Southern Gulf Islands

Local Area Food and Agriculture Plan

2021

Prepared for

Southern Gulf Islands Community Economic Sustainability Commission

Prepared by

Southern Gulf Islands Food Resilience Alliance

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1) A separate Reports Appendix provides the complete text of all the Community Engagement Reports prepared in 2021 and summarized in Section II of this report.
2) Hyperlinks throughout this report take readers to information sources and websites.

Acknowledgements

The Southern Gulf Islands (Galiano, Mayne, Pender and Saturna) are on the traditional territories of the Coast Salish people. This report aims where possible to connect the Indigenous worldview that we are all part of nature and have a responsibility to nature by adopting regenerative and sustainable food and agriculture systems in the Southern Gulf Islands. We seek to find ways to improve relationships amongst all community members, respect the natural world, and increase the resilience of food and agricultural systems. Reconciliation with Indigenous communities can be practiced in an agricultural context through land restoration and developing a practice of respect and reciprocity for the ecosystems that sustain us.

Production of this Southern Gulf Islands Local Area Food and Agriculture Plan (LAFAP) was initiated and supported by the Southern Gulf Islands Community Economic Sustainability Commission (SGI CESC) with funding through a Community Works Fund grant to undertake the following:

Stages 1 & 2	Conduct research of food security and resiliency assets, components and high-level priorities
Stage 3	Develop an engagement plan to increase agricultural sustainability and food security.
Stage 4	Implement engagement plan.
Stage 5	Produce an operational plan with key goals, actions and priorities for Phase 2.

The CESC supported the establishment of the Southern Gulf Islands Food Resilience Alliance (SGI FRA) to build upon the Southern Gulf Islands Food and Agriculture Strategy (SGI FAS) produced in 2017. Specifically, this LAFAP report provides an update to the SGI FAS with a focus on how to respond to disruptions in the food system caused by the COVID-19 pandemic and ongoing climate change.

This report builds on the ongoing strategic guidance provided by the 2017 SGI FAS and its accompanying background reports. Highly relevant and transferable information contained in the Salt Spring Island Area Farm Plan Renewal 2020 – 2030 report and the Salt Spring Island Climate Action Plan 2020 to 2030 also informed sections of this plan.

The SGI Community Resource Centre and many local food and agriculture groups conducted outreach and engagement activities for residents, gardeners, and farmers that provided current, grass roots information on challenges and opportunities to inform this report. Special thanks to the Gulf Islands Food Co-op (GIFC), the Galiano Community Food Program (GCFP) and the Pender Island Farmers' Institute (PIFI). Members of these groups attended many meetings and focused Roundtable discussions to address common issues. Feedback from all these projects and activities helped shape the recommendations in this report. These groups also reviewed and commented on a draft of this report leading to significant improvements.

Ed Andrusiak, Rebecca Ewing and Erika Preece conducted background research, attended many agriculture and food system webinars and wrote sections of this report; Leila Bautista designed and formatted the report; Ed Andrusiak oversaw production.

Executive Summary

Around the world, communities are examining their food and agriculture systems through the lens of food security and sustainability. Supply chain interruptions resulting from COVID-19 public health protocols, compounded by the disastrous Fraser Valley floods of 2021 and other weather events, brought into focus fragilities in B.C.'s food supply system and strengthened interest and support for resilient food supplies in the Southern Gulf Islands. Understanding of local indigenous foodways and perspectives provides a lens for a more wholistic and environmentally stable approach to local food and agriculture that respects our local ecosystems.

The Southern Gulf Islands (SGI) have unique characteristics that warrant a locally focussed review to identify actions to improve local food supply and sustainability. In 2017, a comprehensive review of SGI food and agriculture systems identified strategies and actions to improve local supply and sustainability. While progress was made on some of the actions identified in the 2017 report, there was not a comprehensive effort to lead implementation of the recommendations.

This report takes stock of SGI food and agriculture systems in 2021, reviews and updates local priorities and challenges under COVID-19 and the climate crisis, and identifies actions to improve the situation. Like the 2017 report, this report takes a wide view to scope out the gamut of issues and actions that could improve food security for the SGI. A food security and emergency preparedness perspective is critical when reviewing on-island food systems given the potential for islands to be "cut off" from normal supply chains during an emergency.

Background and Context

Previous food and agriculture strategies from Salt Spring Island, the Capital Regional District, and many other sources, as well as work ongoing at research groups like the Kwantlen Polytechnic University (KPU) Institute for Sustainable Food Systems lay out the range of topics where action could improve local food systems. The actions identified here represent those with specific relevance to the SGI.

Local SGI food and agriculture groups and infrastructure such as farmers' markets, food banks and community gardens are a key part of the SGI food system and primary deliverers of future actions to improve local food resiliency. The Gulf Islands Food Co-op (GIFC), the Pender Island Farmers' Institute (PIFI) and the Galiano Community Food Program (GCFP) are three local groups that have been particularly active running creative projects and programs to improve the local food systems. Many of the actions identified here are intended to support, encourage and expand work that is already underway by the various local organizations. A vital initial step is to strengthen the Southern Gulf Islands Food Resilience Alliance as an umbrella group for these local organizations that helps identify funding sources and synergies for their work.

Statistics on SGI food consumption and production indicate that the islands are only about 3-10% self sufficient in food, and that only about 30% of prime farmland is being farmed. Unique local conditions like off island shopping, exceptionally high land values, and low economic returns from farming help explain the low level of food self-sufficiency in the SGI which at one time were net exporters of food. The actions identified in this report are intended to improve both consumer understanding and demand for local foods, and local food supply. Climate friendly approaches such as regenerative agriculture and respect for Indigenous knowledge and foodways are emphasized when looking at actions to increase food production.

Community Engagement

Several initiatives undertaken in 2021 promoted local food and agriculture while also gathering up-to-date information on consumer and producer perspectives. This strategy to build information collection into practical projects is an effective way to test out new projects and ideas while at the same time collecting information on local priorities and challenges.

Consumer demand for local food in the SGI is strong, especially during the seasonal influx of visitors in the summer. COVID-19 led to more consumer interest in locally grown food, including backyard gardening. Challenges include limited public access to locally grown meat (Saturna is an exception), limited/no sales of locally produced greens and fresh vegetables during winter months, and perceived higher cost for locally grown food. There is a great opportunity to increase uptake and demand by residents for locally produced food and for local food producers to fill that demand.

The SGI is home to about 100 farms that produce at least some products for sale, and many more backyard food growers. Challenges to increasing SGI food production include land, labour and water constraints, and more generally the difficulty to make a sufficient financial return from farming. Opportunities identified to support SGI farmers revolve around creating more secure and affordable input streams, increasing communication amongst farmers and between farmers and local food purchasers including restaurants and grocery stores, advocating for and accessing government supports for farmers, and promoting improved processing and storage of local crops.

Vision and Goals

Vision

A thriving, resilient local food and regenerative agriculture system on the Southern Gulf Islands that respects local ecosystems and treats food not as a commodity, but as part of the community culture.

With diversity, knowledge and sustainability as core values, our food growers, processors, distributors and eaters would all be engaged in a well-informed, respectful and fair exchange of goods and services. By acting with respect for the land and all living things, we will ensure abundant food for future generations.

The vision developed for this report captures two key principles. First, that to be sustainable, secure, and environmentally responsible, farm and food systems need to understand, be connected to and respect the local natural environment. The report recognizes that “Indigenous food sovereignty can provide wide-ranging benefits by offering an alternative to the global industrial food system and encouraging more respectful, responsible, and sustainable interactions amongst people and the natural world.” Second, that to be economically secure, the community needs to recognize and support the value of local farm and food production through stable, supportive relationships and fair pricing.

Eighty-six priority actions to achieve this vision are organized under seven interrelated goals and accompanying strategies as shown below. These goals, strategies and actions aim to improve demand and supply, build stronger understanding and relationships between food producers and consumers, and incorporate indigenous and local knowledge relating to regenerative methods and climate change resiliency.

1. Establish a Leadership Group to Advance Food and Agriculture on the SGI

1.1. Use guidance in the SGI FAS, the SGI LAFAP and the SSIAA model to establish an implementation leadership group
1.2. Establish multiple funding sources to implement the actions in the SGI FAS and LAFAP

2. Increase Consumer Awareness and Demand for Locally Grown Food

2.1. Work with the "Closing the Supply Gap" initiative to develop a local short supply chain food system anchored by a shared values proposition
2.2. Diversify means for customers to access local foods
2.3. Improve consumer understanding of the benefits and availability of locally grown food

3. Increase Production of Locally Grown Food Using Regenerative Agriculture Practices

3.1. Improve the economic viability of SGI food and ag system
3.2. Improve farmer access to key inputs and infrastructure
3.3. Share practical knowledge about organic regenerative agriculture
3.4. Build understanding and assess potential of innovative growing systems
3.5. Increase food production in home and community gardens

4. Increase Local Food Processing and Storage of Local Foods

4.1. Identify and promote opportunities to increase local food processing
4.2. Ensure the SGI communities understand, are prepared for and can respond to major fast acting disruptions to the food supply

5. Take Action to Respond to the Climate Crisis

5.1. Provide locally relevant information to islanders about the growing impact of climate change on SGI food security and how to respond
5.2. Encourage food growing practices that regenerate soils, ecosystems and communities
5.3. Prepare for climate impacts by improving water management
5.4. Reduce food waste in the local food system
5.5. Increase resilience in food production to prepare for anticipated climate change conditions

6. Improve Access to Information and Education

6.1. Maintain a reliable, updated and accessible knowledge base about the SGI food and agriculture system
6.2. Create opportunities for continuous learning for local food growers and community members

7. Work with First Nations and Indigenous Knowledge

7.1. Seek and provide support for indigenous leadership in restoring and integrating traditional forms of agriculture and mariculture into the SGI food system

Next Steps

Section IV of this report provides an implementation framework where actions are summarized and prioritized. Suggested lead organizations and rough timelines are identified for high priority actions. This implementation framework is intended to inform a more detailed Implementation Plan (Phase 2 of this project) with cost estimates and more detailed project descriptions which can be used to seek and allocate funding to perform priority actions.

Note: Website links throughout the report take the reader to supporting websites and documentation.

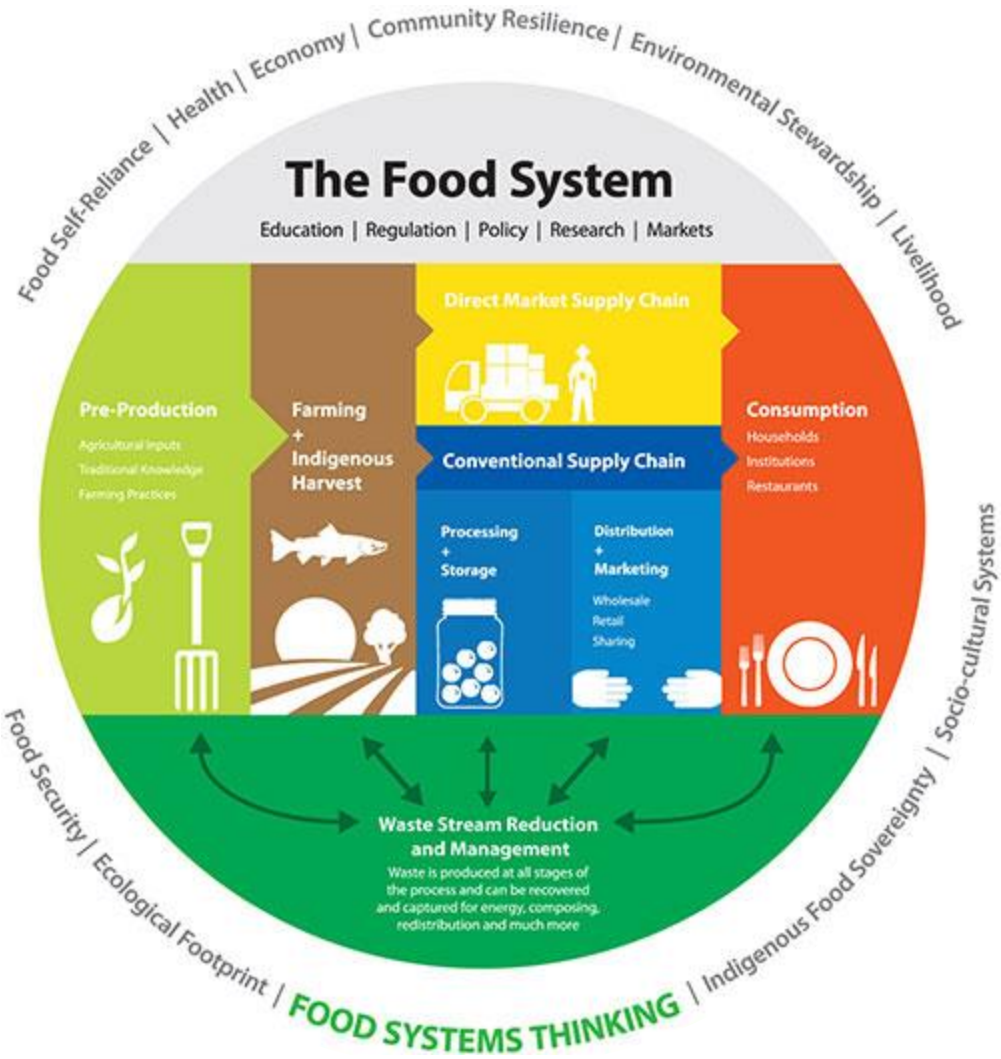
Image 1: Sheep, Campbell Bay Farm (Saturna)

