Climate Change Adaptation Strategy for Nova Scotia's Horticulture Sector

Climate Adaptation Leadership Program
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EXECUTIVE SUMMARY

Nova Scotia's temperate climate and fertile soils are optimal for the production of horticultural crops. Producing over 40 different varieties of food crops, Nova Scotia's horticulture sector plays a key role in making available essential and nutritious fruits and vegetables to Nova Scotians. The sector is an important part of the agricultural landscape, contributing to the province's economic and social well-being. Horticulture farm families and communities including growers, processors, marketers, and retailers make up essential parts of the sector, and their livelihoods are largely dependent on a functioning and productive sector.

Climate change is happening and changing the operating conditions of the horticulture sector, with impacts on sectoral viability and productivity. Some of the horticulture crops require strategic timing for planting and harvesting due to the short length of the growing season. With weather extremes and the likelihood of increased precipitation and temperature, the challenges associated with a shorter growing season will likely to be exacerbated by climate change. To support the horticulture sector's ability to adapt and thrive in a changing climate, a Scan Team made up of representatives from across the sector developed this climate change adaptation strategy to provide a collective vision for the sector and to identify priorities for action. The strategy is centred on ambitious climate adaptation outcomes, which, together, are intended to position the sector for improving its preparedness for immediate and long-term impacts of climate change.

This strategy takes an all-hazard approach by focussing on enhancing the adaptability of essential things and processes[1] in the horticulture sector. Critical components - ranging from soil quality, water quality and availability, infrastructure, production inputs, worker safety to pest and disease management, processing, marketing, consumer response - will likely be impacted by climate change – both directly and indirectly. Improving the ability of the sector to proactively apply its knowledge of climate risks and opportunities in transitioning to new adaptive farm and marketing practices will be important in changing circumstances. This strategy emphasizes the importance of strengthening collaborative processes and partnerships within the sector and with other relevant stakeholders, to better respond to the uncertainties and complexities of climate change.

Climate change information and knowledge is central to adaptation. Immediate priority should be given to consolidating and strengthening partnerships that facilitate the accessibility to and application of climate knowledge in addressing emerging needs of the sector. Strengthening collaborative processes is foundational to supporting the transfer and application of knowledge, proactively developing policies with government partners, and putting in place programs to support recovery from climate related stresses in order to transition towards a more sustainable and climate-ready horticulture sector.

Cross-sectoral efforts are crucial to effective adaptation and as such, this strategy provides strategic direction for key partners to play in its implementation. Key partners include federal and provincial agencies in charge of developing and administering relevant agricultural policies and regulations and providing resources, funding, and training support; stakeholders within the horticulture sector; agriculture extension specialists; research institutions; and Horticulture Nova Scotia. Achieving the adaptation outcomes will require the collective effort of all stakeholders - pragmatically working together, monitoring progress, and sustaining action.

As next steps, key partners should be engaged to build collective ownership of the strategy and enhance understanding of what will be required to achieve the adaptation outcomes. It is important that Nova Scotia's horticulture sector is committed to actively supporting strategy implementation. Following this, implementation

[1] In the context of this strategy, things and processes refer to critical *things* (i.e., inputs and enabling environments) and *processes* essential for the sector to achieve its desired outcomes

plan(s) should be developed detailing activities, actions, and projects that contribute to achieving the adaptation outcomes laid out in this strategy. It is anticipated that implementation and governance teams will be established to lead these next steps. The strategy will serve as a guide for the implementation team and a framework to measure progress made towards achieving the adaptation outcomes.

INTRODUCTION

Nova Scotia's horticulture sector[2] is an important part of Nova Scotia's agricultural landscape. The sector produces an array of fruits and vegetables that is enjoyed throughout the province and contributes significantly to Nova Scotia's export market. A thriving horticulture sector is important to Nova Scotia's economic and social well-being. Climate change and its effects present threats and opportunities to essential components of the horticulture system including crop production, processing, worker safety, transportation, marketing, consumer demand, and sales.

In Nova Scotia, temperatures are continuing to rise, precipitation patterns are changing, sea levels are rising, and storms, such as Hurricane Fiona, are getting more frequent and intense. These changes are exacerbating existing risks like drought and floods and introducing threats like new pests and disease. In the short-term climate change may present some opportunities for the horticultural sector through extended growing seasons and improved viability of warmer climate crops; risks from climate impacts could significantly impact the sector's ability to achieve its outcomes. (Eyzaguirre et al., 2022)

> The strategy is centred on ambitious climate adaptation outcomes, which, together, are intended to position the horticulture sector for improving its preparedness for immediate and long-term impacts of climate change.

The horticulture sector needs to act proactively and quickly to address vulnerabilities to climate change and take advantage of any opportunities that it may present. To do this, Nova Scotia's horticulture sector partnered with Nova Scotia's Department of Environment and Climate Change (ECC) to complete the Climate Adaptation[3] Leadership Program (CALP) beginning in the fall of 2021. Through this partnership the horticulture sector developed a plan to guide sector partners across the value chain to anticipate and strategically respond to changing operating conditions brought about by climate change. This sector-wide, horticulture climate change adaptation strategy is the result of that work.

Two dedicated teams contributed to the development of this strategy: a Scan Team and a Governance Team. The Scan Team, made up of representatives from across the sector, participated in a series of workshops and activities contributing their expert knowledge about the sector and the threats climate change poses. The Governance Team, made up of sector representatives and senior leaders from the Nova Scotia government, provided guidance throughout the strategy development process and will be instrumental in ensuring its effective implementation. The strategy development process included: conceptual modelling of the horticulture system; the design and implementation of a sector wide climate change adaptation survey; analysis of the survey data, and development of strategic outcomes (see Appendix 1 for details on CALP's scope and approach).

This strategy is designed to help guide the horticulture sector to effectively adapt and thrive in the face of climate change by setting ambitious yet realistic outcomes, which, when achieved, will mean the sector is proactively preparing for and adapting to the changing climate. This strategy also highlights key partners that are needed to play a central role in its implementation as well as potential activities that could be considered steppingstones for enhancing the sector's adaptability.

[2] The entire horticulture system in Nova Scotia including growers, producers, processors, distributors, input suppliers, associations, public sector organizations, researchers, transporters, marketers, retailers, and consumers.

[3] In human systems, adaptation is the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects (IPCC WGII Sixth Assessment Report Annex).

Strategy Highlights

This strategy was developed using an outcome-oriented approach. An outcome-oriented approach is particularly well suited to climate change adaptation planning because it offers strong strategic direction by clearly describing the future end-state that the industry is trying to achieve while providing flexibility in the steps or activities taken to achieve those outcomes. This flexibility is critical because while the future end-state is not expected to change there are many uncertainties about how climate change will play out and impact the industry: which climate risks will be encountered and when will they be experienced? Which part of the industry will be impacted when and to what degree? How will different groups along the value chain respond? What are the cascading or cumulative impacts of those responses? Due to the uncertainty of climate impacts, there are likely numerous possible solutions. As many solutions are available, there may be high uncertainty about which solution will work the best, both in the short- and long-term. Solutions that may be effective initially may need to be modified or replaced with other solutions over time. To manage this uncertainty, this adaptation strategy for Nova Scotia's Horticulture sector is built around broad and ambitious outcomes with flexibility on adaptation.

Importance of Adaptation for the Horticulture Sector

Analysis of the climate change survey data highlighted vulnerabilities and climate change impacts that sector stakeholders were most concerned about (key data findings from the climate change survey can be found in Appendix 2). Extreme changes in temperature and precipitation are expected to impact the most vulnerable components in several ways. Periods of intensive and extensive rainfall may cause flooding as well as field washout where large quantities of soil and planted crops may be lost. Temperature variability and extremes will likely alter soil conditions, impacting productivity levels and grade of crops. Periods of intensive heat and/or increased temperatures can cause stress, damage and/or death to crops. It can also expediate the cumulation of growing degree days thus potentially altering the rate of ripening. Transportation, handling, and storage of horticultural crops during period of increased temperatures, will likely impact the grade and quality of crops e.g., during handling and storage, lettuce will wilt faster under warmer temperatures compared to colder temperatures. After harvesting, the grade of the horticulture crop can determine whether it is sold as fresh produce, further processed into canned/frozen products and viability for long-term storage.

The horticulture sector is an interconnected and complex system that need to function reliably in order for it to thrive and produce high quality products. Results of the sector-wide climate adaptation survey informing this strategy indicated that sector stakeholders believed uncertainty about future climate posed the most significant threat to essential components. Decisions about when and what to plant and when and how to prepare fields, the type and quantity of seeds/fertilisers needed and when to apply them, the most effective crop management practices, and when to harvest, are based on some level of assurance about what can be expected in terms of temperature and precipitation during a normal growing season. Uncertainty about changing operating conditions not only impacts forecasting and planning but may also impact essential primary production components including soil quality and management, input availability, water quality and quantity, increasing pest and disease pressures, and pressures placed on permanent and semi-permanent structures. These impacts can cascade through the value chain impacting processing, storage, and transportation, altering the viability and quality of horticultural crops, with implications for marketing and consumer response.

