliances, and also utilize efficient renewable electricity as ways to support the environment, lower their own greenhouse gas emissions, and begin to save money later by taking a sustainable approach first. If organizations are unsure where to start, the LEED certification system provides a framework for healthy, efficient, carbon and cost-saving green buildings.

Costs from these energy efficiency improvements can be funded from multiple sources. **Appendix A** of this report gives an extensive but non-exhaustive list of multiple grant sources, funding programs, and educational opportunities that organizations could utilize. It also includes a link to Project Neutral. This resource helps organizations determine their carbon footprint along with a plan to begin making changes. Lowering an organization's carbon footprint provides the opportunity for practices to be adopted by staff and the community while recognizing the two-way relationship that supporting the environment also benefits an organization's client base.

Other operational practices, such as procurement, can also be examined. Organizations can purchase reusable or recyclable materials for programming, and rethink how resources are used. For example, at fundraising or community outreach events, a sticker with a QR code to the organization's website will use less paper than a traditional brochure and still relay key information. Reusable resources can also reduce costs as they are a one-time purchase, instead of re-purchasing single-use goods. Additionally, local procurement could be prioritized to reduce costs and emissions from long-distance shipping. When possible, local procurement could be from woman-owned, LGBTQIA-owned and BIPOC-owned and operated businesses, to empower marginalized communities that more deeply feel the social impacts of climate change.

Educating key stakeholders of social purpose organizations on their own carbon footprint is an effective strategy to prepare and mitigate climate impact. Education may be in the form of seminars, community gardening, involving the community in waste management practices, or educating the community on how climate change will impact the organization's own programming (i.e., explaining the increase in services during the anticipation of an extreme event).

### *Climate Change Adaptation*

Climate change adaptation (CCA) refers to an actor preparing for expected climate change-induced weather events to lessen the magnitude of impacts when events occur. Along with efforts to mitigate environmental impacts, social purpose efforts could implement climate change adaptation plans to reduce their vulnerability to climate change impacts. Best practices for implementing a CCA plan in an organization are as follows:

1. Conduct a vulnerability assessment for future climate considerations and risks to your organization and client base. This may require seeking external expertise from universities, consulting groups, other organizations' CCA plans, and the local municipality's CCA plan to understand how the local geographic area will be impacted by climate change and how the municipality is currently addressing these forecasted impacts.
2. Complete a risk analysis and a cost-benefit analysis comparing the financial costs of implementing a CCA plan to the financial costs of damages incurred if no changes are made.
3. Create a CCA plan based on the vulnerability assessment, the risk analysis, the cost-benefit analysis, and your organization's specific considerations.
4. Set time-specific goals and key performance indicators to continuously monitor the progress of the CCA plan implementation and establish a baseline for future evaluations.
5. Establish an internal committee dedicated to CCA oversight. This responsibility may fall into your organization's already-established 'Green Team.'
6. Hold internal workshops to educate all employees on the need for a CCA plan and to share best practices for incorporating climate change into every level of activities.

7. Conduct public outreach when conducting and implementing the CCA plan; effective public communication is vital for project effectiveness as it raises awareness and stimulates community discussion. Public outreach can include the creation of online resources to educate the public about climate change adaptation on both the organizational and individual level.
8. Establish partnerships with multiple levels of interdisciplinary actors; CCA can find success from collaboration due to the wide range of opportunities to access new resources and additional expertise. Partnerships can range from similar small-scale social purpose organizations to bigger agencies like conservation authorities.

As an adaptation strategy, social purpose organization strategies will need to create community support plans for cases of extreme weather. In the case of extreme weather events where transportation systems may be affected, and communities may be isolated, social purpose organizations can work with governments to deliver essential supplies and resources to these communities. During periods of extreme heat or cold where vulnerable populations may be disproportionately affected, SPOs can transform their facilities into temporary heating or cooling stations. This can also include providing food and water, phone charging stations, and other necessities.



*Emergency cooling centre in Toronto during a heatwave. (CBC News, 2021)*

Another strategy for climate change adaptation is green infrastructure. Due to the lack of green infrastructure in marginalized neighbourhoods, social purpose organizations supporting these neighbourhoods could start efforts to add more green spaces. This can improve overall community health and well-being for these communities that are disproportionately affected by

climate change. Incorporating more green infrastructure in these urban areas can also be expected to improve mental health issues associated with the worsening impacts of climate change and global warming. **Appendix A** includes a list of funding opportunities that could offset some costs of implementing green infrastructure. Some examples of green infrastructure that social purpose organizations can invest in or develop are:

- Rain gardens - planted areas intended to collect rainwater to promote stormwater infiltration and decrease runoff (Figure 9)
- Green Roofs - a layer of vegetation using engineered soil on the roofs of buildings meant to moderate temperatures and remove heat from the air
- Blue Roofs - adapting the roofs of buildings to catch and store stormwater to reduce stormwater flow in drainage systems during major rainfall events
- Permeable Paving - porous paving materials that allow for increased water infiltration which decreases runoff
- Rain Barrels - receptacles designed to collect and store water which can then be reused for landscaping or watering plants