Introduction

This report has several purposes:

- To update the 2017 Southern Gulf Islands Food and Agriculture Strategy (SGI FAS) by reviewing progress on its recommended actions and updating its data and information with an emphasis on identifying actions to respond to disruptions from COVID-19 and ongoing climate change.
- To report on what we heard from food system participants about challenges, opportunities and priorities for the local agriculture and food system in 2021.
- To build on the SGI FAS with an expanded focus on small scale and backyard food production, processing and storage.
- To provide an updated set of recommended actions to promote a thriving, resilient local food and regenerative agriculture system that respects the Indigenous understanding of local ecosystems and treats food not as a commodity, but as an integral part of the community culture.

Figure 1: Diagram of Food and Agriculture System



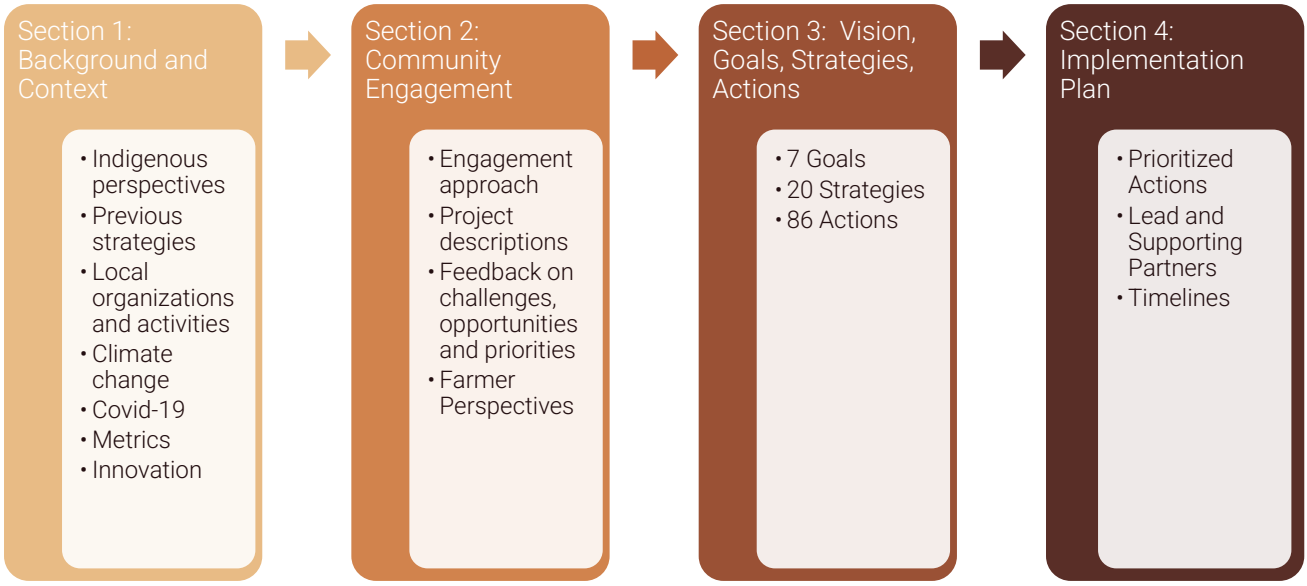
A diagram prepared by KPU gives a useful summary of the components of the food system and is used to organize some of the information. The report touches on all components of this diagram, with a focus on: Consumption, especially with an eye to the Direct Market Supply Chain, Farm and Backyard Food Production and Inputs, Food Processing, Education Opportunities and Indigenous knowledge relating to agriculture and food. (KPU)

The report is not a comprehensive update of the 2017 SGI FAS, but is focused on how best to respond to ongoing disruptions in the food system caused by the COVID-19 pandemic and the increasingly extreme weather events exacerbated by climate change. The report identifies actions to improve the resilience of food supply chains by emphasizing the importance of local food production and short supply chains. This report is Phase 1 of a two-phase process. Phase 2 is the development of a costed Implementation Plan for the actions identified in this plan.

Early in 2020 the Province imposed restrictions on travel and other measures to counter the increasing number of COVID-19 infections in the population. The immediate impact was panic buying which, combined with disruptions to long food chains, resulted in empty store shelves. Added to this was unemployment caused by businesses being ordered to close. Food banks were under pressure as the number of users increased. Overall, COVID-19 led to heightened interest and actions related to the food system.

In the summer of 2021 BC experienced the highest temperatures on record for the province (49.6 C), one of the worst fire seasons, and the tragic destruction of the town of Lytton by wildfire. Then, in November 2021, BC experienced devastating flood waters that inundated the lower Fraser Valley and other communities, resulting in the loss of crops and livestock, transportation disruptions, and destruction of First Nations traditional food lands and reserve lands. These conditions set the context for the strategy update process.

The report is divided into 4 sections as described below.



Section I: Background and Context

This background and context section presents some of the foundation for the strategies and actions identified in this report. The discussion aims to cover many components of the SGI food system as laid out in Figure 1, as well as the challenges highlighted by the COVID-19 pandemic and the increasingly extreme climate events being experienced in BC.

1. Indigenous Agriculture and Food Systems

The Southern Gulf Islands are in the traditional territories of the Coast Salish people who have lived in this area for 10,000 or more years. Local Coast Salish First Nations include the Tsawout, Tseycum, Tsartlip, Pauquachin, Penelakut, Lyackson and others.

A recent review of indigenous food sovereignty in Canada describes how indigenous food systems "encompass far more than the mechanics of food production and consumption. They include all of the land, water, earth, plants and animals within the boundaries of traditional territories, and are sustained by active and reciprocal relationships to uphold responsibilities among people and the natural world." The review includes the observation that "Indigenous food sovereignty has the potential to deliver positive impacts beyond Indigenous people in Canada. Although these impacts have not yet been deeply studied, the existing research points to the potential of Indigenous food sovereignty to provide wide-ranging benefits by offering an alternative to the global industrial food system and encouraging more respectful, responsible, and sustainable interactions amongst people and the natural world. To understand and realize these benefits, policy development and decision-making should be informed by Indigenous voices, knowledge, and values while remaining sensitive to issues surrounding the extraction and exploitation of Indigenous knowledge (Muller, 2018, p. 14). This work will require renewed relationships built upon values of mutual trust, respect, and reciprocity."

Image 2: Coast Salish Territory

Regenerative agriculture is a term for agricultural practices that improve the quality of soils and the local environment rather than depleting them. As described by the Regenerative Agriculture Alliance, it is intrinsically linked with "the ancestral and long held principles practiced by Native communities around the world and backed up by modern science."

Examples of local projects to build community relationships and promote understanding of traditional Indigenous food and agriculture systems are included in this report. These projects are an inspiration for continued learning of Indigenous ways and philosophy toward food and agriculture and will benefit the community by increasing the understanding and personal responsibility for the health of our natural environment.

2. Regional Sustainability, Agriculture and Food Security Plans

Several reports and programs relevant to local food systems in the Southern Gulf Islands provide priorities and recommendations that inform and overlap with this report. Appendix 2 provides a more complete listing of food and agriculture organizations and programs.

Image 3: Potatoes, Co-op Table (Pender)

In 2016, BC's Capital Regional District (CRD) published Setting Our Table, a regional food and agriculture strategy to prepare for upcoming challenges to food resiliency including changes in climate, energy costs, and water availability. Recommendations from this report included building cross sector relationships, supporting Indigenous foodways and relationships, increasing access to farmland, and drainage, irrigation and compost issues. This CRD regional food and agriculture strategy does not apply directly to the Salt Spring Island and Southern Gulf Islands Electoral Areas, however the issues raised are relevant to the SGI and the framework anticipates and allows for potential future expanded coverage and collaboration.

Kwantlen Polytechnic University (KPU) Institute for Sustainable Food Systems works on local food systems issues and has many resources on the topic, several of which are referred to in this report. KPU's report The Future of B.C.'s Food System: Response to Findings & Recommendations of the B.C. Food Security Task Force provides recommendations and associated actions on the subjects of: protecting farmland, supporting regenerative, ecologically based farming practices, training, improving food security, strengthening regional supply chain networks, improving access to locally produced products, and supporting research and data collection.

The Capital Regional Food and Agriculture Initiatives Roundtable (CRFAIR) represents the agricultural community in the CRD region. CRFAIR's Good Food Network Report 2020 reports on local initiatives and identifies targets to improve food security and local food production and consumption. CRFAIR is supporting an initiative called "Closing the Supply Gap" whose goals include increasing the viability of small to medium scale farms, developing stronger regional supply chains and strengthening local food sector leadership. CRFAIR also supports (along with other funders) Growing Together, which is a collaboration between 20+ organizations across the region with a goal of supporting people learning how to grow their own food.

The Salt Spring Island Agricultural Alliance is an umbrella organization comprising local agriculture and food groups on Salt Spring Island (SSI). It was established in 2008 to oversee the implementation of the Salt Spring Island Area Farm Plan. Key accomplishments and recommendations for the future are described in the Farm Plan Renewal 2020-2030 report and include:

- The collaborative structure and functioning of the SSI Alliance
- Salt Spring Island Farmland Trust Society, whose activities include:
  - Burgoyne Valley Community Farm – a 60 acre (24 hectare) farm is being brought into its full potential to produce food, increase biodiversity and pollination, and protect species and waterways for the long-term benefit of the community. Organic practices are a high priority and a large year-round pond provides water for the entire farm.
  - Shaw Gardens - 77 community garden plots

- The Root is a state-of-the-art centre for food security being constructed to improve ability to produce, process, preserve and distribute locally grown food products. The functions of the facility include: quality controlled storage for local farm produce; fully-equipped processing kitchen; point of distribution for large quantities of local food year-round; Salt Spring Seed Sanctuary Seed Bank; Permaculture demonstration gardens; and training programs for youth in agriculture, chef certification, and local food education.

- The Salt Spring Abattoir is a community facility managed by the not-for-profit Salt Spring Abattoir Society. It provides custom slaughter service for both red meat and poultry and is preparing to rent land at the Burgoyne Valley Community Farm to install an in-vessel composter for processing abattoir waste.

- Xwaaqw'um Village lies across from Hwtl'upnets (Maple Bay) in Sansum Narrows, a stretch of ocean separating Vancouver Island's eastern coast and Salt Spring Island. In Hul'q'umi'num, the language of the Quw'utsun peoples, Xwaaqw'um means female merganser duck place, specifically the red-breasted merganser which congregate there year-round. Xwaaqw'um is a source for local First Nations of shellfish, plants, medicine and animals. It also serves as a significant landscape for cultural and ceremonial purposes.