These changes can also create unfavourable working conditions with implications for worker's health and safety, especially during periods of intensive heat. A combination of a warmer and wetter climate may create suitable conditions for new pests and diseases and increased populations of existing ones. Increased frequency and intensity of major storms like Hurricane Fiona also pose a threat to both crop and infrastructure; greenhouses, temporary season extension structures, and semi-permanent structures are vulnerable to strong winds and heavy precipitation.

Water quality and availability was another essential component also identified through the survey as highly vulnerable to climate change. Availability of high-quality water is essential not only for growing and irrigating crops

but also for processing to ensure quality products. Large volumes of clean water are needed for processing and marketing; processes such as washing, canning, packaging all require high-quality water to ensure product quality and safety. Rising temperatures can cause surface water to evaporate reducing the quantity of water available, but water quality can also be affected; warmer temperature support increased growth of blue-green algae and other parasites, potentially affecting the quality and appearance of products driving consumer demand down.

Supply chain disruptions may also be exacerbated by climate change with indirect impacts on availability and affordability of inputs for field and non-field operations. Increased cost of inputs at the front end of the system – planting, harvesting, and processing - could cascade through the system impacting farm profitability and food affordability. Changes in consumer preferences, food storage requirements, and regulations and policies are also some of the indirect climate impacts that emerged from the survey.

Impacts from these climate changes are already being felt throughout the province's horticulture value chain, emphasizing the need for collective action. Survey results showed that when it was easier for stakeholders to collaborate across the sector success addressing change was more likely. Enhancing stakeholder commitment to shared adaptation outcomes and empowering stakeholders with the skills to address challenges could improve sectoral success. Less cumbersome collaborations across the sector such as growers collaborating with retailers on increasing demand for local horticulture products and sharing mutually beneficial information, may help remove barriers to cross-sectoral partnerships, and actively promote the benefits of collaboration towards adaptation.

Adaptation research and application of knowledge is central in addressing the emerging needs of the sector. Research into alternative growing systems and practices, beneficial pest management and irrigation practices, developing crop seeds that are resilient to climate variability and extremes, monitoring soil health and quality, use of technology in developing adaptive processing, transportation, and storage practices are critical in supporting adaptation planning and decision making. The horticulture sector has made some progress in these areas by maintaining partnerships with research organizations such as Agriculture and Agri-Food Canada, Acadia University, the Nova Scotia Community College, and Dalhousie University; and with provincial government organizations such as the Nova Scotia Department of Agriculture and Perennia Food and Agriculture, Inc.; as well as new partnership with the Nova Scotia Department of Environment and Climate Change. Building on these existing partnerships and enhancing the capacities of stakeholders to work collaboratively should increase the likelihood of success adapting to climate change.

Developing the adaptation outcomes in this strategy is the first step in providing a strong strategic direction. The next step will be to develop a detailed implementation plan that includes activities, timelines, and resource requirements for each outcome or set of outcomes. Implementation and governance teams will be created to champion this next step. The strategy will serve as a guide for implementation teams and the framework to measure progress towards achieving the adaptation outcomes.

Climate change adaptation in Nova Scotia agricultural industry

Nova Scotia's agricultural industry, which plays an integral role in supporting the health and well-being of all Nova Scotians, is experiencing significant challenges and opportunities due to direct and cascading impacts of climate change. To better prepare for climate change, three agricultural sectors - cattle and sheep, horticulture, and Christmas tree and greenery - participated simultaneously in the CALP Program to conduct a climate change scan and produce sector-specific climate change adaptation strategies. Climate change presents different risks to each sector and each strategy reflects the sectors' unique climate adaptation priorities by outlining sector-specific adaptation outcomes. However, high-level themes that emerged were similar across all, presenting an opportunity for cooperation across sectors in the implementation of their strategies. Coordinating adaptive actions could help optimize resources, reduce redundancies, and support a synergistic approach to implementation in areas such as knowledge mobilization, research, and building stronger partnerships across value chains.

ADAPTATION OUTCOMES

The framework used to organize outcomes within this strategy is shown in Figure 1 (below). The industry outcome at the top represents what the horticulture sector aims to achieve overall - not just in the face of climate change but in the face of all potential challenges and opportunities the sector may encounter over time. Outcomes presented below the sector outcome are climate-change specific and reflect an increasing level of detail from top to bottom. These outcomes help to focus and organize the strategy and are designed to guide action that the horticulture sector can take to prepare for climate change. Arrows show that accomplishments at each level are intended to contribute to the achievement of the outcome(s) at the level above.

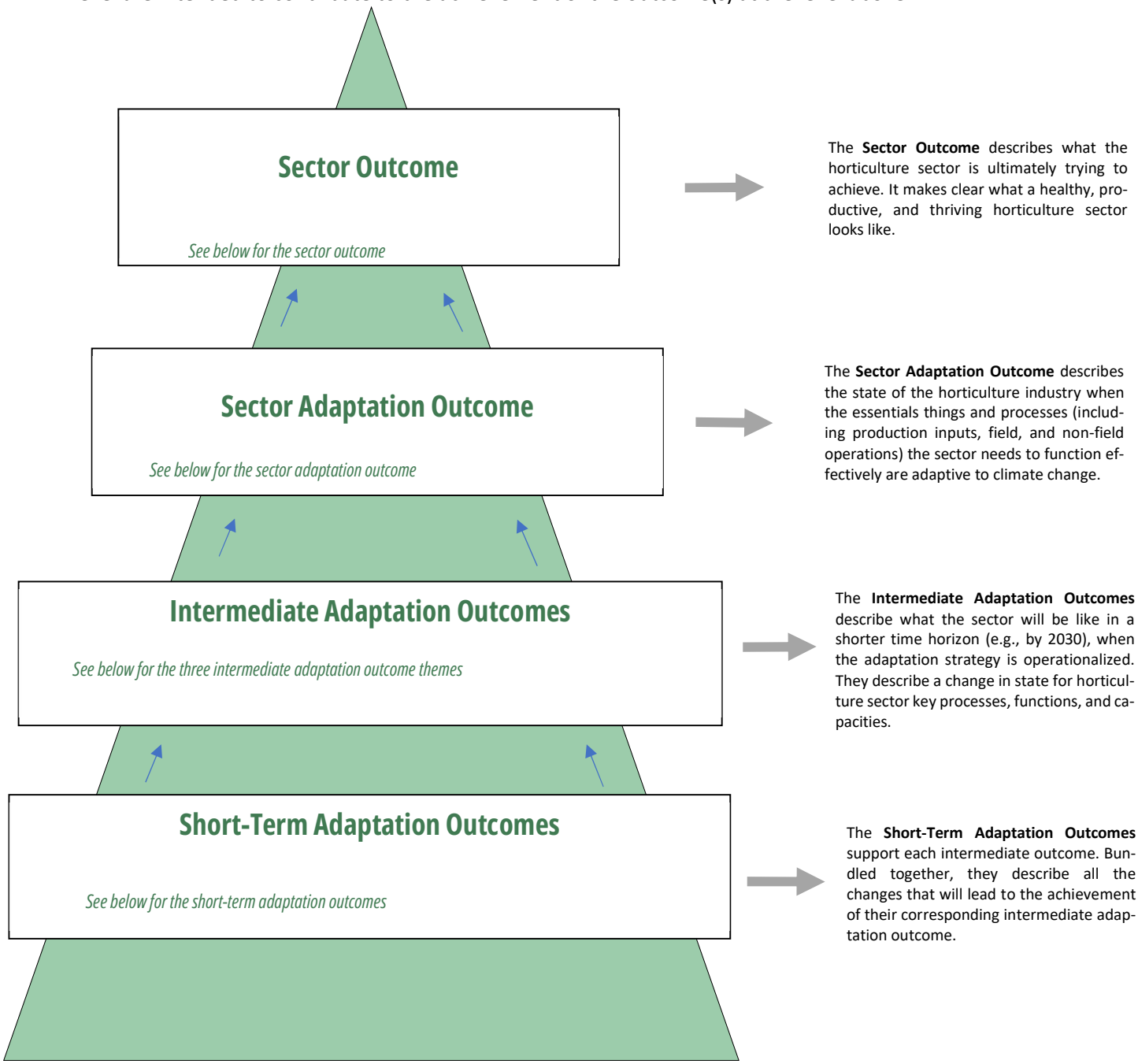

Figure 1: Framework showing outcomes in relation to each other.