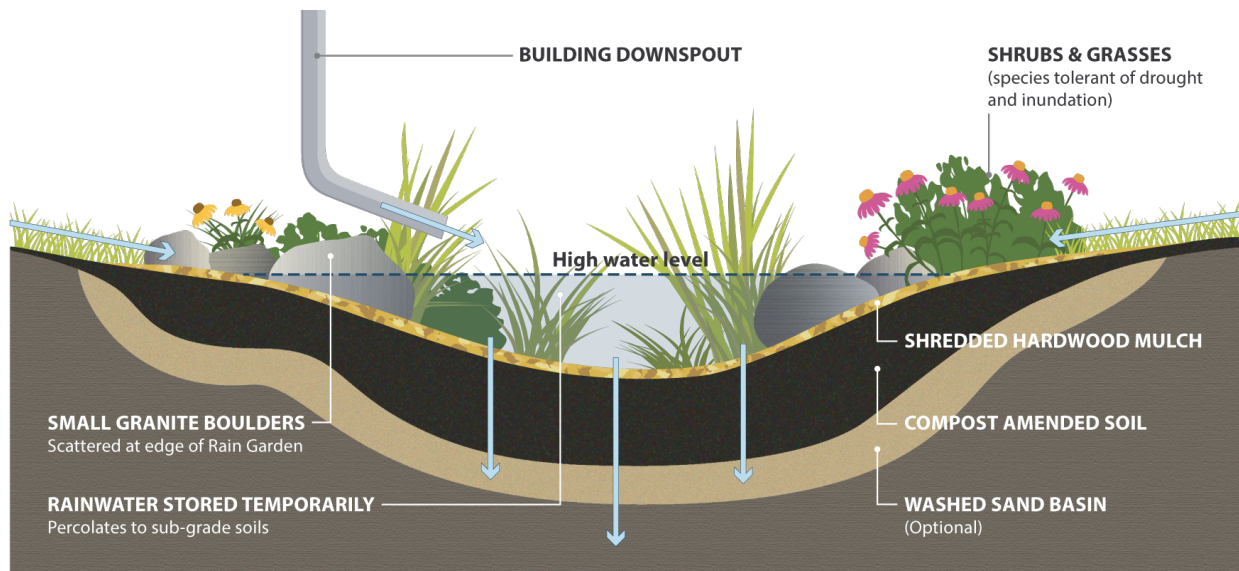


Figure 8: A guide to designing rain gardens. Source: Toronto Regional Conservation Authority

### Collaboration

Social purpose organizations could collaborate with other organizations, local businesses, and the local government to best help their respective communities. The collaboration will allow the groups to inspire, learn, and work together for a healthy and green future. Local organizations such as Pillar Nonprofit Network and chapters of Green Economy Canada have established themselves as hubs for networking to connect groups with similar visions. Specifically designed to transform the environment, Green Economy Canada aids businesses and organizations incorporate environmental factors and climate mitigation strategies into their operational models.

As outlined in the case studies, collaboration with faith-based groups and between urban-rural groups can help engage more population members in climate change initiatives and strengthen local community systems. Social purpose organizations can also explore connecting with local schools and universities to utilize academic knowledge. Collaborating with other organizations allows smaller organizations to break into a climate activist role, understand the necessary precautions, and provide financial support.

### *Circular Food Systems and Cost-Effective Food Sources*

Due to climate change, organizations providing access to food will experience increased demand for their services while these food access services become simultaneously more difficult to offer. Social purpose organizations that provide food to the community could examine the feasibility of community food gardens or partner with “food rescue” organizations like Second Harvest. These food rescue programs allow organizations to access healthy and nutritious food that would otherwise be wasted because of a cosmetic abnormality. There are multiple food rescue programs, charities, and apps across Canada. **Appendix A** includes links to these food rescue resources and a guide to seasonal produce in Ontario. Community gardens and food programs can also act as community-building opportunities.



Encouraging local and circular food systems is an act of resilience against rising food prices and unpredictable food supply chains. If creating a circular food system is outside an organization’s current capacity, SPOs could prioritize seasonal crops and meatless meals to minimize costs and encourage sustainability.

*PATCH London’s community garden. (PATCH London, 2023)*

### *Sustainable Transportation Plan*

Sustainable transportation is necessary to mitigate increasing costs associated with fuel consumption and lower the organization's overall carbon footprint. Suggestions include:

- Subsidize the cost of public transit for employees and community members to incentivize transit usage
- Provide bike parking infrastructure at brick-and-mortar sites
- Consider transitioning to Electric Vehicles for programming that requires automotive transportation, utilizing the Federal incentive for purchasing zero-emission vehicles
- Utilize the federal tax credit which allows e-bike buyers to claim a 30% credit up to \$1,500 on their federal tax return
- Facilitate community car-share programs between employees for between community members

- Encourage community members to participate in active transportation (walking and cycling)



*Active Transportation infrastructure such as bike share programs can be added in urban areas (Council on Foreign Relations, 2012).*

### *Empowering Community Members*

As identified in Section 3, BIPOC community members are in positions to be further marginalized due to climate change but are also in unique positions to create positive, sustainable impacts when in leadership positions. Social purpose organizations can provide leadership training, mentorship, coaching, and educational opportunities for these members of the community. They can be further supported by ensuring that all programming is based on equity and inclusion, allowing for diverse participants and cultures. On the internal operations side, BIPOC community members could be prioritized for leadership positions, especially if the organization has a ‘Green Team.’