3. The 2017 Southern Gulf Islands Food and Agriculture Strategy

The Southern Gulf Islands (SGI) Food and Agriculture Strategy (SGI FAS) is the foundation for this 2021 update. The report provides overviews of each of the islands, and sixteen recommended strategies with associated actions. Three supporting reports provide detailed information on land inventory and use, market opportunities, and a situation analysis that reports on history, statistics and relevant organizations. The SGI FAS and its supporting documents continue to be useful resource materials for understanding the food and agriculture system in the SGI and priorities for improvement.

Image 4: Squash, Cable Bay Farm (Galiano)

The SGI FAS recommended actions covered leadership, support for local organizations, economic development, farmland maintenance and protection, climate change and ecological farm practices, education, marketing, youth, and First Nations projects and relationships.

Appendix 3 provides a summary of the sixteen SGI FAS recommendations and identifies some relevant local projects and programs related to these recommendations. One of the central themes of this updated LAFAP is that a well defined leadership group with reliable funding is required to steer the implementation of the comprehensive set of actions identified in both the SGI FAS and this LAFAP.

4. Local SGI Organizations

This section provides an overview of the local island organizations supporting food and agricultural systems on Galiano, Mayne, Pender and Saturna.

Table 1: Summary of Local SGI Food and Agriculture Organizations and Assets

	Galiano	Mayne	Pender	Saturna	Cross SGI
Cross Island Organizations					CESC/CRC/FRA GIFC
Farmers Organizations	Farmers Institute	Agricultural Society	Farmers Institute		
Food system Organizations	Galiano Community Food Program				
Nature Conservancies	☑	☑	☑		Islands Trust Conservancy
Other food and ag organizations with more specific goals:					
Seed Library	☑	☑	☑		
Farmers' Market	☑	☑	☑	☑	
On line Farmers Market			☑		
Garden Club	☑	☑	☑		
Community Garden	☑	☑	☑	☑	
Community Kitchens	3	2	3	1	
Food Bank	☑	☑	☑	☑	
School Garden/Food	☑	☑	☑		
Annual Festivals	☑	☑	☑	☑	
Shared Equipment	Galiano Community Food Program	Agricultural Society	Farmers Institute	Community Centre	Gulf Islands Food Co-op
Local Food Grocery Stores	☑	☑	☑	☑	

Source: Gulf Islands Food Co-op 2021 Asset Inventory

The table above suggests that there is reasonably good infrastructure in place in terms of farmers' markets, seed libraries, community gardens, community kitchens and certain equipment for community sharing.

Below is a review of recent activities by local organizations, starting with three organizations that stand out as being particularly active and innovative in supporting local agriculture and food systems, and whose work helps inform this report's recommendations.

- The Gulf Islands Food Co-op (GIFC) was formed in 2017 to develop inter-island collaboration and practical projects to implement recommendations from the SGI FAS. The GIFC's role includes building relationships across the islands and Indigenous communities, increasing connections and understanding between sectors (e.g., growers and consumers), creating opportunities for relationship building and knowledge sharing among food growers (e.g., soil health) and among food organizations. Several GIFC reports are discussed further below and are provided in the Reports Appendix.

- The Galiano Community Food Program (GCFP) started in 2008 and continues to create links with on-island, as well as off-island, organizations through events, workshops, food growing initiatives and educational opportunities. It has led innovative food system projects that could be models for future work on other islands or inter-island collaboration. Several of these projects are referenced below and help inform recommended actions.

- The Pender Island Farmers Institute (PIFI) has existed for close to 100 years and provides many services to farmers including a shared facility (the Barn) which houses shared storage equipment and provides a location for mid-week marketing. PIFI has arranged federal funding to hire farm apprentices and encourages farmers to work cooperatively to hire and share labour for their needs. PIFI holds workshops, including two recent water workshops on Keyline Design for water catchment and storage, and on water licensing, irrigation methods, and water storage. PIFI advocated for the new meat regulation changes, which now allows for a farmgate license allowing for local processing (see more in Farmers Perspectives Section). More information about PIFI's activities is provided below.

Farmers' Markets: All islands have regular Saturday farmers' markets that run from late spring to early fall. Pender Island also has a Wednesday food only farmers' market, a weekly Saturday Winter market, and an online farmers' market. Galiano's GCFP runs a single fall Stock Up Market for storable crops (e.g., squash, potatoes, apples) where consumers can stock up for winter. Mayne's farmers' market holds an annual apple festival on the last market day of the year. PIFI has obtained federal infrastructure funding for freezer and refrigerator storage to help facilitate on island meat sales.

BC runs a Farmers' Market Nutrition Coupon program that provides farmers' market coupons ($21/week or more) to lower-income families, pregnant people and seniors at markets that are members of the BC Association of Farmers' Markets. Pender Island is part of this program, but at time of writing Mayne, Galiano and Saturna's markets are not because their markets include too high a percentage of non-agricultural sales to qualify.

Food Related Festivals and other Annual Community Events: COVID-19 led to a cancellation or reduction in festivals and community events across the islands. Long standing food and agricultural related festivals that have continued at some level during the pandemic, or that are expected to start up again include: Fall Fairs on all the Islands, Saturna's Canada Day Lamb Barbeque, Pender Island's "Crisp" Apple Festival, Mayne's Apple Festival, Galiano's Nettle and Blackberry Festivals.

Local Food Grocers: Each island has at least one grocery store with a strong focus on selling local organic produce, including Galiano's Daystar Market, Mayne's Farm Gate Store, Pender's Southridge Country Store, and Saturna's General Store.

Food Banks and Other Food Programs (e.g., Meals on Wheels): Each island has several programs to provide food to those in the community needing assistance. The Galiano Community Food Program runs a food bank once a week in partnership with St. Margaret of Scotland church, and frequent soup and bread lunches, monthly dinner and games night (pre-COVID), and frozen meal service. Mayne Island Food Bank provides food hampers to residents in need twice monthly, and Mayne Island Assisted Living provides meals on wheels and other assistance. Pender's Food Bank runs a weekly hamper service, and there is a weekly community soup lunch. Saturna Island runs a weekly Food Bag Program and Soup for Seniors every two weeks.

These programs are largely volunteer run. Communication and collaboration amongst the island's food banks is growing as discussed in the Section 3 review of the FRA Roundtable on Food Banks. There are opportunities to improve linkages between food banks, community 'by donation' food programs, and local farmers.

Seed Libraries: Galiano, Mayne and Pender have established Seed Libraries and Saturna has taken initial steps toward a community seed resource. The Mayne Island Seed Hub and the Seed Library of Galiano each have websites where seeds can be ordered on line. The Pender Seed Library was started in 2021 by the Gulf Islands Food Co-op and is housed in the Pender Island Public Library. Galiano also uses their local library to house the seed library. On Mayne, the seed library is currently housed by a volunteer but is looking for a more permanent location.

The GIFC is coordinating discussions and events to increase collaboration and effectiveness of these seed libraries. Opportunities for future development include more inter-island exchanges of seeds in surplus, creating connections with Indigenous communities to share seeds, and development of best practices to select, store, catalogue and share seeds. The libraries are volunteer run and mainly focus on food plant seeds.

Community Gardens: All islands have community gardening options. Galiano has a community garden at Lions Field and a garden and greenhouse located at the school, a garlic growing collective (see Section II for more info), as well as both a Community Food Forest and the Nuts'a'maat Forage Forest[1]. The Mayne Island Community Garden is located at the Mayne Island Community Centre. Members can rent a 4'x12' plot for $20/year. The garden is organic, with stored rainwater for irrigation. The Pender Island Organic Community Garden Society has 24 plots on an area leased from a working livestock farm, fully irrigated by ponds on the farm, where the annual cost of a 20'x20' plot is $55. A Facebook page is used to share practices and outcomes. Highgrove Farm on Pender Island also hosts the Bean Collective, which is a collaborative effort to grow bulk amounts of drying beans. Saturna's Immunity Garden was created during COVID-19 and supplies the Food Bag Program and community dinners.

Community Kitchens: All islands have kitchens located in community halls, churches or service organization buildings. These facilities range in quality from minimal to state of the art commercial kitchens. Community programs use these kitchens for community meals and other events. Some of these kitchens are Island Health approved for commercial food production and some are not.

Shared Equipment: The Gulf Islands Food Co-op has large food dehydrators and pressure canners available on Pender, Mayne and Saturna Island. The Pender Island Farmers Institute has fridges and freezers in the Barn for growers to store products. Pender Island also has a dehydrator, orchard ladders, picking baskets and an apple press available for sharing through the Pender Island Community

[1] A co-operative project of members of the Penelakut First Nation, Galiano Conservancy Association and Access to Media Education Society.

Farmland Acquisition Project Society. On Mayne there is a community apple press and related equipment used in the annual apple festival. The Galiano Community Food Program has a good inventory of canning and preserving equipment it provides on loan, orchard ladders and gleaning equipment, and an apple press. Appropriate storage and maintenance of these community shared assets has been identified as a challenge.

School Gardens: Gulf Islands School District 64 (includes Salt Spring) has a school garden in each of its 10 schools. In 2021, updated Case Studies for each school were prepared and shared. These case studies document the history and design of the gardens, (which include innovative and demonstration projects such as water conservation projects, cob structures, pizza ovens), as well as the ways the gardens are used for school and community learning and as a food source. Fruit trees, berry bushes, raised beds and greenhouses are part of most of the school gardens.

In addition to school gardens, a few SGI schools participate in BC's Farm to School program where fresh fruits and vegetables are made available to the children.

Garden Clubs: The Mayne Island Garden Club is a general interest group who meet monthly. Their website provides detailed information on sources for starts, seeds, manure and other inputs and services on Mayne Island. The Galiano Garden Club and Pender Island Garden Club also meet monthly but are not necessarily food focussed.

Nature Conservancies: Galiano, Mayne and Pender each have nature conservancy organizations that provide services and advice related to local wildlife, species at risk, habitat restoration, invasive species removal and educational programs. In addition, the Islands Trust Conservancy has been entrusted with the protection of 110 private properties, and holds conservation covenants with other private landowners, for a total of almost 15,500 hectares (38,300 acres) protected, of which 2,906 hectares (7,180 acres) are on the Southern Gulf Islands.

Indigenous Food and Agriculture projects:

- Nuts'a'maat Forage Forest: "an ecocultural restoration project that reimagines the relationships we can have with damaged ecologies and with one another as we work together on the land. It is a shared space where we are restoring and caring for an indigenous forest ecosystem that provides us with a diversity of important foods and medicines." is a collaboration between the Galiano Conservancy (GCA), Access to Media Education Society (AMES), members of the Penelakut First Nation, and the Galiano community.

- GIFC Honouring Indigenous Food Creation and Practices In the spring of 2019, the GIFC hosted events on Pender and Saturna where First Nations Elders joined a group of islanders to make pink soapberry "ice cream" and bannock, and teach indigenous food practices including the Thirteen Moon Calendar showing W SÁNEĆ foods, and times of the year for gathering or creating them.

- The Feed the People Workshop organized by the Galiano Conservancy Association, the Galiano Community Food Program and the Access to Media Society, is an opportunity to learn how to process deer for local food resilience from Penelakut Elders. The 3rd annual hands-on workshop was held in November 2021 and covered topics including how to skin, debone, cube, grind, and bag venison for freezing as well as sausage making and canning to preserve venison in a food-safe manner.

- Clam Gardens: In 2014, the W̱SÁNEĆ people entered a partnership with Parks Canada with the goal of creating and implementing a project that would ecologically and culturally rebuild two clam gardens in the Gulf Islands National Park Reserve (GINPR) situated in W̱SÁNEĆ territory. This project ran for 5 years. A comprehensive final report provides many insights into this cooperative project.

- A new seaweed farming project on James island near Sidney BC (described below under Innovation) is a commercial venture between the Tsawout First Nation and Cascadia Seaweed.