The outcomes in this strategy are arranged in a hierarchical structure (see Figure 1). The sector outcome describes the optimal state of the horticulture sector and provides context for the adaptation outcomes. The sector adaptation outcome is representative of the ideal state of the sector when it is adapted to climate change. The overarching sector adaptation outcome is comprised of 4 unique theme areas, each with a singular intermediate adaptation outcome. The intermediate adaptation outcomes are broken down further into manageable short-term adaptation outcomes. These short-term adaptation outcomes, together, contribute to achieving the theme area intermediate adaptation outcome. Similarly, the intermediate adaptation outcomes, together, contribute to achieving the sector adaptation outcome.

The Scan Team worked collaboratively to develop the strategy outcomes. All adaptation outcomes were informed by results of the horticulture sector climate adaptation survey including priority vulnerabilities (essential things and processes[4] that were identified through the survey as being both important and vulnerable to climate change), climate change impacts, effectiveness factors (factors[5] associated with an experience dealing with change that increase the effectiveness in addressing that change), and what the sector is currently doing to address climate change[6].

Sector Outcome

The overarching outcome Nova Scotia's horticulture sector aims to achieve describes a healthy, productive, and thriving horticulture sector:

> "*Nova Scotia's horticulture sector is socially, economically, and environmentally sustainable and is contributing significantly to the province's food sovereignty[7] and food security[8]. The sector is highly regarded, efficient, and adaptable, and key operations and partners[9] are thriving in all circumstances*".

Sector Adaptation Outcome

The adaptation outcome defining the desired state of the horticulture sector when it is adapted to climate change is:

> "*Nova Scotia's horticulture sector is adaptive in the face of climate change. Priority processes[10] are proactively adapted to the impacts of climate change. The sector is applying its knowledge of and responding effectively to immediate and slow-onset climate-related risks and opportunities*".

Intermediate and Short-Term Adaptation Outcomes

Intermediate outcomes with their corresponding short-term outcomes are found in Table 1 below. Each of the 3 theme areas focuses on addressing areas of concern related to climate change while also incorporating ways to increase the effectiveness and adaptability of the sector.

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[4] The system map showing things (i.e., inputs and enabling environments) and processes important for the industry to achieve its desired outcomes can be found in Appendix 3

[5] Factors associated with experience included context (e.g., who and how many people were involved, whether people agreed on various aspects like who to involve, what should be done, or outcomes to be achieved), the nature of the challenge (i.e., its complexity), the processes associated with the experience (e.g., whether people knew what to do, if communication was adequate, whether the process was well designed and implemented), and people and relationships associated with the experience (e.g., engagement level, ease of collaboration, resources available)

[6] How frequently over the past year they had taken climate change into consideration across 22 situations

[7] Food sovereignty is a food system in which the people who produce, distribute, and consume food also control the mechanisms and policies of food production and distribution.

[8] Food security means that an individual or a community has access to nutritious, safe, personally acceptable, and culturally appropriate foods that are produced, procured, and distributed in ways that are environmentally sound and socially just.

[9]Government (federal/provincial/municipal), private and public organizations, extension services and researchers that are not directly producing agricultural commodities but support the sector.

[10] In particular soil and soil quality, environmental conditions, input availability including labour, semi-permanent structures, water quality and quantity and irrigation, pest/weed/disease management, soil management and improvement, soil/field preparation and marketing. These are examples of things and processes vulnerable to climate change that emerged as priorities in the climate change adaptation survey and are not exclusive.

Table 1: Intermediate and short-term adaptation outcomes

Theme	Theme focus and outcome statements
1. Enhanced Knowledge for Effective Climate Change Adaptation	Availability, accessibility and usability of relevant knowledge, information, and tools for climate change action are essential and facilitate the development and implementation of effective responses to emerging sector priorities and changing production, processing, and marketing practices. **Intermediate adaptation outcome 1:** By 2030, Nova Scotia's horticulture sector is actively using and sharing the best available information, knowledge, and tools about climate change and associated risks and opportunities to optimize industry productivity, goodwill, and sustainability in the face of climate change. **Short-term adaptation outcomes:** **1.1** By 2025, strong and effective partnerships are in place to facilitate and support relevant climate knowledge, information, and tool development, which is accessible to Nova Scotia's horticulture sector and regularly updated based on new knowledge, information, and emerging needs. **1.2** By 2027, Nova Scotia's horticulture sector and partners are actively supporting adaptation efforts by providing relevant climate knowledge, information, and tools to sector stakeholders. **1.3** By 2029, Nova Scotia's horticulture sector is implementing, resourcing, and monitoring climate change adaptation and risk management initiatives using the best available climate knowledge, information, and tools.
2. Effective Collaboration and Partnership for Adaptation	The Nova Scotia horticulture sector is a complex value-adding system. Effective collaboration among stakeholders across the sector is an important way to effectively manage risks and taking advantage of opportunities associated with climate change. Having in place collaborative processes and effective partnerships can increase the likelihood of successful sector-wide adaptation. **Intermediate adaptation outcome 2**: By 2030, Nova Scotia's horticulture sector and partners are effectively collaborating on sector-wide adaptation initiatives, and proactively implementing innovative measures that take advantage of opportunities and address existing and emerging climate change risks. **Short-term adaptation outcomes**=: 2.1 By 2023, Nova Scotia's horticulture sector and partners are working together to implement sector-wide adaptation efforts, strengthening engagement and commitment to actions that contribute to the sector's sustainability, efficiency, and responsiveness. 2.2 By 2025, partnerships are in place that effectively facilitate Nova Scotia horticulture sector's continuous development, generation, and application of research to address climate change concerns and support sector adaptation.

2.3 By 2025, the horticulture sector is effectively collaborating with government to develop adaptive and flexible policies and programs that respond to sector needs, ensuring sustainable production and marketing in the face of a changing climate.

3. Sector Sustainability[11] and Viability in a Changing Climate

Sustained viability of the horticulture in the face of climate change sector requires viability of each component that makes up the system. This means taking a sector-wide approach to adapt vulnerable components like soil health and management, semi-permanent structures, water quantity and quality, pest and disease management, input availability, crop processing, and marketing. Growing, storing, marketing, and transportation systems need to be proactive and innovative.

Intermediate adaptation outcome 3:
By 2030, Nova Scotia's horticulture sector is effectively using its climate change adaptation strategy to improve the social, economic, and environmental viability of its producers, distributors, and marketers as well as the sector as a whole.

Short-term adaptation outcomes:

3.1 By 2024, Nova Scotia's horticulture sector is effectively working with relevant government partners to design and/or update relevant water regulations and policies that address water resource sustainability, and are monitoring their effectiveness in meeting the changing needs of the sector.

3.2 By 2025, Nova Scotia's horticulture sector has identified climate change-related supply chain vulnerabilities and is working with partners, including government, associations, and the private sector, to enhance processes to anticipate and mitigate disruptions.

3.3 By 2025, relevant supports, including programs, grants, and funding, are available to Nova Scotia's horticulture sector and partners to enable effective response to climate-related emergencies and/or to rebuild from associated losses.

3.4 By 2025, resources are available to Nova Scotian horticulture producers to support the transition to innovative farming practices[12] that minimize climate-related losses and maximize opportunities[13].

3.5 By 2025, Nova Scotia's horticulture sector is effectively working together on sector-wide approaches related to the processing, transportation, and storage of crops to support climate change adaptation and sector growth.

3.6 By 2026, increased value and demand for Nova Scotian horticulture products are driven by local markets and consumers who have increased knowledge of the value of local products and their role in climate change adaptation.

[11] Involves ensuring the persistence of natural and human systems, implying the continuous functioning of ecosystems, the conservation of high biodiversity, the recycling of natural resources and, in the human sector, successful application of justice and equity.

[12] Includes improving and maintaining soil health and quality through adaptive, consistent, and effective cover cropping, tilling, robust integrated pest management and irrigation practices, to ensure healthy and productive soil that is appropriately adapted to a changing climate.

[13] Examples of opportunities associated with a changing climate include longer growing seasons, opportunity to grow warmer season crops, and development and expansion of new local and export markets. These are some examples of top climate change opportunities that emerged from the survey.

PRIORITY OUTCOMES

The strategy is designed to increase the preparedness of the horticulture sector in responding to immediate and slow onset impacts of climate change. Cross-sectoral efforts in implementing the strategy should be focused on achieving short-term adaptation outcomes. All short-term outcomes are important, but it can be helpful to show which should be achieved first in order to prepare the groundwork for subsequent work. The Scan Team worked together to identify the following priority short-term outcomes that should be considered during the initial phase of implementing the strategy. The table below outlines the rationale for the priority outcomes and possible activities that can support achieving the outcomes (See Appendix 4 for a more fulsome list of potential activities). Activities are the result of initial suggestions by the Scan Team and ECC to kickstart implementation action of the strategy. Activities may be amended and updated as needed by the teams implementing the strategy. A more detailed and comprehensive list of implementation activities will be needed for each short-term adaptation outcome and supporting implementation plans and/or workplans. These workplans will be developed and updated by the sector's implementation teams (see Next Steps section of this report for more details.