Mental health is another area where social purpose organizations can help empower their client base. Organizations could create safe spaces allowing community members to speak about their emotions or perspective on climate change. This could encourage taking on more climate action and also support psychosocial healing.

## **5.2. Recommendations for Pillar Nonprofit Network**

Social purpose organizations face challenges with funding for projects, access to knowledge to embed climate change into core strategies, the ability to articulate to donors the importance of acting on climate change, and a lack of time and resources. Simultaneously, organizations can benefit from having a community network that would compile climate change resources for

their members, facilitate cooperation with other organizations, and celebrate sustainability work in the non-profit sector. As an organization that connects and supports multiple social purpose organizations in London, Pillar Nonprofit Network can be a lead actor in the implementation process of climate change adaptation strategies by developing tools to help organizations overcome their identified challenges and implement innovative ideas. This can be done by providing funding, fostering collaboration, celebrating best practices, educating organizations, helping organizations create climate plans, or distributing climate-specific resources.

For Pillar Nonprofit Network to support organizations as they adapt to climate change, the organization could first embed climate change considerations into its key strategies, plans, and vision. Many of the recommendations outlined for social purpose organizations can be applied to Pillar. Additionally, the organization can expand the services and resources that it offers to its community.

Pillar's mission is "to build an engaged, inclusive community and strengthen individuals, organizations, and enterprises invested in positive community impact." This mission statement is the foundation for all its work. If it changes the mission statement to include a climate focus, climate change considerations will guide all Pillar's work moving forward. For example, the updated mission could be "to build an engaged, inclusive, climate-resilient community and strengthen individuals, organizations and enterprises invested in positive community and environmental impact." Although Pillar Nonprofit Network focuses on social impacts, it is evident that social impacts and climate impacts are intertwined. The suggested mission statement recognizes this.

Pillar's Strategic Plan for 2021-2023 has three themes and objectives: Equity in Action, Change in Action, and Recovery in Action. Equity in Action acknowledges the shared societal complicity in anti-Black and anti-Indigenous racism and their intersecting oppressions - it aims to drive meaningful action by building relationships with community leaders and knowledge keepers. Change in Action encourages collaboration across sectors to shift inequitable structures and systems to create transformational change by supporting organizations and practices that advance climate action. Lastly, Recovery in Action aims to promote an equitable, sustainable recovery that addresses the inequalities aggravated by the COVID-19 pandemic by amplifying awareness of inequitable impacts and advocating to strengthen disproportionately affected communities. Pillar's Strategic Plans after 2023 could include a theme and objective dedicated to climate change considerations. This will ensure that climate change impacts are considered a key guiding element for planning purposes.

Multiple Pillar projects aim to enhance nonprofits' skills, knowledge, credibility, and accountability to help them grow and succeed through advocacy, consulting, strategic planning, innovation awards, and social enterprise loans. An environmental focus can be applied to each of these programs.



Pillar Nonprofit Network facilitates connections and partnerships in the volunteer and non-profit sectors. There is the opportunity to use this network to facilitate collaboration between organizations implementing climate change adaptations into their programming and plans. Along the theme of collaboration, Pillar Nonprofit Network encourages experiential learning for postsecondary students in the London and Middlesex area by creating direct opportunities for community improvement through its City Studio program. The City Studio program can be used to direct students towards social purpose organizations that are developing or implementing climate change strategies.

Pillar also performs advocacy in public policy and could expand this advocacy to include advocating for strong and inclusive climate policies in municipal and provincial governments. All advocacy-focused recommendations for social purpose organizations can also be applied to Pillar, as a way to reduce the social impacts of climate change. This advocacy could look like supporting governments to set ambitious and transparent emissions reduction targets, invest in clean energy instead of fossil fuels, and implement a just and equitable net-zero transition. As a network, Pillar can connect social purpose organizations with advocacy-based organizations to foster collaboration.

Pillar Nonprofit Network offers many consulting and organizational-strengthening services as part of Impact Consulting and the Pillar Community Impact Program. These services include leadership training and coaching, consulting for equitable workplaces, strategic business planning, strong storytelling and governance. Consulting services can expand to offer social purpose organizations strategies and plans to incorporate climate change considerations into organizational operations. This type of organizational education and support in relation to climate action and adaptation is also offered by SDG Cities, a collaborative project by Pillar Nonprofit Network and 10C Shared Space in Guelph that aims to localize community support for the UN Sustainable Development Goals. Pillar and 10C Shared Space can focus on expanding the reach of SDG Cities to achieve maximum socio-environmental impacts.

Finally, Pillar has held its Community Innovation Awards for 15 years, awarding innovation, leadership, impact, collaboration, and the community's choice. These awards could include a new category to award community members or organizations adapting to climate change using recommended strategies.

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## Glossary

**Anthropogenic:** resulting from the influence of human beings on nature.

**BIPOC:** Black, Indigenous, people of colour.

**Carbon Tax:** a tax imposed on fossil fuels to reduce greenhouse gas emissions.

**Climate Change:** long-term shifts in temperature and weather patterns, due to human activity.

**Climate Refugee:** a person who has been forced to leave their home due to the effects of climate change.

**Climate Resilience:** the capacity of social, economic and ecosystems to cope with a hazardous event or trend or disturbance.

**Eco-anxiety:** extreme worry about current and future harm to the environment.

**Energy Efficient:** products or processes that use low amounts of energy to provide power.

**Eutrophication:** the overabundance of nutrients such as phosphorus and nitrogen in the water, leading to algal development.