Three related cross-island organizations provide opportunities for collaboration and 'strength in numbers' when applying for government programming or regulation changes. The Southern Gulf Islands Community Economic Sustainability Commission and the Southern Gulf Islands Community Resource Centre work across the island economies to provide advice and services, and the newly formed Southern Gulf Islands Food Resilience Alliance focusses on cross island food and agriculture system improvements.

5. Environmental Context

Climate change and COVID-19 emergencies have challenged all components of the agriculture and food system and underlined the importance of a strong, ecologically sound, local based, food and agriculture system.

a) Climate Change Crisis

The latest report from the International Panel on Climate Change (IPCC), released in August 2021, reports on the physical evidence of global warming, climate projections based on alternative assumptions about human greenhouse gas and CO_2 emissions, and how to limit human induced climate change. Climate projections from the IPCC show that even if emissions from human activity are reduced substantially, we can still expect global temperatures to rise by 1.5 to 2 degrees over the next 3 decades. After that point, the projected temperature increases depend upon whether emissions from human activity are reduced and by how much. Dr. Andrew Weaver, lead author in the United Nations Intergovernmental Panel on Climate Change 2nd, 3rd, 4th and 5th scientific assessments, has stated that a "minimum 3 degree rise in global temperature is the best-case scenario that may be achievable". (Dr. Andrew Weaver, September 27, 2021 RegenBC Virtual Conference, Ministry of Agriculture, Food and Fisheries)

Three aspects of the climate change issue are discussed here:

i. Impact on weather and implications for farms
ii. Farming practices to reduce emissions and increase carbon capture
iii. Consumer food choices can help reduce emissions

> "The IPCC always understates the risk and always overstates how much time remains to avoid the worst. And because the final report is edited line by line by governments, the statement of the worst-case scenario is edited out or watered down. Thus, we knew that early drafts of the October 2018 Special Report on 1.5 degrees C had included the risk of runaway global warming. The early drafts set out that failing to meet Paris Agreement targets of holding to as far below 2 degrees C as possible, and preferably to 1.5 degrees C global average temperature rise, could lead to unstoppable self-accelerating warming that could make the planet uninhabitable" (Elizabeth May, 2021)

i. Weather impacts and Implications for farms

The projected effects of climate change on agriculture range widely and are significant as shown in Table 1 of the 2020 Vancouver Island Adaptations Strategy Plan (Appendix 4). The Islands Trust climate report released in March 2020 summarizes expected climate change impacts and implications for local ecosystems and agriculture. For the Southern Gulf Islands, climate change will bring about increases in temperature in all seasons and in Growing Degree Days (GDDs), decreases in summer rains, increases in winter rains and storms, and decreases in the days with frost.

Potential impacts to agriculture identified in these reports include:

- Risks to productivity and quality of crops and livestock under water stress during summer
- Increased need for water storage and irrigation
- Increased risk to water quality (e.g., algal blooms)
- Interruptions to plantings, potential disruptions to pollination, shift of growing seasons
- Increase in excessive moisture, winter flood risk, nutrient and input leaching, and loss of water for infiltration and recharge of aquifers
- Increased pest and invasive species problems
- Risks to soil structure, erosion and micro-organisms

These impacts are already beginning to be felt. As SGI farmers prepare for warmer and more variable climate, they will need to make changes affecting crop/variety selection, seasonal water and summer shade management, to ensure pollination, etc.

ii. Farm practices to reduce emissions and increase carbon capture

In addition to farm adjustments to adapt to the impacts of climate change, farm practices can be changed to reduce greenhouse gas (GHG) emissions, increase carbon capture, and help slow global warming. The Canadian organization, Farmers for Climate Solutions, states "increasing biodiversity, improving soil health and fostering healthy ecosystems on farms can reduce GHG emissions, increase carbon sequestration, and improve farmer livelihoods by decreasing the need for purchased inputs and increasing resilience during weather extremes."

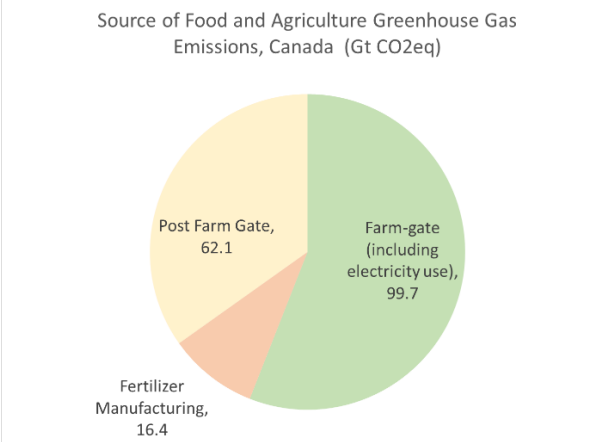
The United Nations Food and Agriculture Organization (FAO) studies world food supply and demand. FAO has recently summarized estimates of greenhouse gas and carbon dioxide (CO_2) emissions from agriculture and food systems around the world. In addition, the CRD, Saanich and Salt Spring Island have all estimated emissions for their local areas. While the exact numbers reported for emissions depend on the methods and assumptions used, these reports give insights into the level of emissions from different components of the food and agriculture system.

To give a sense of where in the food chain GHG emissions are generated, FAO estimates for Canada are shown in the pie chart below[2]. This chart shows emissions from farm activities account for about 56% of agriculture and food system related emissions. Fertilizer manufacturing accounts for about 9%, and the remaining 35% comes from the food supply chain. Transition Salt Spring estimates that food grown

[2] Note the FAO report shows a high emission number for "land use changes" related to agriculture in Canada. This may be related to forestry in Canada, but has been dropped from this report for ease of discussion. Data behind the charts is provided in Appendix 5.

on Salt Spring is not GHG Intensive because there is no large-scale industrial agriculture, no feedlots, little mechanization and most farms use climate friendly organic and regenerative practices.

Figure 2: Canada Food and Agriculture Emissions



Source: FAO

History has shown that agricultural practices can degrade ecosystems. Where this has happened, we need to shift practices to repair soils damaged by compaction and loss of nutrients caused by intensive agricultural practices, and to reduce the use of harmful chemical fertilizers, herbicides and pesticides. "Organic" is a protected label in BC with a number of certification bodies. A move to organic certification will encourage the use of regenerative practices, however it is a prohibitively expensive venture for some small farms. Island Organic Producers Association (IOPA) certifies farms on Vancouver Island and surrounding islands since 1990. Organic BC has created an online tool for organic certification application and renewal.

Regenerative farming methods include cover cropping and mulching, planting deep-rooted and perennial crops, organic, reduced till and no-till methods, pasture management systems such as rotational grazing and deep-rooted forage crops, field edge hedgerows, biochar application, recycling of farm waste, food forests, and permaculture techniques that work with nature to mimic natural systems. Indigenous knowledge is clearly relevant in informing best local practices for regenerative agriculture.
Due to their small, diverse and often organic nature, farms in the Southern Gulf Islands are already employing a number of climate friendly farm practices or are moving to adopt more of them. The BC government is making a major commitment to assist farmers in transitioning to regenerative agricultural practices (News Release, July 28, 2021).

> "The Province is establishing the Regenerative Agriculture and Agritech Network (RAAN) to drive transformation and modernization in the agriculture sector.
>
> ...
>
> The regenerative approach covers new and existing technologies that aim to restore soils, water and biodiversity health to improve overall ecosystem services and make farmland more resilient to climate change.
>
> Agritech, in support of regenerative agriculture, will also mitigate climate change by sequestering greenhouse gases and reducing on-farm outputs.
>
> The RAAN will facilitate the necessary collaboration with farmers, producers, industry and academia to address major challenges, such as the increased cost of resources for food production (e.g., land and water), labour shortages and the impacts of climate change." (Regen BC News Release and Backgrounder, Regen BC Workshop)

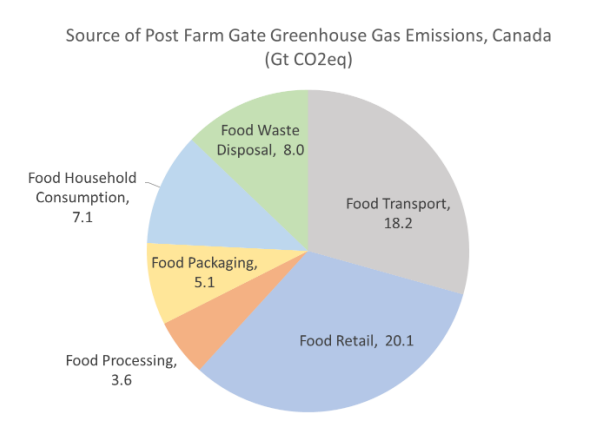
iii. Consumer Food Choices Can Help Lower Emissions

FAO estimates that food and agriculture systems account for about 30% of global emissions. Salt Spring Island estimates that 40% of its GHG emissions are related to food consumption. Saanich estimates about 20% of its residents' carbon footprint is from food. These differing estimates largely reflect different assumptions in methodology, but they all indicate the agriculture and food system is a significant component of communities' emissions. The

Saanich website provides an easy to use calculator for individuals to determine their own carbon footprint, as well as estimates of the GHG emissions associated with different food items.

Figure 3[3] shows that Food Transport and Food Retailing (e.g., refrigeration) each account for about 30% of Canadian post farm gate emissions, and Food Waste accounts for another 18%. Reducing off-island food imports through increased sales from island stores and farms as well as increased produce from home gardens can help to reduce the overall GHG emissions of the SGI community and improve food security and resilience.

Figure 3: Canada Post Farm Gate Emissions



Source: FAO

Reduced food waste and improved use of waste to produce compost are other ways to reduce emissions from the food system. The Galiano Conservancy's One Island, One Earth project is estimating food consumption and waste volumes for Galiano island. The results will be reported in 2022.

b) COVID-19

Upon the first onset of the COVID-19 pandemic, as most businesses and many services were on hold, the SGICESC and the SGICRC engaged with Southern Gulf Islanders to assess what was needed and produced a report summarizing their findings. The Galiano Community Food Program also collected information and produced a report on the impacts of the pandemic on local food and agriculture specifically (see Section II.2).

COVID-19 impacts to SGI food and agriculture system identified in these engagements include:

- Early difficulties with messaging to potential visitors
- Early difficulties knowing how to adjust protocols to improve safety, and accessing equipment required
- Reduced ferry service
- Disruption in supply chains (e.g., for farmers, seed shortages)
- Fewer visitors and decrease in consumer spending
- Many businesses were able to stay in operation, but scaled back
- Restaurants shifted to provide takeout
- Online shopping and delivery/pick up increased
- More interest in locally grown food, including back yard gardening
- Cancellation or scale-back of many community events, including festivals and farmers' markets

[3] Table of supporting data is in Appendix 5

6. Metrics

This section updates and adds to the information base for SGI food and agricultural systems presented in the 2017 SGI FAS using the 2021 GIFC Asset Inventory report, the 2016 census, and information from various reports as referenced. The discussion begins with information on food consumption and distribution, and then covers farm related information on number of farms, land and other input use, farm practices and farm income.

a) Estimates of SGI Food Consumption by Source

This section looks at various estimates of how much gulf islanders are currently consuming locally grown food. The 2017 Market Opportunities Report stated that the SGI region has "currently only 3% self-sufficiency in food, indicating copious room for the agricultural sector to expand in terms of production to meet local food needs." This estimate of 3% was constructed by comparing the area of irrigated farmland in the SGI with an estimate of land requirements to feed SGI residents[4].

As a whole, BC has food self-sufficiency in the order of 40-50%. The BC Ministry of Agriculture report on B.C.'s Food Self Reliance estimated that 48% of BC's food production was consumed in B.C.. Kwantlen Polytechnic University (KPU) performed a detailed study of food self-reliance for southwest BC. Their method compared the amount of the population's diet that could theoretically be satisfied by locally produced food by comparing the quantity and types of foods produced in the region to those consumed there. This report estimated that southwest BC was 40% food self-reliant in 2011, but only 12% if excluding livestock raised with imported feed.