Table 2: Priority short-term outcomes, rational, and possible activities

Priority Short-term Outcome	Rationale	Possible Activities
1.1. By 2025, strong and effective partnerships are in place to facilitate and support relevant climate knowledge, information, and tool development, which is accessible to Nova Scotia's horticulture sector and regularly updated based on new knowledge, information, and emerging needs.	Climate change information and knowledge is central to adaptation - accessing and using the right information is critical for successful cross-sectoral efforts. Having key stakeholders from across the sector and partner organizations effectively communicating and working together is a foundational element and should be in place first, which will then enable and support the development and accessibility of relevant climate information.	- Build partnerships with provincial government, especially Department of Agriculture and ECC. Focus should be on enhancing proactiveness in sourcing and updating relevant climate change information.
1.2 By 2027, Nova Scotia's horticulture sector and partners are actively supporting adaptation efforts by providing relevant climate knowledge, information, and tools to sector stakeholders	This outcome ties in to 1.1 and should be the next step after partnerships and resources are in place to support the provision of relevant climate tools and information for adaptation efforts.	- Establish, between producers and researchers, agreed upon process to identify gaps in current available information and priorities for updating this information - Continue to link together data from weather stations across the province. - Provide real time updates on climate activities/changes to producers and other decisions makers.

		- Provide accurate microlevel weather forecasting, especially in preparation for extreme weather events
2.3 By 2025, the horticulture sector is effectively collaborating with government to develop adaptive and flexible policies and programs that respond to sector needs, ensuring sustainable production and marketing in the face of a changing climate	It is important to collaboratively work with relevant government agencies in developing adaptive policies in the face of climate change. The immediate priority, however, is enhancing capacities of sector stakeholders and equipping them with the tools necessary for such collaboration. Although discussions/collaborations within the sector are already happening, it should be a priority moving forward.	- Identify priority actions and funding for i immediate implementation of sector priorities - Work with government partners to design flexible and efficient processes that facilitate and support sector stakeholders' adaptation efforts including recovery from climate disasters and disruptions. - Identify policies that help to address gaps following assessment of horticulture farms to determine weak spots and gaps in farm practices. - Form a team of representatives across the sector to lead the implementation of activities associated with this outcome.
2.2 By 2025, partnerships are in place that effectively facilitate Nova Scotia horticulture sector's continuous development, generation, and application of research to address climate change concerns and support sector adaptation	Ability to apply research, emerging knowledge, and technology in adaptive horticulture production and processing is vital and should be a priority moving forward. The partnerships and resources required to use such information is foundational and facilitates the effective application of knowledge.	- Use a whole farm approach to identify areas for improvement and projects that are tailored to address specific needs. - Develop and share case studies of farms in the province who have applied climate research and are adapting their practices.
3.4 By 2025, resources are available to Nova Scotian horticulture producers to support the transition to innovative farming practices that minimize climate-related losses and maximize opportunities	Transitioning to adaptive farming practices is a priority as growers are already dealing with changes in growing and operating conditions. Resources need to be in place to support the application of research and emerging knowledge and technology in implementing new and adaptive practices.	- Provide extension support for growers to implement new practices including peer to peer learning and demonstration farms - Establish funding programs that support adaptation to climate change and implementation of adaptive practices. - Strengthen relationship between producers and Horticulture processors and retailers to collectively invest upfront tin support of transition to climate adaptive farm practices. This is currently happening with some large-scale farms. - Form a team of representatives across the sector, to lead the implementation of activities associated with this outcome.

3.3 By 2025, relevant supports, including programs, grants, and funding, are available to Nova Scotia's horticulture sector and partners to enable effective response to climate-related emergencies and/or to rebuild from associated losses	To enable the horticulture sector to effectively respond to climate-related emergencies, some of which are already happening, supporting structures need to be in place. This is a priority given the urgency of climate change and unpredictability of extreme events/emergencies. Where this type of support is already available, there is a need to improve timelines and processes, to maximize its impacts for the sector.	- Integrate the horticulture sector requests in the Federal Agriculture Next Policy Framework negotiations. - Discuss opportunities to improve crop insurance efficiency with NS Crop and Livestock Commission - Advocate for improvements to the AgriStability program. - Create timely processes to provide support/relief after climate-related emergencies. - Develop and maintain an emergency contact information database where horticulture sector stakeholders can find appropriate contact information for specialists and support staff during times of emergency. - Erect and maintain shelterbelts/wind breaks around growing fields to aid in sheltering crops from severe wind damage. - Develop programs that provide relief and infrastructure support to sector stakeholders during extreme weather events (e.g., generators, fuel storage, solar panels, etc.) - Develop extension services to evaluate pre-existing farm and processing infrastructures for strength in extreme wind events.

KEY PARTNERS

The horticulture sector includes people and organizations from the production, processing, and marketing parts of the sector, ranging from on-farm producers and processors, farm labour, to researchers, organizations, and government (see Appendix 1 for a system map of Nova Scotia's horticulture sector, developed by the Scan Team). Given the wide ranging and multifaceted impacts of climate change now and impacts expected in the future, effective adaptation efforts will require active engagement and participation from across the sector. The survey results showed that success was more likely when effective communication, information sharing, and a process for establishing priorities and coordinating actions are present. The survey findings also stressed the importance of collaboration and commitment. Given these, ensuring key partners are aware of and committed to implementation of the strategy, and there is an effective communication and engagement strategy, is important. We suggest starting with the following partners as priority in successfully implementing this strategy. This is not an exhaustive list and will need to be further defined during the strategy implementation phase. Details on partners associated with each short-term adaptation outcome can be found in Appendix 5.

- Federal and provincial agencies provide resources, funding, and training support. They are also charged with developing and administering relevant agricultural policies and regulations e.g., pesticide regulation. They include Agriculture and Agri-Food Canada, Environment and Climate Change Canada, NS Environment and Climate Change, NS Department of Agriculture, Natural Resources and Renewables, and Emergency Management Office.
- Horticulture sector stakeholders including growers, processors, marketers, retailers, agriculture extension coordinators and specialists from NS Department of Agriculture and Perennia Food and Agriculture, Inc., and other specialists.
- Horticulture Nova Scotia promotes the interests of Nova Scotia horticulture producers and has membership that spans the sector. The association is a key partner that can liaise with and facilitate partnerships with other stakeholders and support implementation of the strategy.
- Nova Scotia Federation of Agriculture advocates on behalf of Nova Scotia Farmers and supports the development and delivery of programs and services that meet the needs of the farm community.
- Research and technology development is critical in understanding climate impacts, such as impacts to crops from new and emerging pests and diseases. Research institutions such as Dalhousie University, Nova Scotia Community College (NSCC) and Acadia University will be key partners in this regard.
- Atlantic Canada Climate Services Hub - CLIMAtlantic will be a key partner that helps facilitate access to agriculture data and information to support adaptation to climate change.

NEXT STEPS

Having a well-defined process for implementing the strategy and monitoring progress is critical in achieving the outcomes of this strategy. Focus should be on actions that lay the groundwork for successful implementation of the strategy. The following are recommended immediate next steps for supporting the implementation of the strategy.

Priority Next Step	Rationale	Approximate timeline
Endorsement of strategy by Horticulture Governance Team and exploration of resources for implementation	Seek buy-in and endorsement of the Strategy by executives of HNS, ECC, Department of Agriculture, Perennia Food and Agriculture, Inc., and NSFA. Explore availability of human and financial resources for sustainable implementation	Winter 2023
Introductory engagement sessions with priority sector stakeholders.	Communicate strategy to stakeholders and increase awareness and understanding of adaptation outcomes and next steps involved in implementation. This also enhances ownership of strategy and commitment to actions.	Winter 2023
Formation of implementation and governance team(s) tasked with leading strategy implementation including development of outcome activities	Strategically support strategy implementation and engagement with key partners.	Spring 2023
Training of implementation team with necessary skills and knowledge	Increase likelihood of success when required skills and capacities are in place to support the implementation team.	Spring 2023
Development of outcome activities and workplans by implementation team	Tangible activities are required to achieve adaptation outcomes. Activities with assigned timelines are critical to measure progress made towards achieving outcomes.	Summer 2023
Approval and confirmation of resourcing for implementation plan/s by Governance Team	Confirmation of human and financial resources for sustainable implementation. Seek buy-in and approval of implementation plan/s by Governance Team	Summer 2023

CONCLUSION

Producing over 40 varieties of food crops, Nova Scotia's horticulture sector is an important part of the province's agricultural landscape. Livelihoods of farm families and communities, including growers, processors, marketers, and retailers depend on a productive sector and contribute to the province's economic and social well being. Climate change is altering the operating conditions that the sector relies on; temperatures are rising, precipitation patterns are changing, and storms are getting more frequent and extreme. Together these changes are exacerbating existing risks like drought and floods and introducing threats like new pests and diseases.