**Extreme Weather Events:** the occurrence of rare weather events such as droughts or floods.

**Food Insecurity:** a household's inadequate access to food, often due to financial constraints.

**Global Food System:** the international network of food production, processing, and distribution.

**Green Infrastructure:** strategically 'constructed' natural or semi-natural areas, often in urban areas, designed to deliver ecosystem services.

**Heat Dome:** the trapping of hot ocean air in the atmosphere leading to extreme heat.

**Herbicides:** chemical substances that are toxic to plants.

**Horticulture:** branch of agriculture that focuses on plant cultivation.

**Intergovernmental Panel on Climate Change:** an intergovernmental body of the United Nations charged with advancing scientific knowledge about anthropogenic climate change.

**Invasive Species:** An organism that is not native to a particular area and causes significant ecological or economic harm.

**Nature-Based Solutions:** actions or practices to protect and restore ecosystems sustainably using natural features.

**Particulate Matter:** small atmospheric solid particles and liquid droplets emitted from various sources that can pose a threat to human health at high concentrations.

**Persistent Organic Pollutants:** toxic chemicals that are resistant to degradation; toxic to both humans and the natural environment.

**Pesticides:** chemicals used to destroy agriculturally harmful organisms.

**Psychosocial Well-being:** quality of life that considers both emotional and social factors.

**Socio-economic Status:** an individual or group's standing in society based on education, income, and occupation.

**Solastalgia:** the nostalgic distress or anxiety of 'homesickness' caused by climate change.

**Volatile Organic Compounds:** Volatile organic compounds are compounds that have a high vapour pressure and low water solubility. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, pharmaceuticals, and refrigerants.

## Appendix A: List of Funds, Grants, Educational Resources, and Food Rescue Resources

A non-exhaustive list of grants, funding, and educational sources for organizations:

- A guide to LEED certifications: <https://www.cagbc.org/our-work/certification/leed/>
- Many municipalities, including the **City of London**, offer **Community Grants** for organizations making socio-environmental impacts: <https://london.ca/living-london/community-services/community-funding/london-community-grants-program>
- **The London Environmental Network** offers a comprehensive and regularly updated list of environment-related grants on their website: [https://www.londonenvironment.net/all\\_about\\_the\\_money](https://www.londonenvironment.net/all_about_the_money)
- **Green Economy Canada** offers a climate action boot camp and an EV charger incentive program. Funding may be available from local Green Economy chapters across Canada: <https://greeneconomy.ca/>
- **Environment Funders Canada** provides grants to registered charities and some non-profit organizations that target environmental issues: <https://environmentfunders.ca/>
- **Save on Energy's** Energy Affordability program offers energy-saving upgrades: <https://saveonenergy.ca/en/For-Your-Home/Energy-Affordability-Program>
- **The City of London's Basement Flooding Grant Program** provides financial assistance for property owners to install flood protective measures: <https://london.ca/living-london/water-environment/flooding>
- **London Environmental Network's Greener Homes London program** provides property owners with tools and resources to reduce their home's environmental impact: <https://www.londonenvironment.net/greenerhomeslondon>
- **London Hydro's Net Metering program** allows homes and businesses to generate their own electricity using solar power: <https://www.londonhydro.com/accounts-services/generation/net-metering>
- **MyHEAT solar** is an online tool that helps homes and businesses identify potential benefits of installing solar panels on a case-by-case basis: <https://solar.myheat.ca/london/>
- **Project Neutral** is an online tool that property owners can use to measure their carbon footprint and created a personalized action plan: <https://app.projectneutral.org>
- **The Federal Government's Climate Action and Awareness Fund** supports Canadian projects that reduce greenhouse gas emissions and educate communities about climate issues: <https://www.canada.ca/en/services/environment/weather/climatechange/funding-programs/climate-action-awareness-fund.html>
- **Environment and Climate Change Canada** offers multiple environmental funding programs that open and close on a rotating basis. Areas of funding can range from an Environmental Damages fund to Community Interaction programs. Organizations should refer to their website for an up-to-date list of available funds: <https://www.canada.ca/en/environment-climate-change/services/environmental-funding.html>