Image 5: Edible Flowers, Lettuce and Zucchini, Hardscrabble Farm (Mayne)

The Galiano Conservancy's One Island, One Earth project collected detailed information on food consumption on Galiano in 2021 and will be publishing a report in 2022. This report is expected to provide an estimate of the share of food consumption on Galiano sourced from Galiano growers. The table below is based on a similar table prepared by KPU. SGI estimated food requirements were based on KPU estimates for Southwestern BC, multiplied by Gulf Island resident and estimated visitor populations. Production quantities for the SGI are rough estimates based on the crop acreages reported

[4] Estimate assumes 0.524 hectares is required to feed one person.

in the Land Use Study, livestock numbers from the 2016 census, and provincial average yields. The numbers in the table are rough estimates for both consumption and production, and abstract from seasonal supply and demand movements. In the case of vegetables, the 92% estimate of self-sufficiency likely reflects an overestimate of current SGI production. While rough, the information does add confidence to knowledge that the SGI are partially self-sufficient in eggs and vegetables, have a surplus of tree fruits relative to local needs on an annual basis, and are close to 100% importers of grains, fats and oils, pulses, and meat. Seafood was not included in the KPU study but should be considered if future work is undertaken to refine these estimates.

Table 2: Rough Estimate of Southern Gulf Islands Food Self Sufficiency

	Estimated requirements per person	Estimated requirements total residents and visitors	Estimated SGI production	Estimated self sufficiency
Measure	kg/person/year	tonnes/year	tonnes/year	
Vegetables	216	1,379	1,266	92%
Fruit	155	990	2,608	264%
Grain	78	499	-	0%
Fats and Oils	65	417	-	0%
Pulses	5	32		
Eggs	14	89	20.3	23%
Poultry	39	246	~0	~0%
Red Meat	55	348	14.6	4%
lamb			5.7	
beef			8.9	
pork			-	
Dairy	40	255	-	0%
Total	668	4,256	3,924	

Sources and Notes:

- Per Capita food consumption estimates from KPU study on Southwest BC Food self sufficiency, with dairy numbers from Stats Can food availability data. Food requirements per person are gross amounts, including amounts for waste and other losses.
- Population: 4732 full time residents from 2016 census plus 300,000 visits from 2008 SGI tourism study (weekenders and others). Assume average 2 days per visit means visitors equivalent to 1644 full time residents.
- Fruit and vegetable production estimated using SGI acreage in fruit and veg from 2017 land use inventory, multiplied by 80% of BC average yields for fruit and vegetable. Livestock production estimated using census information on number of animals and average yields per animal.

Image 6: Garlic Planting (Galiano)

Another method to get a rough idea of the SGI food self-sufficiency is to compare estimated consumer spending on food (Statistics Canada estimates about $10,000 per household per year in BC), with total reported farm revenues for the SGI (roughly $1.5 million in 2016). The number of 'households' on the SGI, including an adjustment for visitors, is roughly 2,625. If each household spends $10,000 on food, the total food spending for SGI amounts to $26 million. Farm revenue of $1.5 million represents 6% of total spending.

The GIFC Asset Inventory report identified close to 100 different food retailers on the islands, ranging from seasonal Farm Stands and home processors and caterers to full-service Restaurants and Wineries. More information about how much grocery stores and restaurants source their food from local sources, as well as how much individual islanders purchase food off island will improve understanding of the SGI food system.

Table 3: Southern Gulf Islands Food and Drink Sales Venues

		Galiano	Mayne	Pender	Saturna	SGI
Farm Stands	#	8	8	16	2	34
Grocery Stores	#	5	5	2	1	13
Pubs/Restaurants/Cafes	#	13	4	13	3	33
Food Trucks	#	3	2	4	0	7
Coffee Roaster	#	1	1	0	1	3
Winery/Cidery/Brewery	#	0	1	2	0	3
Total estimate of operations selling food	**#**	**30**	**21**	**37**	**7**	**93**

Source: Preliminary data From GIFC Asset Inventory Report
Note: Home Processors and Caterers data still under review and not included in these totals.

b) Area being farmed, number of farms and number of farmers

Farm census data on farm acreage in the SGI shows declines over 2006-2016 in farm acreage, farm numbers and number of farmers[5]. The reported loss in farm acreage can be attributed to the loss of a single very large farm (>1600 acres) that was reported in 2006, but not in later years, as well as declines in the number of mid-sized farms in the 10 - 400 acre (4-162 hectares) size range. The small sample for SGI can lead to wide swings in observed trends, and a higher risk that data anomalies can skew results. However, the loss in mid-sized farms over 2006-2016 shown by this data is concerning.

Table 4: Farm Census Data on Farm Acreage, Number of Farms and Farmers

	2006	2011	2016	% change from 2006
Total Farm acreage (acres)	7,186	5,531	4,611	-36%
# Farms	89	82	77	-13%
<10 acres	21	18	22	
10-70 acres	49	45	41	
70-400 acres	16	17	12	
400-1600 acres	2	2	2	
>1600 acres	1	0	0	
# Farmers	135	130	115	-15%
Average Farmer age	57.1	59.5	59.2	4%

Source: Statistics Canada Farm Census for Southern Gulf Islands (Does not include Salt Spring)

A deeper look at the area of land being farmed was developed in the Land Use Inventory produced as part of the SGI FAS. The Land Use Inventory study began with Agricultural Land Reserve (ALR) information and added information from direct observations to develop a detailed summary of land use in the SGI. It is probably the most accurate estimate of area being farmed but does not provide information on trends.

This data, reported below, shows 3,894 acres (1,576 ha) of ALR land in the Southern Gulf Islands, of which about 30% is being farmed. In addition, 321 acres (130 ha) of non-ALR land was identified as being farmed. Of the total 1,478 acres[6] (600 hectares) that was identified as being actively farmed, 1,258 acres (509 ha) (85%) was in forage and pasture, and the remainder was split fairly evenly between tree fruits, grapes, vegetables and other crops.

Image 7: Bok Choy, Raven Rock Farm (Pender)

[5] Farm census data for the SGI region is available for 2006, 2011 and 2016. 2021 information will begin to be available in 2022.

[6] Note that this estimate of 1,478 acres being farmed is about one third of the acreage reported in farms in the census data – this data difference can impact estimates of production based on farm acreage.

Table 5: ALR and non-ALR Land being Farmed in the Southern Gulf Islands (acres)

	Galiano	Mayne	Pender	Saturna	Total SGI
Land area in ALR	**919**	**786**	**1,243**	**946**	**3,894**
ALR being farmed	116	410	413	217	1,156
% ALR being farmed	13%	52%	33%	23%	30%
non-ALR being farmed	57	89	158	17	321
Total land being farmed	**173**	**499**	**571**	**235**	**1,478**
Forage and Pasture	136	457	484	180	1,258
Tree Fruits	7	15	25	5	52
Grapes	-	-	15	44	59
Vegetables	17	12	17	-	47
Other crops (berries, nuts, etc.)	5	2	17	2	27
Other	7	12	12	2	35

Source: 2014 Land Use Inventory report; totals may not add due to rounding.

2022 BC Assessment data shows over 100 SGI properties at least partially classified as farms for property tax assessment purposes. Most of these properties are classed as a mix of farm and residential by BC Assessment. Contrary to the Canadian census data which shows a decline in the number of SGI farms between 2006 and 2016 (Table 4), the BC Assessment data (Table 6) shows an increase in the number of properties classified as farm for property tax purposes. As land values in the SGI increase, there is more incentive to apply for and achieve farm status for property tax purposes from BC Assessment. BC Assessment also reports the size of each property classified as farm. Table 6 shows that about 4,000 acres in the SGI are in properties classified as farm by BC Assessment.

Table 6: BC Assessment Data for Properties Classified as Farms in the Southern Gulf Islands

	2007	2012	2017	2022	% change 2007-2022
Number of Farm properties					
Total	**99**	**95**	**109**	**113**	**14%**
Galiano	16	16	22	23	44%
Mayne	25	25	24	22	-12%
Pender	45	40	47	54	20%
Saturna	13	14	16	14	8%
Area of Farm properties (acres)					
Total	**4,164**	**3,595**	**3,924**	**3,912**	**-6%**
Galiano	789	490	537	542	-31%
Mayne	1,082	1,090	1,028	895	-17%
Pender	1,495	1,250	1,508	1,670	12%
Saturna	797	765	851	804	1%

Source: Custom data request from BC Assessment
Note: BC Assessment data shows number of farm properties. In some cases SGI farms contain more than one property as defined by BC Assessment. Totals may not add due to rounding.

The GIFC Asset Inventory report identified 114 SGI food growers ranging from large farms to individuals who sell small amounts of produce. The report and supporting database provide a framework and preliminary information to describe SGI farms and are described in more detail in Section II.

c) Farm Profitability – census data

The 2017 SGI FAS showed that SGI farm profitability as measured by the census is negative, and lower than other regions in BC. Updated census data for 2016 shows a similar outcome (Table 7). The census data should be used with caution due to the small size of the SGI sample, but the data suggests the following:

- Total farm revenue is in the $1-2 million range.
- Total farm expenses are also in the $1-2 million range.
- In each year, farm expenses are larger than farm revenue leading to a negative gross margin.
- About 60% of farms have gross revenue of less than $10,000, another 20% have gross revenue in the $10-25,000 range, and the remaining 20% have higher gross revenue.
- Farm capital averages about $1.4 million per farm in 2016, and is mainly in the land as is common in many regions.
- 48 out of 77 farms reported owning a tractor in 2016
- Almost 50% of SGI farmers work less than 20 hours per week on the farm, and about 30% work more than 30 hours per week.
- Off farm work is reported for about half of SGI farmers, with 35% reporting more than 20 hours per week in off farm work.
- 19 farms reported hiring labour on a full, part time or seasonal basis in 2016, totalling 44 employees.

Image 8: Basil, Cable Bay Farm (Galiano)

The 2020 GCFP Wider Lens report found that most Galiano farmers receive less than 15% of their income from farming.

Image 9: Strawberries, Blueberries, Plums, Raven Rock Farm (Pender)

Table 7: Southern Gulf Islands Farm Business Statistics from Stats Canada Census

		2006	2011	2016
# Farms		89	82	77
Gross Revenue	$ million	1.1	2.1	1.5
Operating Expenses		1.2	2.4	1.7
Gross Margin		-6%	-15%	-16%
Share of Farms by Revenue Class				
<$10,000		70%	60%	61%
$10,000 - $25,000		18%	21%	22%
$25,000 - $50,000		4%	11%	5%
$50,000 - $100,000		6%	4%	8%
> $100,000		2%	5%	4%
Farm Capital	$ millions			
Total		77.6	119.2	110.8
Land and Buildings		74.2	114.0	106.6
Machinery and Equipment		2.8	4.6	3.4
Livestock and Poultry		0.6	0.6	0.8
Machinery Value	$ millions			
Tractors		0.8	1.6	1.3
number of farms reporting tractors		63	62	48
Other Vehicles		0.9	x	0.8
Other Machinery and Equipment		1.1	x	1.3
Operator hours worked per week				
Less than 20 hours		x	46%	48%
20 to 29 hours		x	23%	22%
30 to 40 hours		x	15%	17%
More than 40 hours		x	15%	17%
Hired Labour				
Number of farms reporting full or part time employees			26	19
Number of Employees			61	44

Source: Statistics Canada Farm Census
X = not reported;
Totals may not add due to rounding.

4. Components of SGI Farm Revenue: Product Mix, Sales Volume, Prices and Margins

This section looks at how price information helps the local food system, what price related information for SGI food is readily available, and some possibilities for collecting more information. Improved information on SGI sales and pricing for food can strengthen the local food system by providing better information to all participants. Farmers can use information to help set their own prices for different markets (e.g., direct to consumer versus 'wholesale' to restaurants or groceries), and in deciding which crops have the best returns. Consumers including local restaurants can better understand the relative costs of local versus imported food. Prospective food processors can compare raw input costs and expected product prices to determine feasibility of developing products for sale.

A few provincial or wider regional price lists are available to get a sense of prices being charged for local and organic produce in BC. Organic BC publishes a monthly price sheet for many local products that "helps growers sell without overcharging and losing sales, or worse, undercharging and eroding the market price for other growers." Discovery Organics also produces regular price sheets.