Recognizing the need to act proactively and quickly to address vulnerabilities to climate change, the horticulture sector partnered with ECC to develop this climate adaptation strategy. The strategy uses an outcome-oriented approach, which is particularly well suited for climate adaptation planning because it offers strong strategic direction while providing flexibility in the steps or activities taken to allow for course-adjustment as uncertainties relating to climate change play out. The Scan Team - a group of stakeholders from across the sector - developed the outcomes using results of the survey and their expertise to inform the work. Outcomes are designed to help the sector stakeholders visualize a common climate adapted future they are working towards together, and implementation plans will follow with more detail.

Outcomes are organized into three theme areas focussing on partnership and collaboration, enhancing knowledge required for climate adaptation, and sector sustainability and viability in a changing climate. Within theme areas outcomes are broken down into several manageable short-term outcomes. The Scan Team prioritized short-term outcomes that should be achieved during the initial phase of implementation to prepare the groundwork for subsequent work. Immediate priority include putting strong and effective partnerships in place to support development and access to knowledge, information, and tools; collaboration to develop flexible policies and programs in response to sector needs; partnerships to support development, generation, and application of climate change and adaptation research; resource availability to producers to support transition to innovative farming practices that minimize climate-related loss and maximize opportunities; and making programs, grants, and funding available to the sector and its partners to enable effective response to climate-related emergencies.

Climate change is experienced across the horticulture sector and therefore adaptation requires a sector-wide response. Achieving the adaptation outcomes will require the collective effort of all stakeholders working together, monitoring progress, and sustaining action. To successfully deal with climate change, sector stakeholders from producers, industry associations and, distributors, to government departments and researchers, need to be committed to the outcomes and engaged in well-designed processes for strategy implementation.

As a next step, a well-defined process for implementation and monitoring needs to be developed. Sector stakeholders should be engaged to enhance their understanding of what will be required to achieve the adaptation outcomes and collective ownership of the strategy. A coordinator should be hired and embedded in an organization to manage and monitor strategy implementation. Under the guidance of the coordinator, ECC, and strategy governance, and in collaboration with the implementation teams, workplans should be developed detailing activities, timelines, and budgets for achieving strategy adaptation.

The horticulture sector is an important part of the agricultural landscape; the temperate climate, quality soil, and the sea breezes in Nova Scotia creates ideal growing conditions for a wide variety of food crops. Climate change and its effects present threats and opportunities to the horticulture system including to crop production, processing, storage, transportation, marketing, and sales. The development of this strategy builds on existing capacities that the sector already has for dealing with changing circumstances, and positions it for improving its preparedness for immediate and long-term impacts of climate change.

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APPENDICES

APPENDIX 1: CLIMATE ADAPTATION LEADERSHIP PROGRAM - SCOPE, METHODS, AND APPROACH

➢ The CALP Program

The Climate Adaptation Leadership Program (CALP) is a skills development and capacity building program intended to help enhance provincial departments and stakeholder's climate resiliency. Led by the Climate Change Division (CCD) within Nova Scotia's Department of Environment and Climate Change (ECC), the CALP program is partially funded by Natural Resources Canada (NRCan) through the Building Regional Adaptation Capacity and Expertise (BRACE) program, and partially by the Nova Scotia Government.

The CALP program is modelled around a typical adaptive management cycle which includes a 5-step process:

Step 1. Becoming fully aware of climate risks and opportunities, as well as what factors make the sector effective in the face of change
Step 2. Developing a sector adaptation strategy with strategic adaptation priorities
Step 3. Pragmatically operationalizing the strategy
Step 4. Monitoring and adjusting the strategy
Step 5. Sustaining the strategy over the long term

➢ Program Goal

The CALP program uses a learn-by-doing approach to develop and implement a sector specific climate change adaptation strategy. Through the development and implementation of the sector's adaptation strategy, the CALP process aims to enhance and build sector capacity while also increasing sector preparation and anticipation of climate related risks and opportunities in the present and in the future.

➢ Why is this Important?

The Nova Scotia's horticulture sector is essential to the economic and social well-being of the province. Climate change and its cascading impacts threaten the sectors key things and processes, placing extra pressures on the sector. The climate change adaptation strategy developed through CALP helps to guide the horticulture sector in achieving sector adaptability and resiliency in the face of climate change, mitigate climate risks, and take advantage of any opportunities that arise.

➢ CALP's Five-Step "Learn-by-Doing" Process

Steps	What's involved
Step 1 Study systems functions, priorities, capacities, and climate risks (Adaptive capacity: Fully Aware)	Three workshop series: Workshop Series 1 – System Mapping Workshop Series 2 – Survey Design Workshop Series 3 – Data Analysis

Step 2 Adaptation strategy development (Adaptive capacity: Strategically Oriented)	One workshop series: Workshop Series 4 – Strategy Development Approval of the strategy by scan and governance teams.
Step 3 Strategy implementation (Adaptive capacity: Tactically Pragmatic)	An implementation team will be selected to help with strategy implementation. Strategy implementation will follow a similar workshop format as step 1 with 4 possible workshops: Workshop Series A: Program Re-Orientation Workshop Series B: Implementation Planning Workshop Series C: Monitoring and Evaluation Workshop Series D: Building the Champion Network
Step 4 Build a monitoring & evaluation system (Adaptive capacity: Feedback Responsive)	Questions will be addressed to ensure that strategy implementation is going as planned and results are occurring as expected. Examples of questions to be addressed: Are we achieving what we set out to do? What needs to change? What we did vs. what we were supposed to do? Are we seeing the desired results?
Step 5 Make a plan to sustain action (Adaptive capacity: Sustainably Networked)	A plan will be developed to move forward while continuing to build sector capacity with sector stakeholders.

- **Workshop Process Leading to the Adaptation Strategy**

Throughout steps 1 and 2, the scan team completed numerous workshops together. The workshops, which culminated into the adaptation strategy, are summarised below.

→ ***Workshop 1 Series: System Mapping***

The first part of Workshop Series 1 was used as an orientation. Scan team members were introduced to the CALP process and their roles within the process. During the remaining portion of Workshop Series 1, scan

team members worked collaboratively in reviewing and validating a system model of the horticulture sector, prepared by the scan ECC facilitators and sector leads. This system model is a diagram representing the intertwined components that work together for the successful operation of Nova Scotia's horticulture sector from production to marketing and consuming. Once the system model was agreed on and validated by the Scan Team, Scan Team members were also asked to validate sector outcomes, developed by ECC facilitators, and to develop a preliminary list of climate change impacts affecting the horticulture sector. These workshop outputs laid the foundation for the remaining workshop series to come.

→ *Workshop 2 Series: Survey Design*

The second workshop series saw the horticulture scan team agree on and validate a sector-wide Climate Change Survey. Sector ECC facilitators prepared a survey draft prior to beginning Workshop Series 2 based on the information gathered from Workshop Series 1, mainly the system model. Throughout the workshop series, scan team members collaboratively reviewed, edited, and validated the survey draft to create the final draft. Scan team members also brainstormed the best ways to distribute the survey across their sector as well as ways to increase survey completion. After validation and endorsement from the scan Governance Team, the survey was distributed via the processes outlined by the scan team, to the Nova Scotia horticulture sector.

The survey covered topics such as:

- Demography of respondents
- Effectiveness factors when dealing with change
- Priority things and processes likely to be affected by climate change
- Top climate change impacts that affect the horticulture sector
- Potential climate change opportunities
- Consideration of climate change by sector stakeholders

→ *Workshop 3 Series: Data Analysis*

Workshop series 3 had scan team members analyzing data collected from their sector survey. Sector ECC facilitators led scan team members through various data analysis procedures, using the BNApp (an online data analysis tool), to give scan members a sense of where their data comes from and what it is saying. Scan team members were then provided ample time to review key data emerging from the survey results and to discuss the meaning of the data findings. A full data analysis report was developed by sector ECC facilitators and validated and endorsed by both the scan team and scan governance team.