- **Natural Resources Canada** has multiple funding programs for green homes and buildings, available for homes or commercial, institutional and community buildings. These applications open and close on a rotating basis so organizations should refer to their website for an up-to-date list of available funds: <https://natural-resources.canada.ca/energy-efficiency/green-buildings/programs-and-funding-for-green-homes-and-buildings/24574>
- **The Natural Infrastructure Fund** from Infrastructure Canada offers funds to support natural infrastructure that preserves, restores, or enhances ecosystem features and materials to deliver beneficial community services and infrastructure outcomes: <https://www.infrastructure.gc.ca/nif-fin/index-eng.html>
- **The Disaster Mitigation and Adaptation Fund** from Infrastructure Canada funds projects that increase the resilience of communities that are impacted by natural disasters triggered by climate change: <https://www.infrastructure.gc.ca/dmaf-faac/index-eng.html>
- **The Green and Inclusive Community Buildings Fund** from Infrastructure Canada aims to build more community buildings and improve existing ones – in particular in areas with populations experiencing higher needs – while also making the buildings more energy efficient and more resilient to climate change: <https://www.infrastructure.gc.ca/gicb-bcvi/index-eng.html>
- **Federal Incentives for Electric Vehicle adoption:** <https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/incentives-purchasing-zero-emission-vehicles>
- **The McConnell Foundation** provides grants to support activities that are aligned with at least one of three focus areas: Climate, Reconciliation and Communities: <https://mcconnellfoundation.ca/>
- **TD Friends of the Environment Foundation Grants** support a wide range of environmental initiatives, with a primary focus on environmental education and green space programs: <https://www.td.com/ca/en/about-td/ready-commitment/funding/fef-grant>
- **VERGE Capital** provides affordable loans with flexible interest terms to social enterprises in Southwestern Ontario. They also offer loans up to \$500,000 for larger-scale community infrastructure like green energy projects, nature conservation, affordable housing developments, community hubs, or arts and cultural spaces: <https://vergecapital.ca/apply>
- **EcoCanada**, in partnership with the Government of Canada, offers an employee wage funding program for businesses of all sizes with environment-related positions
- **Patagonia** offers funding to environmental organizations that target root causes of the environmental and climate change crisis. In particular, Patagonia aims to fund organizations that support affected marginalized communities: <https://www.patagonia.ca/how-we-fund/>
- **Farm Fresh Ontario** provides a guide to seasonal produce: <https://farmfreshontario.com/whats-in-season/>

- **HP's guide to sustainable procurement:** <https://circularprocurement.ca/wp-content/uploads/2021/02/HP-sustainable-IT-purchasing-guide.pdf>

This is a non-exhaustive list of grants, funding, and educational sources that community members can take advantage of. Organizations can share these resources with clients:

- **The Clean Home Heating Initiative** - an offer of up to \$4500 from Enbridge and the province of Ontario to install efficient hybrid home heating: <https://www.enbridgegas.com/sustainability/clean-heating/hybrid-heating>
- **The Canada Greener Homes program** - offers grants of up to \$5000 or interest-free loans of up to \$40, 000 to undertake major energy-efficient retrofits: <https://natural-resources.canada.ca/energy-efficiency/homes/canada-greener-homes-grant/start-your-energy-efficient-retrofits/plan-document-and-complete-your-home-retrofits/eligible-grants-for-my-home-retrofit/23504>
- **Enbridge's Home Efficiency Rebate and Home Winterization programs** offer up to \$5000 for a range of home energy efficiency measures: <https://www.enbridgegas.com/residential/rebates-energy-conservation/home-efficiency-rebate>

Food rescue programs and charities:

- [Eight Toronto-specific initiatives](#)
- [Second Harvest](#)
- [Feed Ontario](#)
- [Zero Food Waste Foundation](#)
- [Leftovers Foundation](#)
- [Food Stash Foundation](#) in British Columbia
- [Food Rescue Hero Network](#)

Food rescue apps:

- [Too Good to Go](#)
- [Olio](#)
- [FlashFood](#)
- [Sauvegarde](#) in Montreal, Quebec



## Appendix B: Image Sources

Page 14: <https://globalnews.ca/news/4666281/residents-of-fredericton-tent-city/>

Page 15: <https://www.epa.gov/green-infrastructure/what-green-infrastructure>

Page 28: <https://archway.ca/stories/the-flood-that-was/>

Page 30: <https://theseedguelph.ca/what-we-do/markets/>

Page 32: [https://www.faithcommongood.org/extreme\\_weather\\_resilience](https://www.faithcommongood.org/extreme_weather_resilience)

Page 33: <https://greenwaychaplin.com/engage-now/>

Page 36: [https://alus.ca/alus\\_news\\_and\\_events/the-alus-before-and-after-photo-contest-showcases-nature-based-solutions/](https://alus.ca/alus_news_and_events/the-alus-before-and-after-photo-contest-showcases-nature-based-solutions/)

Page 41: <https://www.cbc.ca/news/canada/toronto/toronto-heat-warning-cooling-centres-1.6054795>

Page 44: <https://www.patchlondon.ca/>

Page 45: <https://www.cfr.org/blog/policy-initiative-spotlight-bounty-bikeshares>

## Appendix C: Educational Primer

## Appendix D: Case Study Primers

On the following pages.

## WHAT IS CLIMATE CHANGE?

Climate change refers to the long-term shifts in temperature and weather patterns that cause intense global environmental changes including droughts, flooding, extreme weather, rising temperatures, wildfires, and declining biodiversity. These natural changes have human and social consequences.

## HOW DOES CLIMATE CHANGE IMPACT SOCIAL ISSUES IN URBAN AREAS?

### Poverty and Marginalized Identities

Marginalized, BIPOC and low-income communities are currently suffering disproportionately from the effects of climate change, and these inequities will continue to grow. The cost of living is expected to increase as resource availability declines and global supply chains are disrupted. Low-income neighbourhoods are less likely to be climate resilient because they are often geographically situated on floodplains and areas with less green infrastructure. Canadians experiencing homelessness will face challenges due to their exposure to extreme weather and increasingly unaffordable resources.

### Environmental Pollution

Climate change will worsen exposure to environmental pollution as climate disruptions shift the movement of contaminants in the natural environment. Unsheltered and vulnerable communities are more likely to be exposed to these contaminants, with subsequent adverse health effects. Social purpose organizations meeting the needs of these populations should anticipate an increase in health-related issues, and community health organizations should anticipate an increase in clients.