The GIFC Co-op tables at farmers' markets collected information on products sold and total value of sales. The complete report is in the separate Reports Appendix, a brief summary shows total co-op table sales over the season ranged from $5,000 on Mayne Island to almost $10,000 on Pender.

- The Galiano table featured 12 different growers over July 3 to October 9 (15 weeks) selling vegetables, greens, berries, fruit, flowers, herbs, eggs, and value-added products (dried herbs and ginger beer), for total sales of $8,725.
- The Mayne table featured 10 different growers over July 3 to October 9 (15 weeks) selling vegetables, greens, berries, fruit, flowers, mushrooms, herbs, eggs and value-added products (herbal tea and pickled walnuts), for total sales of $5,082.
- The Pender table featured 12 different growers over May 15 to October 23 (22 weeks) selling vegetables, greens, berries, fruit, flowers, herbs, eggs and value-added products (herbal tea and jam), for total sales of $9,666.

The South Island FarmHub is an on-line shopping forum that sells local produce in the Victoria area. It could be a source of price information. The mark-up that they charge to producers is 30% to off-island retailers and are proposing 20% for a Galiano satellite. In early March 2022, products included stinging nettle tops (1/4 lb for $4.73), apples, frozen blueberries, dried juniper berries and onions from Mitchell's Farm.

Each island also has grocers who sell local products. Information on the products, sources, volumes, prices and mark-ups for the local produce in these stores has not been collected but would be useful information in assessing prospects for increased sales of local food in grocery stores. The GCFP's Meet your Maker project (see Section II) provided a window into some of these questions. A repeat of this project on other islands could help answer some of the outstanding questions.

Examples of information on product mix, volumes sold, prices and margins include:

- What are the products and prices at SGI farm gate stands and farmers' markets?
- What do/would local grocery stores charge for a mark-up on local produce?
- How does the price for local produce compare with most affordable imports in grocery stores (organic and non-organic)?
- What could local restaurants pay for local produce?
- Need to account for seasonal trends in production and consumption.

- Improve understanding of the role of seasonal visitors in the SGI food system by estimating how much of the food dollars spent in our communities are spent by visitors. Does it differ at restaurants versus farmers' markets?

5. Farm Expenses and Farm Practices

Farm practices can affect both farm expenses and profitability and can influence carbon capture and emissions from the farm as discussed above. Census data on farm practices for the SGI compared with the BC Coast and provincial averages shows a number of trends[7].

- An increase in SGI low till farming practice between 2011 and 2016
- The reported practice of a number of environmentally friendly practices such as rotational grazing, winter cover crops and shelterbelts is higher in the SGI than the BC coast and provincial averages.
- The SGI has lower commercial herbicide, insecticide, fungicide and fertilizer use than BC Coast or provincial average.
- Higher use of lime in SGI than other regions indicating treatment for acidic soils.
- Higher use of manure on SGI than other regions.

These stats tend to confirm the common perception that food growing practices on SGI are more organic and sustainable than many other farms in BC. However, more information and adoption of practices to increase soil health and sequester carbon could improve farm productivity and profitability.

7. Innovation in Agriculture and Food

This Section reports on innovation and the future of food and agriculture systems. Here we look at some high-tech innovations available to agriculture, as well as "retro-innovations" of seaweed farming and eco-gastronomy. Some of the content in this Section was gleaned from webinars and virtual conferences listed in Appendix 8. Expense of some of these new innovations may be beyond what many small farms can afford.

In 2020, the BC Government appointed Food Security Task Force released its report The Future of B.C.'s Food System. The report provides 4 recommendations and associated actions to advance the use of technology to support food security and profitability of food production in B.C.[8]. Examples of actions from the report include identifying areas for investment in agricultural technologies, supporting opportunities for rapid technology development and commercialization, support technologies aimed at halving B.C.'s food waste along the province's entire food supply chain, develop educational networks and an incubator-accelerator program for agri-tech start-ups, allocate a small portion of the Province's Agricultural Land Reserve (ALR) for "agricultural-industrial" activities.

Identified components of Agri-tech that could be explored for relevance to SGI include the latest technologies related to indoor and vertical growing in hydroponic, aeroponic or aquaponic systems (e.g. CubicFarm Systems Inc., Growcer Container Farming,), increased use of sensor technology to monitor soil moisture and pH levels (e.g., Skaha Remote Sensing), autonomous watering and other management systems, agricultural genomics, innovative food processing techniques (e.g. plant based meat and dairy

[7] See Appendix 5 for detailed table

[8] Note that KPU had serious concerns about the focus of the task force report and provided a response in March 2020 that emphasizes the importance of sustainable and regenerative farm practices to maintain B.C.'s farm sector resilience.

substitutes), innovative waste technology systems, high tech pest management systems (e.g. Semios and Terramera)

Container Agriculture or Controlled Environment Agriculture can be used to produce traditional crops like farm greens, as well as more innovative crops such as insects and aquatic species (brine shrimp, fish). Growcer is a Canadian company that manufactures containers for agricultural uses. They also provide suggestions for community 'social venture' projects using their containers such as the Gitmaxmak'ay Nisga'a Society (GNS) in the Prince Rupert and Port Edward area who are using a container system to grow buttercrunch and romaine lettuce, spinach, microgreens, basil and cilantro, which are to be distributed through weekly subscription boxes.

Seaweed farming is poised to become a new local food source in BC. In November 2021 the Tsawout First Nation issued a license to allow Cascadia Seaweed to farm seaweed off James Island near Sidney BC. The farm, covering an area 165 metres by 330 metres, will be located halfway up the island just off its western shore facing the Saanich Peninsula. Benefits of seaweed farming include food for humans and animals, fertilizer/compost, plastic alternative, biofuel, sequesters carbon, creates ecosystem nursery for fish and invertebrates, no artificial inputs needed, low barrier entry business, creates green jobs, is regenerative when combined with polyculture (raising shellfish with the seaweed). Barriers to seaweed farming include regulatory frameworks, environmental safety, lack of public awareness/support, limited processing facilities, and public acceptance of seaweed farms along the coast.

Eco-gastronomy is a term that came out of the Slow Food movement to recognize the fact that our food choices have a major impact on the health of the environment and society. The University of Victoria School of Environmental Studies has developed an eco-gastronomy research group to explore these issues and the concept that sustainability lies not in greater efficiency through the adoption of ever greater commoditization, but rather through aligning short term personal benefits with longer term collective benefits. This work can be informed by indigenous knowledge, and can inform buy local initiatives through exploration of increased recognition for local 'terroir' (a physical manifestation of culture and place), and geographical indicators (GIs) which specify a product's origin. Currently 26 GIs are recognized in Canada, including one for the BC Gulf Islands.

Voluntary carbon offset programs are increasingly working with agriculture to produce and sell carbon credits. Alberta Agriculture has been working on programs for Alberta farmers, and ALUS is working with farmers in several provinces. The BC government purchases carbon offsets from various activities, but does not appear to support agriculture related offsets yet.

Section II: Community Engagement

This section has three main components:

1) A description of the practical, grass roots engagement approach taken in 2021
2) More detailed descriptions of several of the 2021 engagement projects and their results:
    a. Gulf Islands Food Co-op Assets Inventory Project
    b. Galiano Community Food Program 'Wider Lens' and 'Meet Your Maker' Projects
    c. Education and Outreach Projects
3) A summary of SGI farmer perspectives on challenges and priorities from several sources

1. The 2021 Engagement Process

Development of the 2017 SGI FAS included an extensive community engagement process and many of the ideas generated are captured in the report and supporting documents. Extensive community engagement was also used to develop the strategies and recommendations in "Designing the Future of Mayne Island - The Strategic Plan 2020".

The FRA engagement approach in 2021 had several aims:

- Collect information on the food and ag system to inform the LAFAP.
- Identify current challenges, opportunities and priorities for different participants.
- Connect with residents, back yard gardeners, farmers, retailers, restaurateurs, visitors, and local food and agriculture groups.
- Promote inter and intra island engagement/collaboration.
- Collect engagement information while also conducting events, activities and projects to improve local food understanding.

Key engagement activities that informed this plan were:

- Requests for education and outreach project proposals from SGI food and ag groups, and based on criteria, selection of a number to include in the Community Works Fund application.
- Roundtable discussions to bring inter-island perspectives and suggested actions to address longstanding inter- and intra-island issues and to build a collaborative network of food and ag practitioners.
- Creation of the GIFC Asset Inventory.
- Data and feedback collected through varying methods, including surveys done by project coordinators, qualitative descriptions, and the "Rapid Market Assessments" activity at each island's farmers' market.
- Review of the draft plan and comments by a number of local food and ag groups.

2. Community Engagement Projects in 2021

This section reviews specific projects and initiatives as listed below.

a) Gulf Islands Food Co-op Assets Inventory Project

b) Galiano Community Food Program 'Wider Lens' and 'Meet Your Maker' Projects

c) Education and Outreach Projects

i. Co-operative Sales Tables (GIFC)
ii. Info-Hub Table – Rapid Market Assessment (GIFC)
iii. Food Production Workshops and Farm Tour Series (PIRAHA)
iv. Mayne Island Apple Festival (MIAS)
v. Seed Library Support (GIFC)
vi. Galiano Gleaning Project (GCFP)
vii. Galiano Garlic Co-op (GCFP)
viii. Native Food Plants Project (GIFC)
ix. Countertop Gardens Project (CRC)
x. Microgreens Workshop (GCFP)

d) FRA Roundtables

a) Southern Gulf Islands Food System Assets and Priority Actions ("GIFC Asset Inventory")

This project led by the Gulf Islands Food Co-op created an inventory of food system assets on the Southern Gulf Islands to fill information gaps, including how many growers are on each island, what they are growing and where they are selling, how many grocery stores and restaurants sell locally grown products, what the challenges and successes of our community food and agriculture organizations are, what farm input supply challenges exist, and what local Indigenous food and agriculture activities are underway.

The inventory is a snapshot in time and will remain useful with continuing updates and refinements, so that it becomes an evolving and "living" document that serves as a tool for answering questions about our system and to help prioritize actions needed.

The result is described in a comprehensive final report provided in the separate Reports Appendix to this document, and consists of:

- A framework and preliminary data that provides an inventory of farmers, food sellers, food and ag organizations, farm and food input suppliers and Indigenous organizations in the form of a series of spreadsheets[9].
- a preliminary analysis of the information – primarily focused on Pender Island as a template - noting major gaps and challenges, as well as corresponding opportunities that could address some of those challenges
- region-wide observations
- a table of Priority Actions which is reproduced in full in Appendix 6 of this report

Image 10: Squash, Roz Kempe (Pender)

[9] For privacy reasons these spreadsheets are not publicly available.

Many challenges were identified in this analysis, examples include:

- Arable land that is not being actively 'farmed', some of which is unimproved pasture with occasional grazing or is providing some value for wildlife.
- Lack of supply of key farm inputs on island, including soil amendments, locally grown chicks/pullets, meat processing (except Saturna), tree fruit and berry nursery.
- Markets for local produce limited in many cases to seasonal farmers markets and farm gate stands.
- From a consumer standpoint, there is limited public access to locally grown meat (Saturna is an exception) and limited/no sales of locally produced greens and fresh vegetables during winter months.
- Very limited value-added processing of local produce; yet there are under-used commercial kitchens and over-supply of some produce at different times of year (e.g., fruit, zucchini and berries) that often go to waste.