Data analysis covered throughout this workshop series included analysis on:

- Priority vulnerable things and processes to climate change
- Climate change impacts and opportunities
- Factors effective in addressing change
- Consideration of climate change by sector stakeholders

→ *Workshop 4 Series: Adaptation Strategy*

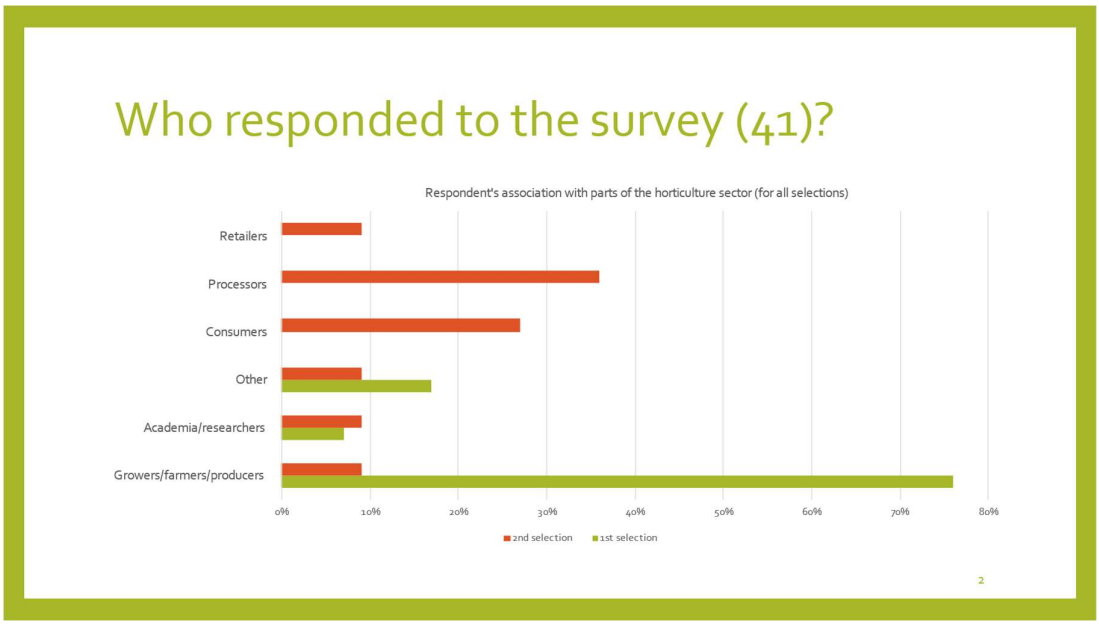
The final set of workshops saw the scan team develop their sector's climate change adaptation strategy. Using the data collected from the survey, sector ECC facilitators developed a series of overarching, intermediate and short-term adaptation outcome statements which scan team members reviewed and validated until satisfied that all outcome statements represented the priorities of the horticulture sector. Scan team members also developed a list of next steps as well as key partners essential for strategy implementation. ECC facilitators sought endorsement from sector governance and scan teams before finalizing the strategy.

APPENDIX 2: KEY DATA FINDINGS

The horticulture sector adaptation strategy was developed using the data gathered from the sector-wide climate change survey in the winter of 2021. This Appendix section provides a summary of the key messages that emerged from the survey data analysis. The complete result of analysis can be found in a separate report, - the Horticulture Sector Survey Data and Analysis Report.

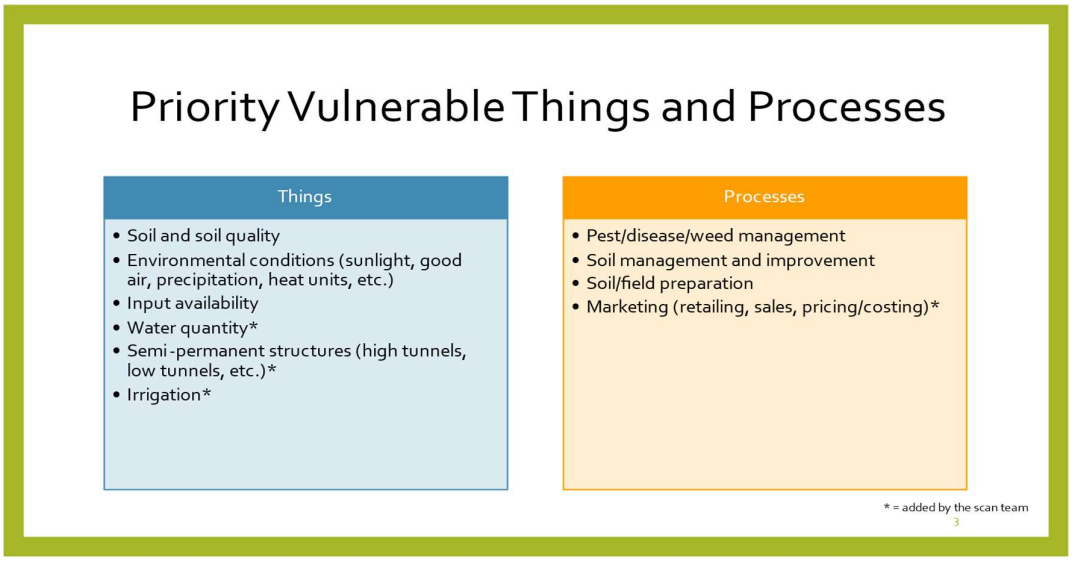
KEY MESSAGE 1: Who responded to the horticulture sector climate change survey?

The horticulture sector climate change survey received 41 responses. To understand the audience that completed the survey, survey respondents were asked to indicate what part of the horticulture sector they were involved with. Respondents were able to select more than 1 answer. The majority of respondents identified as growers/farmers/producers.



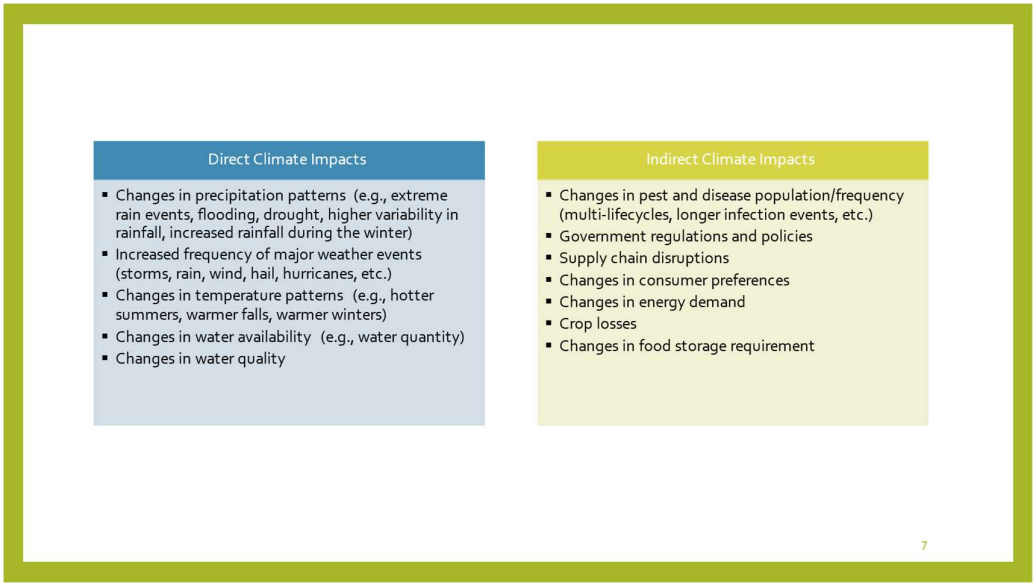
KEY MESSAGE 2: What sectoral things and processes did survey respondents consider most vulnerable to climate change?

Survey respondents selected soil and soil quality, environmental conditions, input availability, water quality, semi-permanent structures, and irrigation as the most vulnerable things to climate change. Pest/disease/weed management, soil management and improvement, soil/field preparation and marketing were selected as the most vulnerable processes to climate change.



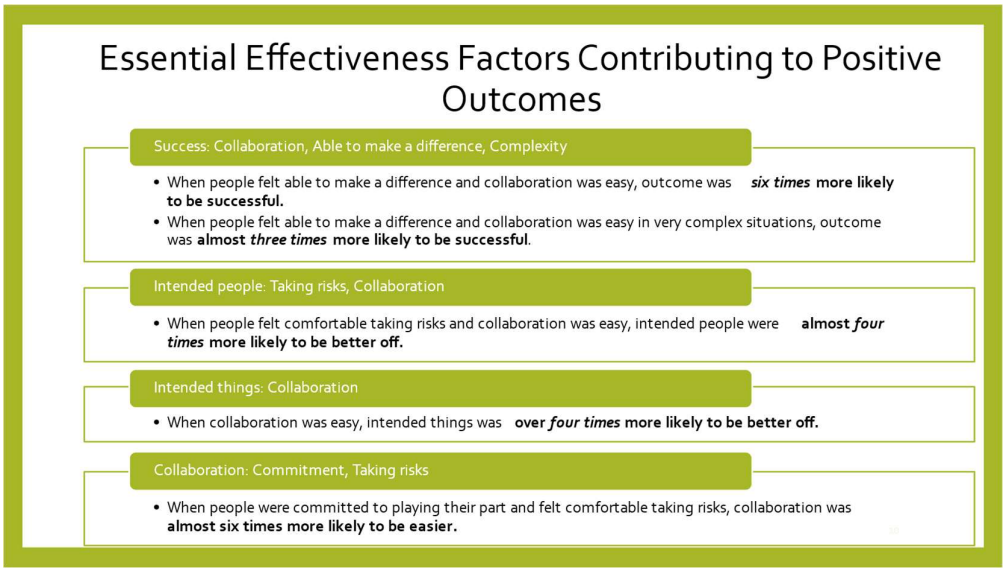
KEY MESSAGE 3: What climate change impacts did survey respondents consider to be most threatening to the priority vulnerable things and processes?