### Mental Health

The escalating impacts of climate change pose a threat to the psychosocial well-being of individuals. Fear of environmental cataclysm can cause adverse mental distress, and extreme weather events and disasters lead to higher incidences of psychological trauma, anxiety, depression, PTSD, and increased suicide rates. Social purpose organizations responding to extreme weather events should consider the psychosocial impacts these events may have on individuals.

### Access to Food

Food access in Canada is expected to decline due to climate change. Globally, extreme weather and worsening growing conditions will affect the availability and affordability of food, particularly in urban areas. Social purpose organizations addressing food insecurity should expect increased demand for their services and an associated increase in operating costs.

### Climate Migrants

Canada is expected to experience a rise in migration to urban areas by people who have left their countries of origin due to sudden or gradual climate-related disasters. Upon arrival to Canada, immigrants may experience higher rates of poverty. Accordingly, social purpose organizations meeting the needs of new immigrants should anticipate an increase in the size and diversity of their client base.

## LINK TO THE SUSTAINABLE DEVELOPMENT GOALS

The United Nations Sustainable Development Goals are a framework through which to understand the intersectionality of climate change and social issues. At their core, the SDGs recognize that planetary and human well-being are inextricably linked. Multiple Sustainable Development Goals are addressed by recognizing the intersection between climate change and social issues. Accomplishing Goals 1 (No poverty), 2 (Zero hunger), 3 (Good health and well-being), 5 (Gender equality), 6 (Clean water and sanitation), and 10 (Reduce inequalities) will require actions toward Goals 11 (Sustainable cities and communities) and 13 (Climate action).

## RECOMMENDATIONS FOR SOCIAL PURPOSE ORGANIZATIONS

- 1** Embed climate change considerations into core strategies by analyzing how practices and clients will be affected, creating a green team, and publicly sharing plans and targets
- 2** Predict an increase in operating costs and seek additional capital sources from environmental funding programs or corporations looking to meet ESG targets
- 3** Develop a climate change mitigation framework to lower own carbon footprint, engage in green procurement of goods and services, and educate the community members
- 4** Implement climate change adaptation strategies, including a CCA plan, green infrastructure, and extreme weather plans
- 5** Collaborate with local interdisciplinary actors (such as environmental networks or schools) to mutually benefit from the community's funds, resources, and knowledge
- 6** Investigate utilizing food rescue programs and community food gardens, and prioritize seasonal crops and meatless meals
- 7** Subsidize public transit, provide bike and electric vehicle infrastructure, facilitate ride-share programs, and promote active transportation
- 8** Prioritize leadership and education for BIPOC community members while increasing community mental health services
- 9** Advocate for environmental policies that bring social benefits to the client base of the organization



## ORGANIZATIONAL BACKGROUND

The SEED is an organization dedicated to providing healthy food to people of all income levels in the City of Guelph, recognizing that over 20,000 people in Guelph-Wellington do not have access to healthy food. Their objective is to build a circular food system “fueled by the community and filled with dignity.” The SEED aims to drive this system change through social enterprise (particularly the employment of young people), community involvement, collaboration with other community organizations, building good food into the health care system and advocating for improved government policy. Recognizing the community food security needs and the climate and environmental impacts of wasted food, The SEED created several initiatives addressing this intersection.

## INTERSECTIONAL PROGRAMMING

In partnership with the University of Guelph’s entrepreneurship program, The SEED created the Upcycle Kitchen. This initiative aims to collaborate with local farmers, suppliers, and businesses to minimize food waste and create delicious and nutritious products and meals after discovering that a significant amount of food from distributors was being discarded for imperfect appearance despite its nutritional integrity and quality. The SEED also employs out-of-work youth through the Upcycle Kitchen, providing valuable training and experience. The first products created in the Upcycle kitchen were ketchup made from deformed tomatoes and bread from spent grain provided by a local brewery. To increase access for those in food need, the products produced by the Upcycle kitchen are sold at pay-what-you-can prices alongside the other food on their website. Ultimately, The SEED hopes to see Upcycle Kitchen products on retail shelves and delivered to student nutrition programs. As the Upcycle Kitchen relies on donated food, there is unpredictability in its supply. To manage these inconsistencies, The SEED freezes food until all ingredients arrive or provides excess produce to The SEED’s food distribution programs.

The SEED also has a Community Food Warehouse that stores and distributes fresh produce. Most produced is received from Second Harvest, an organization that collects food deemed “unfit” for grocery stores. As a “food rescuer,” Second Harvest collects a surplus of edible and usable food from businesses and redistributes this food across their network of organizations and communities, including The SEED. The Community Food Warehouse then redistributes to local food banks and school programs in the Guelph-Wellington area. Through the Warehouse, food that would normally end up in a landfill is diverted into the homes of Guelph-Wellington.

The SEED is involved in advocacy for food systems change and is the founder of Our Food Future. This initiative promotes and advocates for circularity in the food sector for the sake of the planet and people. Collaborating across organizations in the Guelph-Wellington area, Our Food Future aims to support the first circular food system in the area.