Examples of opportunities identified include:

- Connect growers regionally via training opportunities, for example a series of ongoing Farm Field Days on different topics with university extension support.
- Garlic and bean collectives, Community Gardens, School Gardens, Seed Libraries are all community activities for food production whose work can be supported and expanded.
- Combine SGI efforts for advocacy as a unified and strong voice.
- Extend the growing season to fill consumer demand for year-round fresh vegetables and create additional revenue for growers through new greenhouses, or co-operative use of existing ones that are not being fully used.
- Identify under-used facilities and equipment and match with people looking for same. On Pender this would include community kitchens, an outdoor wood fired oven at the school, orchard ladders, apple press, pressure canner and food dehydrator.
- Diversify sales venues. For example, Wednesday food only markets, online farmers' market, use of the farmers' market coupon program, autumn "stock up markets", Meet Your Maker events, GIFC Co-op tables. New opportunities could be CSA box programs and the South Island FarmHub as opportunity for off island sales of surplus and longer shelf-life products.
- Increasing Food Processing and Storage: Opportunities identified include potential business case for a food processing social enterprise using existing commercial kitchen facilities, new community food processing equipment possibilities, for example, a flour mill also adaptable to processing grains for animal feeds and a hazelnut processor.
- Better understanding of how food waste is disposed of on the islands and explore the potential for community composting and soil building sites.
- Explore wild foods harvest in a regenerative and non-extractive way, and with respect and collaboration with Indigenous knowledge keepers.

b) Galiano Wider Lens, Meet Your Maker, and CRC Surveys

At the beginning of the COVID-19 pandemic, the CESC and the CRC sent out surveys to Southern Gulf Islanders to assess what was needed and assembled the information in a report. The Galiano Community Food Program also monitored the effects of the pandemic on the food producers and businesses on Galiano and reported the findings in their report 'A Wider Lens'. Below are some of the significant results of these initiatives relating to food and agriculture.

- Farmers experienced more interest expressed by islanders in locally grown food.
- Challenges for farmers during this time: disruption in supply chain (e.g., seed shortages), labour constraints, restricted farmers' markets, fewer tourists, smaller restaurant orders, reduced ferry service, the time required to create health & sanitation protocols.
- Suggested solutions: cooperative marketing with other island farmers to vendors, more information from vendors about the products they're interested in, CSA programs for guaranteed income and consumers throughout the season.

The GCFP organized the 'Meet Your Maker' Zoom event in January 2021 to connect food producers with vendors. This was the first time that this type of event has happened on Galiano. It was successful in creating a space for many Galiano food businesses to chat with one another. Holding the event in the off-season when businesses are less busy, and while the pandemic deterred many tourists from coming to the island was considered helpful in attracting more participants. Below are some of the important findings from this event.

- Raising awareness of the event increased the profile of food security and local food as issues of concern in the community and encouraged growers and vendors to think about the roles they play.
- Both growers and vendors came away with a much clearer understanding of the limitations and requirements for potential partners.
- Shared desire all around to increase partnership and availability of local food.
- Galiano doesn't have anywhere near enough growers or land in production to meet the needs of restaurants and grocery stores, especially given the short growing season of most farmers.
- Online collaboration between farmers could be used to set more consistent pricing and share knowledge & resources.
- Need for better communication between vendors, market shoppers and farmers.

c) Outreach and Education Projects

In early 2021, the Food Resilience Alliance solicited education and outreach project proposals from SGI non-profit food and agriculture organizations. Proposals were reviewed, and a selection made to capture a wide variety of activities, representing each of the islands as well as inter-island projects. Projects were selected which could build capacity and support for local food production and local food and agriculture champions. Each project also included informal community engagement activities to collect insights for development of this report.

Summary reports for three quite diverse projects are provided below and for the other seven projects in Appendix 7. Reports for all ten projects are provided in their entirety in a separate Reports Appendix.

i) Co-op Sales Tables (GIFC)

The Co-op Sales Tables provide a hosted sales venue for backyard gardeners and small-scale growers to sell produce at the farmers' markets on Pender, Mayne and Galiano. The cooperative model works for growers who do not have enough produce to fill a table on their own, or who otherwise do not want to host a table. The table host tracks sales information and other details that provide useful information to inform future projects.

- The GIFC Cooperative Sales Table project is proving to be successful, with each subsequent year showing better buy-in by participant growers and higher sales due to higher volumes of food being sold. Some of the suggestions to continue the success of the Co-op tables include investigating the

safe sale of eggs and added-value products, streamlining the process for onboarding new growers, and purchasing equipment such as digital payment processing tools, vegetable display tubs, and scales. Galiano is considering having a "pick-up" service on market day so farmers do not each need to travel to the market for drop off.

Image 11: Farm Stand, Hardscrabble Farm (Mayne)

ii) Info-Hub Table – Rapid Market Assessment (GIFC)

The GIFC Information Hub Table Project took place at Galiano, Mayne and Pender farmers' markets between July and October 2021. The primary purpose of the project was to gauge and increase public awareness of the challenges in the local food system. The method was to set up a booth with a flip chart questionnaire on one of three topics (COVID-19, climate change and farmers' markets) and engage in conversations. The questionnaire results and conclusions drawn from the conversations highlight opportunities for targeted food security projects in the future. Altogether, there were 131 participants: 61 SGI locals and 70 visitors.

This project yielded many insights and a set of recommendations which are reproduced in full in Appendix 6 of this report. Interesting findings from this project include:

- Definitions and targets around food security could be helpful in both short- and long-term community resilience planning.
- Many costs in the global food system are hidden in Western supermarket food prices, leading locally grown food to appear more expensive. More consumer education is needed on the real costs of cheap food produced by the "industrial agriculture" supply chain (such as environmental/climate costs, low wages and poor working conditions, unethical treatment of animals), as compared to local food producers who tend to use environmentally friendly methods, pay a living wage to labourers (if not themselves), and raise livestock ethically.
- Growers likely have a better understanding of the actual effects of climate change on the local food system than consumers do. The community at large could benefit from hearing directly from local growers about how climate change is impacting food production.
- Community engagement using online resources is a way to inform many people of efforts being made toward strengthening the local food system. Social media and online marketing are effective and necessary components in building relationships between local food producers, businesses and consumers.
- Home gardening continues to be a valuable aspect of SGI food security. Growing food at home is a priority for many SGI residents. Seed saving by these growers was also identified as important to local food system resilience and individual self sufficiency. Initiatives to help people begin gardening as a hobby and continue food growing as a lifestyle would garner support.
- Water conservation is of paramount importance in terms of mitigating the effects of climate change on the local food system. Water conservation initiatives would be supported, including

educational workshops on conservation, bulk purchasing of rain catchment systems, lobbying government for allowances or subsidies for water saving measures.
- Cooperative commercial growing of particular crops may be a route to more economically viable food production in the Southern Gulf Islands.
- The ability and desire of grocers to stock local food is often the key to expanding the accessibility of local food to more of the community.
- Year-round food-only farmers' markets would be supported by island consumers.

iii) Food Production Workshops and Farm Tour Series (PIRAHA)

Pender Island Recreation and Agricultural Hall Association (PIRAHA) supports many community endeavours including educational programs, hosting concerts, plays, art exhibitions, the Saturday Market, the annual Fall Fair, and an array of recreation programs.

The purpose of the 2021 workshop series was to increase community skill-sharing and education about local farming and help participants feel more engaged/empowered in understanding where they fit, and how they personally can help strengthen local food markets. Events included: apiary and farm tours, baking workshop, cidery tour, and a jam, chutney and canning workshop.

Image 12: PIRAHA Hall (Pender)

Participation numbers totalled 72 people, a mix of locals, seasonal residents and tourists. The numbers for each event varied from low (2 people) to high (17 people), and it was found that using a variety of promotional materials (e.g., Facebook, Instagram, and in-person advertising such as posters at farmers' markets and around the community) was successful in keeping the community up to date about the events. Coordination roles were often filled by summer youth under Summer Jobs grants.

Challenges included planning events during the height of summer, when both producers and community members are hard to reach and busy with gardening and vacations. These types of activities would benefit from more planning in advance.

e) Food Resilience Alliance Roundtable Discussion Series

FRA Roundtable discussions are open to people working in the food and agriculture sector. Each session focuses on a specific aspect or theme of the SGI food system. Roundtable sessions were designed to further explore specific initiatives or challenges in order to instigate group discussion and collaboration between the islands. The Roundtable format has been popular and demonstrates that knowledge/experience transfer between inter-island food and ag groups is valuable and will help forge a truly cooperative, interlinked food and ag system.

Four Sessions have been held to date:

- An introduction to the Mayne Island Food Bank and their new food distribution project with Max Stockholder.
- A discussion about the SGI Hay Dilemma with Kristine Webber of Mayne Island.
- A discussion about the South Island FarmHub with Emma Luna Davis of Galiano Island.
- A review of the GIFC Asset Inventory report with Roz Kempe of Pender Island (see description of this project above).

Mayne Island Food Bank & Food Distribution project

Max Stockholder, the Mayne Island Food Bank coordinator, provided a discussion of Mayne's food bank program and initiatives to increase collaboration across the SGI's food banks. Mayne's food bank recently acquired a refrigerated truck to be used to support all the SGI and is building relationships with the other SGI food banks. Refrigeration for transport and storage and timing of delivery is a key issue for food banks to be able to provide fresh produce and meat. Local businesses and farmers periodically donate food, but it depends on how busy other markets are. Being able to receive a tax receipt is an important aspect for donors.

Hay Production and Distribution on the SGIs

Kristine Webber, a farmer on Mayne Island, provided a presentation on the challenges for hay producers and consumers on the SGI. The Roundtable discussion covered many points including difficulty finding labour to help with hay production, storage problems and potential for collective storage, potential for SGI farmers to collaborate to increase local security in hay, and increase quality of hay crop, dangerous cargo barrier on ferries/unpredictability of ferries, potential for a collective order for an entire barge load, specialty hays for certain animals, shared haying equipment.

Galiano Community Food Program working with the South Island FarmHub

Presentation from Emma Davis of Galiano Community Food Program (GCFP). South Island FarmHub (SIFH) was started in response to the COVID-19 lockdowns to enable CRD food producers who usually supplied restaurants to still have a reliable sales venue for their crops when the restaurants were closed, and to enable local charities to purchase subsidized local produce for use in their food programs. SIFH covers promotions and marketing of products and customers look through an online catalogue of products. The SIFH platform generates pick lists for growers (which is helpful since farmers know exactly how much to harvest), amalgamates orders, organizes and delivers. Restaurants and institutions/schools also buy from the platform. GCFP investigated the potential for Galiano to participate in a pilot model using the SIFH platform, for products supplied and delivered on Galiano. SIFH indicated they would charge a 20% markup for this which Galiano growers did not favour. Galiano coffee tried selling on South Island FarmHub in 2021 but found that inventory did not move fast enough to preserve freshness. An outlet like SIFH may reduce the risk incurred by farmers when increasing supply by providing an off-island outlet for potential surplus production. Other platforms for online sales include Local Food Marketplace, Open Food Network, Lokobuzz, and Farmer Fresh. Pender Island Farmers Institute uses LocalLine as an online platform.

3. Farmer Perspectives and Existing Farm Programs

This section gathers information on farmers' perspectives from several reports and sources, including the 2017 FAS, a 2015 survey of Pender, Mayne and Galiano farmers performed by PIFI, a 2020 survey of Galiano farmers by GCFP reported in the Wider Lens report, the Closing the Supply Gap project and farmer related comments gathered in the Community Engagement activities described above.

Land

Concern that good farmland is not being used for farming: Data in Table 5 estimates that about 30% of the SGI land in the Agricultural Land Reserve is currently being farmed.
Concern about access to farmland: High and rising land value in the SGI (higher than many other areas in BC), coupled with low expected farm returns is a major barrier to new farmer entry.
Growth and Succession: Some farms are interested in growing, some are interested in reducing production as they near retirement, others are looking for a succession path where their farm can remain in production as they retire from farming.
Farmland leasing: PIFI survey indicated that 67% of farmland leasers did not want to lease more, 24% did want to lease more land, and 19% wanted to lease some of their land out in the future to other farmers as they get older.
Related Programs:

- BC Land Matching program: This program is delivered by the Young Agrarians, and is actively looking for matches. There have been some matches found in the SGI.
- Capital Regional District Regional Foodlands Access Program Feasibility Study: This report from 2019 identifies a number of routes to increase farmland availability. In February 2022, KPU published a business case model and three site assessments related to establishing a CRD Foodlands Trust.
- BC Assessment lower property tax rates for qualifying farms

Labour

Lack of skilled farm labour was the highest ranking issue in the PIFI farmer survey.