Top climate change impacts on priority vulnerable things and processes were indicated as: changes in precipitation patterns, increased frequency of major weather events, changes in temperature patterns, changes in pest/disease population/frequency, water availability, government regulations and policies, changes in energy demand, crop losses, changes in food storage requirements, water quality, changes in consumer demand and supply chain disruptions.



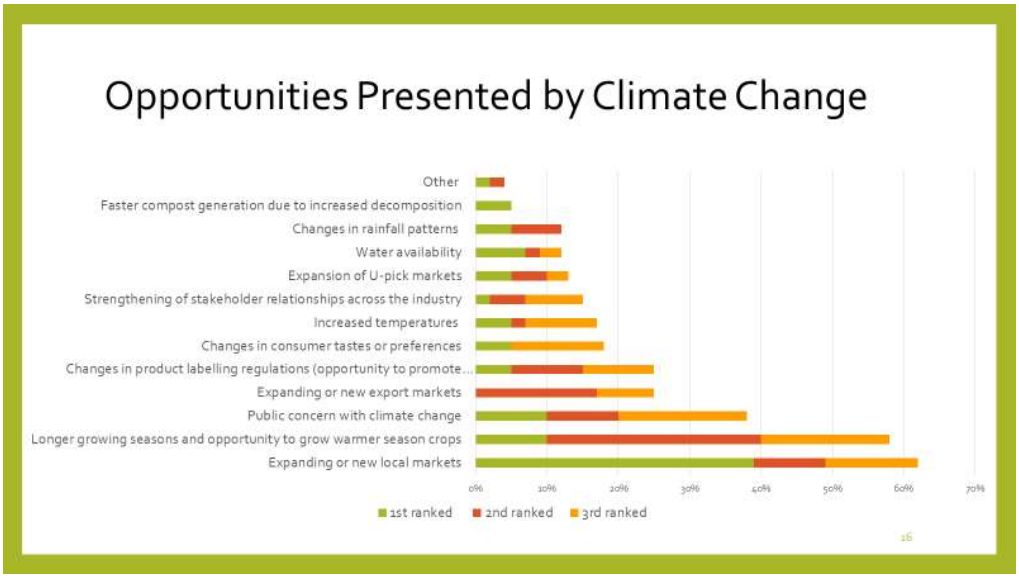
KEY MESSAGE 4: What helped or hindered the horticulture sector's ability to adapt to change?

The horticulture sector's ability to successfully adapt to change was mostly influenced by easy collaboration. Collaboration was made easy when people were committed to playing their parts and they felt comfortable taking risks. Survey results also showed that in conjunction with easy collaboration, people feeling as though they can make a difference, even in very complex situations, increased the likelihood of success in adapting to change.



KEY MESSAGE 5: What climate opportunities are presented by climate change that may help the horticulture sector?

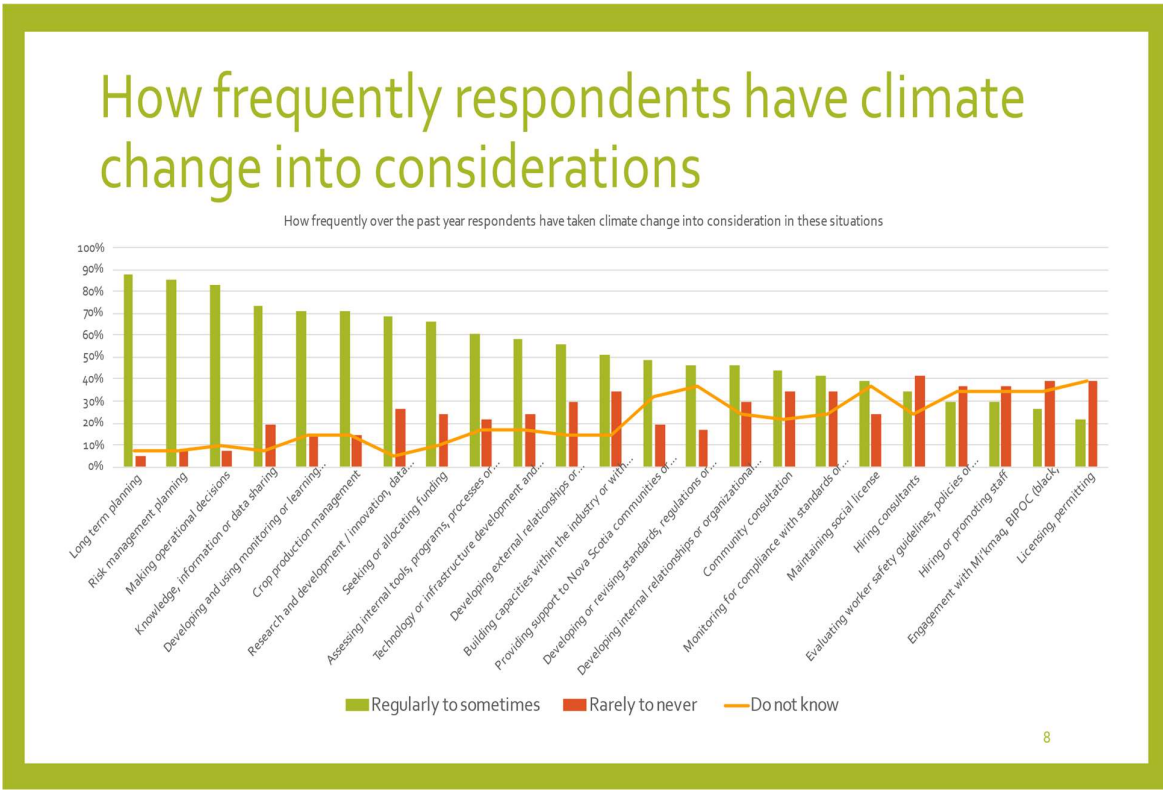
Survey respondents were asked to indicate climate change opportunities they felt would help the horticulture sector in the coming years. Survey respondents were able to select their top 3 climate change opportunities. The most prominent climate change opportunity was indicated as expansion or creation of new markets followed closely by a longer growing season for crops. Overall, survey respondents believed that there will be opportunities for the horticulture sector as a result of climate change.



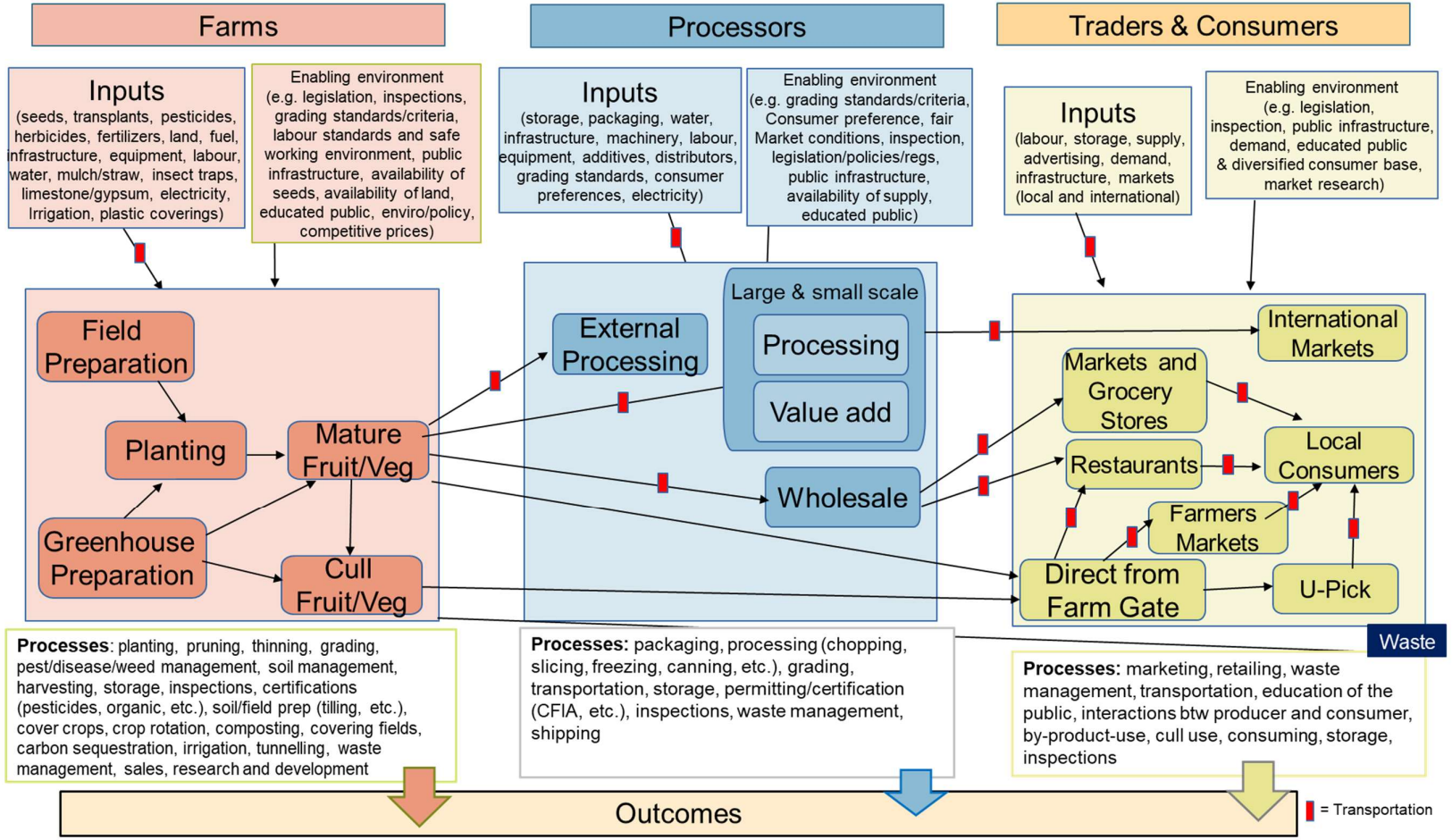
KEY MESSAGE 6: How often climate change is considered on an individual basis, over the last year, by survey respondents?