## ORGANIZATIONAL BACKGROUND

Faith & the Common Good is a Canada-wide interfaith network, that encourages spiritual and faith communities to work towards creating greener, more resilient, and sustainable neighbourhoods. Through effective education and collective action, these goals can be achieved. The organization's core goals are to build capacity via diversity, harness & motivate sustainability, and strengthen communities. Faith and the Common Good was founded by United Church ministers who educated United Church groups across the country on environmental issues. Through this, the founders became aware of the high demand from other faith groups who were eager to address and counteract the effects of climate change.

## INTERSECTIONAL PROGRAMMING

Working with municipalities, Indigenous communities, and other faith-based or environmental partners, Faith & the Common Good has targeted a variety of environmental issues, including clean energy, active transportation, and clean water. Through Faith & the Common Good's longest-running program, Greening Sacred Spaces, faith groups are taught how to reduce their carbon and ecological footprints through webinars, workshops, certifications, and audits. One of the organization's primary goals is to support the reduction of emissions and waste produced by faith groups within their network. Practices include changes to lighting, insulation, and water usage to lower the community's energy consumption and also to save money from emissions and energy utilization.

One of Faith & the Common Good's programming goals is to provide adequate and equitable resources, such as workshops and guides for clean energy in faith buildings to vulnerable populations within the community they work with. In the city of Hamilton, one of the faith groups in Faith & the Common Good's networks conducted asset mapping to catalogue the resources available to them to combat the local effects of climate change through an initiative called the Lighthouse Project. They also aim to identify which communities will require more resources given the disproportionate effects climate change can have on groups, including visible minorities, individuals below the poverty line, and individuals living with physical disabilities.

Faith & the Common Good collaborated with the City of Brampton's municipal staff to train members of faith communities to become first responders. The organization has also been encouraging communities within its network to act as cooling or warming centers, offering food and phone charging stations during these emergency situations, and educating their community members about climate change and how they can prepare for climate-related emergencies. The organization also has volunteers that help install high-end equipment such as generators and food preparation facilities when required by the communities they operate in.

## ORGANIZATIONAL BACKGROUND

Archway Community Services is a multi-service nonprofit operating primarily in Abbotsford, Chilliwack, and Fraser Valley, British Columbia and continues to expand province-wide. Archway provides over 100 programs to the public, including programming for children, youth and adults, addiction counselling services, parenting classes, and services for the unhoused. The organization promotes social justice, well-being, and positive leadership within its communities of operation.

## INTERSECTIONAL PROGRAMMING

In the wake of extreme weather events in British Columbia since 2021, Archway Community Services has been adapting its services to provide emergency relief. During the 2021 heat dome in British Columbia, many residents had no cool air or resources to accommodate the harsh conditions. Archway recognized that their client base, specifically elders and youth, were vulnerable to the heat but relied on other organizations to help, such as Greenpeace or Red Cross. In the fall of 2021, British Columbia was impacted by a flood and the food bank of Archway Community Services was called in to help as it was the largest food bank in the area. Archway recognized the need to expand its services beyond providing food to include the evacuation of vulnerable individuals. Archway volunteers assisted people experiencing homelessness, farm workers, farms, and other people at risk to safely leave the area.

While helping the community during these two catastrophic weather events, Archway recognized the need to incorporate services to address how climate disasters and climate change will impact their clients. Archway acknowledged the need for clearly established roles so community members would know which organizations to turn to for assistance during times of environmental distress. They began preparing for the future to ensure their community is safe. Archway is working with the City of Abbotsford to create a retroactive survey of their clients to understand how they have been impacted by weather disasters and what resources clients would require before, during, and after these events. Archway also began researching the systemized ways for a community to deal with future climate disasters. Archway strives to be more intentional in its support during climate disasters and has been focusing on extreme heat and cold events. During heat events, they have frequent wellness checks for their seniors' program (including providing extra water, sunscreen, and air conditioning units) and they have introduced building upgrades such as misting stations. During extreme heat and cold weather events, Archway promotes its locations as refuge stations for individuals that are unhoused and those with limited resources. Archway Community Services will be prepared for climate events as they continue to implement climate change considerations into their services and programs. They continue to calculate how its services and volunteers can best support the community every day and during crises.

As an organization, Archway Community Services continues to promote environmentally friendly practices to reduce its own carbon footprint. The locations of their facilities are not well supported by public transit systems, therefore, the majority of their staff and patrons must drive. They have proposed a plan to create an electric vehicle charging station on their premises to allow users to charge their cars at work. Additionally, Archway is upgrading to energy-efficient windows to further manage their buildings' energy consumption.

Archway Community Services recognized the social impacts of climate change and immediately took action to incorporate climate change into its plans and strategies. Specifically, their programming addresses the social impacts of extreme weather. Additionally, the organization is reducing their own environmental impact, which will reduce operational costs in the long run, which is important as climate change impacts the financial capacities of social purpose organizations.



Emergency Reception Centre set up by the City of Abbotsford that Archway volunteered at during major flooding events (Archway Community Services, 2021).

## ORGANIZATIONAL BACKGROUND

The Greenway-Chaplin Community Centre is a social service organization based in Cambridge, Ontario, providing an array of services and programs to their local community. Programs include teen drop-ins, ESL clubs, women's support groups, low-cost childcare, support for seniors, support for low-income parents, vaccine clinics, nurse clinics, and food markets. Through their programming, they cater to the needs of their community which may be affected by gender inequality, ageism, hunger, poverty, healthcare barriers, and experience language difficulties.