Survey respondents were asked to indicate how often they consider climate change in a series of scenarios. Overall, survey respondents consider climate change regularly throughout the majority of the presented scenarios. Areas in which improvement on climate change consideration can be made includes when hiring consultants, evaluating worker key safety guidelines and policies, when hiring or

promoting staff, when engaging with equity seeking minority groups and when licensing or permitting.



APPENDIX 3: Horticulture System Model



APPENDIX 4: OUTCOME ACTIVITIES

Possible activities for non-priority outcomes are captured in the table below:

Short-term Outcome	Possible Activities
3.2. By 2025, Nova Scotia's horticulture sector is able to identify supply change vulnerabilities and is working with partners, including government, associations, and the private sector, to enhance processes to anticipate and mitigate unexpected supply chain disruptions and changes in input availability as a result of climate change.	- Conduct vulnerability assessment of different inputs/parts of the supply chain. - Diversify input suppliers based on findings from vulnerability assessment. - Establish incentives to re-localize production of certain key inputs. - Update relevant regulatory development process to allow for flexibility in dealing with different sector stakeholders. - Promotion of the role of agriculture extension coordinators in supporting growers to navigate regulatory requirements.

APPENDIX 5: KEY PARTNERS

Short-term adaptation outcomes	Key Partners
By 2027, Nova Scotia's horticulture sector and partners are actively supporting adaptation efforts by providing relevant climate knowledge and tools to sector stakeholders	• Horticulture sector growers and processors. • Agriculture extension coordinators and specialists from Department of Agriculture (NSDA) and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change). Adaptation effort/action will determine the type of specialist - in general, they provide relevant information to stakeholders. • Provincial government - NSDA, ECC and Natural Resources and Renewable (NRE). • Agriculture and Agri-Food Canada (AAFC) • CLIMAtlantic – Atlantic organization that updates climate change data and information tools. • Horticulture Nova Scotia
By 2025, strong and effective partnerships are in place to facilitate and support relevant climate information development, which is made accessible to Nova Scotia's horticulture sector and regularly updated based on new knowledge and emerging needs	• Horticulture sector growers, processors, and marketers. • Agriculture extension coordinators and specialists from NSDA and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change). • Research institutions such as Dalhousie University, Acadia University, and Nova Scotia Community College (NSCC). Institutions develop and update climate information that is shared with stakeholders. E.g., the frost event research team that supports the development of beneficial management practices to adapt/mitigate frost impacts. • CLIMAtlantic • Horticulture Nova Scotia (HNS). Distributes updated information to its members and partners.
By 2029, Nova Scotia's horticulture sector is implementing, resourcing, and monitoring climate change adaptation and risk management initiatives using the best available climate information	• Horticulture sector growers, processors, and marketers. • Agriculture extension coordinators and specialists from NSDA and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change). Type of specialists will depend on the risk management initiative being implemented • CLIMAtlantic • Horticulture Nova Scotia
By 2023, Nova Scotia's horticulture sector and partners are working together to implement cross-sectoral adaptation efforts, strengthening engagement and commitment to actions that contribute to the sector's sustainability, efficiency, and responsiveness	• Horticulture sector growers, processors, and marketers. • Agriculture extension coordinators and specialists from NSDA and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change). • HNS • Provincial government - NSDA, ECC, and NRE • Nova Scotia Federation of Agriculture (NSFA).
By 2025, the horticulture sector is effectively collaborating with government to develop adaptive and flexible policies and programs that respond to sector needs, ensuring sustainable production and marketing in the face of a changing climate	• Horticulture sector growers, processors, and marketers. • Agriculture extension coordinators and specialists from NSDA and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change). • Horticulture Nova Scotia staff • Provincial government - NSDA, ECC, and NRE

	• Acadia University, NSCC and Dalhousie University. Institution will vary based on the policies and programs to be developed. • NSFA can support lobbying government for changes to existing regulations and policies
By 2025, partnerships are in place that effectively facilitate Nova Scotia horticulture sector's continuous application of research to address climate change concerns and support sector adaptation.	• Horticulture sector growers, and processors • Federal government Department of Environment and Climate Change Canada (ECCC), AAFC • NSFA • Provincial government - ECC and NSDA • Research institutions • Other related agricultural commodity groups • Interest groups such as – Ecology Action Center (EAC), Efficiency NS, • Private business organizations, they can provide technical and supporting programs. • CLIMAtlantic
By 2025, Nova Scotia's horticulture sector has identified supply change vulnerabilities and is working with partners, including government, associations, and the private sector, to enhance processes to anticipate and mitigate unexpected supply chain disruptions and changes in input availability as a result of climate change.	• Horticulture growers, processors, marketers, and retailers • Provincial government - Departments of Economic Development, Infrastructure and Housing (can support storage facilities for and food reserve programs), Finance and Treasury Board, NSDA, and ECC. • Other agriculture commodity groups • HNS • Input suppliers • Private business organizations
By 2025, relevant support (including programs, grants, and funding) is available to Nova Scotia's horticulture sector and partners to enable effective response to climate-related emergencies or to rebuild from loss associated with climate change.	• Horticulture growers, processors, marketers, and retailers • AAFC • Provincial government - Department of Economic Development, NSDA, ECC, and NRE • Emergency Management Office • Crop and Livestock Insurance Commission • Agriculture extension coordinators and specialists from NSDA and Perennia Food and Agriculture, Inc., and other specialists (e.g., from Department of Environment and Climate Change) can support program design and implementation • NSFA • Nova Scotia municipalities that may be involved in funding programs
By 2024, Nova Scotia's horticulture sector is effectively working with government partners in the design and/or update of relevant water regulations and policies that address water resource sustainability and monitoring their effectiveness in meeting the changing needs of the sector.	• Horticulture growers, processors, marketers, and retailers • ECC (Water Branch) and NRE – primary responsibility to manage water resource in Nova Scotia • NSFA • NSDA • Nova Scotia municipalities
By 2025, resources that support the transition to farming practices that minimize climate-related losses and act on opportunities are available to	• Horticulture growers, processors, marketers, and retailers • Perennia Food and Agriculture, Inc. • NSDA and ECC

Nova Scotian horticulture producers.	• Dalhousie Universityxx , Acadia University, Cape Breton University and NSCC • Private sector – can support new technology development and transition) • AAFC • HNS • NSFA Partners can provide expertise and knowledge through educational support
By 2025, Nova Scotia's horticulture sector is effectively working together on sector-wide holistic approaches related to the processing, transportation and storage of horticulture crops which helps ensure adaptability to climate change and sector growth.	• Horticulture growers, processors, and marketers • Infrastructure and Housing (can support storage facilities and strategic food reserve programs) • NSDA, Perennia Food and Agriculture, Inc., ECC • Private sector experts including engineers and planners • Retailers- can support stable contract negotiations with producers to enable financial investment in new processing and storage facilities. • Commodity groups including Nova Scotia Fruit Growers, Wild Blueberry Producers Association of NS
By 2026, increased value and demand for Nova Scotian horticulture products are driven by local markets and consumers who have increased knowledge of the value of local products and its role in climate change adaptation.	• Commodity groups including Nova Scotia Fruit Growers, wild Blueberry Producers Association of NS • Health professionals including dietitians, doctors, public health, • NSDA and ECC • Private sector marketing groups • HNS • Local businesses including Farmers Market, Taste of Nova Scotia, Restaurant Association of NS • Business development associations including Chambers of Commerce, Nova Scotia Business Inc. Key role of partners is educating consumers on the value of local products including managing environmental footprint from transport and storage of products, health implications, and economic development opportunities.