## INTERSECTIONAL PROGRAMMING

Although Greenway is in its preliminary phase of integrating climate change impacts into its operations, they continue to add more environmental initiatives into the programs they offer. Initiatives include recycling and composting onsite and purchasing more reusable materials for their events. Additionally, their youth programs have taken an environmental approach with events such as community clean-ups, micro forest tree-planting, and conversations about composting and resource consumption. A community garden program called "Greenway Can Grow" was also established and runs in tandem with edible home gardening webinars.

However, internal changes have been kept to a minimum due to a shortage of staff and resources. The main challenge for Greenway-Chaplin is in promoting and articulating their potential sustainability initiatives to funders, donors, and community members. In the future, Greenway-Chaplin aims to create and distribute climate education resources to community members and to celebrate sustainability work across the non-profit sector.

The Greenway-Chaplin Community Centre is taking the critical first step in implementing climate change into its programming by recognizing the impact, creating environmental-related programming, and collaborating with other environmental groups. By taking the steps to include climate education and mitigation strategies in their programming, Greenway-Chaplin can begin to protect their client base, most of whom are vulnerable to the impacts climate change can have on their lifestyles.



Greenway-Chaplin Community Centre's 2021 Backyard Garden (Greenway Chaplin, 2021)



## ORGANIZATIONAL BACKGROUND

ALUS is a nationwide farmer-led charitable organization that engages farmers with the ecosystem services their land provides and encourages implementing nature-based solutions on agricultural land. The organization is self-described as a social purpose organization with environmental co-benefits, meaning there are positive environmental outcomes from their actions as an organization. Since 2000, ALUS has partnered with over 450 Canadian provincial and federal organizations. Within their catchment areas, ALUS fosters relationships with the local Indigenous communities, local corporations, and social purpose organizations that impact the surrounding communities. Intersectionality guides ALUS's practices and programs. Understanding their community's social structure is critical to supporting farmers, providing knowledge, and creating thriving agricultural lands and ecosystems.

## INTERSECTIONAL PROGRAMMING

ALUS collaborates with farmers that have identified land that is marginal or uneconomical and helps to enhance the landscape. Improving the quality of the land can increase agricultural yield or assists the farmer in naturalizing the land, meaning it re-establishes the land's native species. The newly transformed land produces economic and intrinsic value for the farmer in the form of various ecosystem services and food production. In addition to the monetary value of their land, farmers can begin to learn more about the health of their land, ways to implement climate mitigation strategies on their property and participate in local environmental conservation efforts. Becoming more involved in environmental conservation groups is especially important to rural Canadian farmers, who often feel disengaged by government-led and urban-centric environmental activism.

ALUS has established chapters all over Canada and Ontario, including counties in southwestern Ontario like Middlesex, Norfolk and Elgin. Although the chapters are geographically connected, they are not homogenous, and thus the services are not linear across the three counties. The communities present in each county prioritize and target their specific needs during the planning and decision-making process. Programs are unique to the social conditions, crops/livestock or ecosystem service for each farmer. In Middlesex County, initiatives are focused on the Thames River watershed to keep the river clean and topsoil intact, and on livestock due to the small crop diversity. Elgin County has a diverse mix of crops, and its programming focuses on restoring wetlands to slow water-influenced erosion and planting tallgrass to hold soil in place. Norfolk County has the most diverse crop range out of the three counties, most notably their tallgrass prairies and sandplain grasslands. The county mainly focuses on the restoration of tallgrass prairie and sandplain ecotypes. Tallgrass serves as a great ecological asset, a habitat for pollinators, and food for insects. Pollination will increase the health and crop yield of landscapes. This not only benefits the farmer, as it can increase the services they can provide but will also benefit the environment by providing a safe environment for pollinators and a flourishing ecosystem.

ALUS also aims to bridge the gap between urban and rural communities. For example, in an Albertan county, the residents wanted a more livable community with more green space. ALUS worked with farmers to turn non-productive areas of their land into functioning green spaces. Not only does creating more green space benefit the community's well-being, but it aids biodiversity, air quality, flood protection, and water filtration. It also aids the economy: water filtering plants upstream of a municipal water treatment plant will reduce its operating costs. Involving farmers in green space projects helps farmers recognize their relevance and impact on social and environmental issues. ALUS asks farmers to reconsider and enhance their farm's purpose and value.

ALUS has identified farmers and their associated farmland to be vulnerable to extreme weather events as a result of climate change. Specifically, rainfall intensity and frequency have increased in the last decade, along with unpredictable weather forecasts, posing a challenge to farmers. During extreme rainfall episodes, the soil becomes overly saturated and rain runoff will begin to wash off the topsoil of the crops, influencing crop yield. As a result, the long-term sustainability of the farm becomes impacted affecting crop availability and the farmer's livelihood. Moreover, upon entering water bodies, the nutrient-rich runoff will cause eutrophication, disrupting aquatic ecosystems, drinking water systems, and, thereby, human health. ALUS has worked to find a nature-based solution to manage and slow down runoff by creating natural buffers and wetlands. By slowing the water runoff, buffers and wetlands allow for more water absorption at a slower rate and offer a natural filtration system, removing excess nutrients from the runoff before reaching the water body.



Before (left) and after (right) photos of a project in Assiniboine West, Manitoba in planting cattails to filter water pollutants to improve water quality and remove impurities from the water (ALUS, 2022)