The SGI have unique benefits that make them attractive to some people looking for a farm experience. Below are links to several matching services that link up farms looking for workers with people who are interested in working and learning farming. Many BC farms are listed. Canadian government programs that provide wage subsidies are also listed below.

Farmer/Farm worker matching services:

- WWOOF (World Wide Opportunities on Organic Farms) 50 year old organization that helps arrange (largely international) working farm visits.
- FoodWork.ca serves as a job board for all kinds of work in local and sustainable food.

> "Why do Farmers Farm?
> Farmers and food producers farm because they love it. Many express their enjoyment in what they do and that it is way of life. Many see it as something to do in retirement, for health and nutrition for their family, the love of the outdoors, and for the love and respect that they have for the land. Many said that they love growing and caring for livestock and the land. Many said that it is just the right thing to do."
> Source: PIFI 2015 farm survey

- SOIL Established in 1989 as a non-profit organization, SOIL links Canadian farmers willing to train apprentices with folks wanting to work and learn on an organic farm using sustainable practices. "We aim to facilitate apprenticeships which transfer lasting knowledge to both the farmer and the apprentice."

Government Wage Subsidy Programs:

- The Youth Employment and Skills Program provides a wage subsidy to employers who hire youth for agricultural jobs. The program offers support for 50% of wages to a maximum of $14,000.
- Canada Summer Jobs: The program provides wage subsidies to employers from not-for-profit organizations, the public sector, and private sector organizations with 50 or fewer full-time employees, to create quality summer work experiences for young people aged 15 to 30 years.

Housing: Worker housing has been identified as a major constraint in the SGI and a bigger problem in the SGI relative to other areas in BC.

- In July 2021, the BC government announced new rules to allow property owners in the Agricultural Land Reserve (ALR) increased housing flexibility. Permissions from local government or First Nations government will still be required.
- The Islands Trust has been focussing on the affordable housing situation generally in the SGI.

Water

Growing need for increased water storage and irrigation on SGI farms to cope with climate change.

- Maintaining tree cover is a key part as trees help draw up deep water and maintain water holding capacity of the soil.
- Strategies to conserve groundwater and increase rainwater capture are already used by many SGI residents.
- The FAS estimated about 185 acres (75 ha) (10%) of the cultivated land in the SGI is under irrigation.
- The Salt Spring Island (SSI) Farm Plan Renewal 2020–2030 reported some detailed information on water systems, which is likely similar for the SGI area:
    - Total irrigated area is approximately 11% of the total area farmed.
    - Most vegetables are irrigated (93%), mainly using sprinkler and trickle systems.
    - Vine and berry crops are almost all irrigated (97%) using trickle irrigation systems.
    - Forage and pasture crops are rarely irrigated (6% of forage crops).
- BC's Agricultural Water Demand Model found that in a future dry scenario, water demand could be 20% higher than a current dry year, meaning irrigation systems will be required where they are currently not used.
- The Islands Trust has several initiatives under way to improve understanding of SGI water resources, including mapping ground water availability and providing a downloadable atlas displaying all wells and outputs in a 3-D format and mapping surface water on SGI using satellite data.

> **"Is there a desire to "grow agriculture" in the Gulf Islands?**
> **Yes: Many said that they would expand their operations if they could market the additional product for a reasonable return. Many would be able to farm more with suitable help. Most said water is a limiting factor to expansion, but with improved infrastructure they could produce more. When asked if they would grow more or different crops/livestock or start an additional farm enterprise if they could process, 38% said yes, 10% said no."**
> **Source: PIFI 2015 farm survey**

- The BC government's Water Sustainability Act (2016) introduced the concept of Groundwater licensing. All irrigators and others who divert and use groundwater from a well or dugout for non-domestic purposes are required to apply for a water licence. Groundwater licensing provides a mechanism to determine who uses the water, including during shortages. A water licence is tied to the land and provides a system for managing use in times of water scarcity.

BC's Beneficial Management Practices Program can provide funding up to $70,000 to eligible farms for certain projects, including: Soil and riparian integrity, Water quality, Environmental impacts, Waste management. Water storage and other irrigation improvement projects can be eligible.

Invasive Species and Fencing

- The populations of native deer (and Fallow deer on Mayne Island) are such that all farms require fencing. From PIFI 2015 survey "Canada geese, deer, invasive species remain an issue for farmers that we continue to find challenging. Most farmers have adjusted their farming to the wildlife and keep on watch for new invasive species so they can be dealt with early on."

Purchased Farm Inputs

- PIFI 2015 survey: "Ferry travel is an issue for many farm operations (48%), primarily due to the fares, but also due to the time and complexity involved in ferry travel."
- GIFC Asset Inventory recommendations include "Advocate BC Ferries to make hay and livestock transportation more manageable." Feed and Hay supplies are difficult to find on island and sometimes challenging to get delivered by ferry. Livestock shipping should be given priority on ferries, since the local routes do not allow livestock reservations.
- In some cases, off island purchases may be at least partially offset by on island sources:
  - Soil Amendments
  - Compost
  - Seeds
  - Fruit Tree, Berry and Native Plant Nursery: Galiano and Mayne Islands have native plant nurseries but Pender and Saturna do not.

Challenges to Livestock production

- Lack of Abattoirs: Saturna has a Class A facility with cut and wrap service. However, lack of meat processing is a challenge on Galiano, Mayne and Pender Islands.
- In 2021, the BC government announced SlaughterRight to support producers who intend to become licensed as a rural slaughter establishment and process their livestock and poultry on-farm.

Image 13: Cattle, Lambs, Hay, Campbell Bay Farm (Saturna)

- PIFI has obtained federal infrastructure funding for freezer and refrigerator storage to help with temporary storage needs for farmers and distribution to the community.
- Veterinarian: there is no large animal vet resident on the islands. Collaboration is needed between farmers to coordinate and share costs of having a vet visit.
- No local pullet or chick supplier on the SGI.

Marketing

- In PIFI's survey 48% of farmers said they need help marketing and accessing more markets. The survey showed 67% of farms use a farm stand, 29% a farmers' market, 15% wholesale on-island, 15% use a website, 10% wholesale off-island, split between other Gulf Islands and Vancouver Island, and the Lower Mainland. 10% to grocery stores, 10% special events, 10% social media, 5% CSA.
- GCFP's 2021 Meet your Maker event identified pricing as an area where more information is needed. Grocery and restaurant buyers want to know prices ahead of time and have assurances on delivery quantities and timing, which can be difficult for farmers to predict.
- Specialization and Niche products – Microgreens, gourmet greens, tender greens, herbs and edible flowers are items that are better to buy local because of price and quality.
- In the PIFI survey, 33% of respondents indicated they wanted to increase processing. 43% of farms processed some or all of their products, either on their own farm or in another facility; items processed included lamb, beef, poultry, jam, vinegar, wool, hides, and apples.
- The Closing the Supply Gap project identified affordable processed food analysis lab services as a service needed for small to medium food processors.
- Closing the Supply Gap found that farmers in the group "collectively expressed the view that food security is a top priority and, linked to this view, they expressed strong interest in supporting a universal school meal program within their business model; they unanimously declared that they would increase production for this purpose."

> "In focus groups, producers pointed to gaps in on-farm and shared infrastructure needed to support distribution, costs of increasing production, concerns about engaging in production contracts in which producers carry all the risk, and regulatory requirements that are challenging for small to medium scale producers.... demand for local food was high from the grocery perspective but there were concerns about quality control, reliable supply, and distribution management."
> Source: Reichart 2021 PhD Dissertation

Regenerative Farm Practices

- Most SGI farms use environmentally friendly processes, but few have organic certification due to the perceived arduous requirements to achieve certification. PIFI's survey of farms found that 81% use organic practices but are not certified organic, 28% use natural practices, 4% are certified organic (IOPA).
- Workshops, field days and other educational projects to discuss and demonstrate regenerative practices are of interest to SGI farmers. The PIFI survey identified cheese making, greenhouse growing and organic growing as topics of interest.

Section III: Vision, Goals, Strategies & Actions

Vision

A thriving, resilient local food and regenerative agriculture system on the Southern Gulf Islands that respects local ecosystems and treats food not as a commodity, but as part of the community culture.

With diversity, knowledge and sustainability as core values, our food growers, processors, distributors and eaters would all be engaged in a well-informed, respectful and fair exchange of goods and services. By acting with respect for the land and all living things, we will ensure abundant food for future generations.

Overview of the Plan

As noted in Section I, respected thinkers in disparate disciplines are clearly stating that time is short and immediate action is needed to build resilience and avoid global calamity. A sense of urgency must pervade implementation of actions to adapt and mitigate. But where to start and what are the priority actions?

The University of British Columbia sponsored an agricultural webinar moderated by President Santa Ono (Future of Agriculture, February 5, 2021) to discuss the disruption to food systems caused by COVID-19. Among the learnings, three key messages emerged:

- Prepare for further disruption,
- The need to shift from efficiency to resilience in our food system, and
- The need to build a local, parallel food system.

Keeping these ideas in mind and building on what was learned from the outreach and engagement activities as part of this planning process, an overarching goal was articulated to guide development of recommendations for action in this plan:

> Build resilience through reciprocity with natural ecosystems so that current and future generations can have a secure abundant local food supply.
>
> **Build resilience by increasing sustainable production, processing, distribution, and consumption of local food in the SGI food system.**

The strategic focus is on increasing consumer demand for local foods, driving increased local food production and processing on the Southern Gulf Islands. In addition, this strategy promotes ecological, regenerative farm practices, which are informed by traditional First Nations principles and practices, and the best science of the day.

Priority strategic actions are recommended, some sequential and some concurrent. In addition to the actions in this Section, complementary, often more detailed actions and recommendations from three reports – "A Wider Lens", "Southern Gulf islands Food System Assets and Priority Actions" and "InfoHub

Rapid Market Assessments" are reproduced in their entirety in Appendix 6. Relevant complementary actions are also found in "Designing the Future of Mayne Island – the Strategic Plan" January 2020.

The recommended actions are structured under thematic strategies. The actions are addressed to consumers, gardeners, farmers, all levels of food and agriculture organizations, and to all levels of government. Recommendations recognize that food and ag production are small to medium scale on the SGI but also reference larger scale activities to provide background context and to encourage accessing support that may be available beyond our region.

Leadership Group: Food Resilience Alliance
Develops Strategy, Workplans, Funding, Coordination
Informed by Indigenous Knowledge and the Latest Science
Informed by Expected Climate Change Impacts and Mitigation Strategies
Improving Information Sets and Providing Education Opportunities
Supporting Projects to Increase Local Food Consumption, Production and Processing

Increase Local Food Consumption
- "Closing the Supply Gap Project"
- Diverse Venues
- Consumer Engagement
- Indigenous Food Workshops

Increase Local Food Production
- Economic Viability
- Access to Inputs
- Regenerative Practices
- Innovation
- Back Yard Food Production
- Indigenous Foodways

Increase Local Food Processing
- Community Workshops
- Commercial Feasibility
- Storage
- Food Security

Goals, Strategies and Actions

Goal

1. Establish a Leadership Group to Advance Food and Agriculture on the SGI

Salt Spring Island continues to demonstrate success in implementing and updating its food and agriculture strategy, largely due to its leadership group, the Salt Spring Agriculture Alliance. This Alliance provides a leadership model that can be adapted by the SGI to advance the actions described in this report.

To be successful, care must be taken in establishing broad, inclusive representation. In addition to people involved in food and agriculture groups on the SGI, Indigenous representation, and one or two "members at large" (respected community members with a good understanding of island culture and perspectives) should also be invited. This is important as everyone eats (we all have a stake) and leading a transition to a resilient food system will require broad participation. The Leadership Group should

develop a collaboration charter to guide how it will work together. It is critical to obtain consistent funding to support the group if implementation of the recommendations is to occur in a timely manner. Not having an effective Leadership Group or funding will ensure that implementation will be slow, if it happens at all. Time is of the essence, effective leadership and action are required to achieve increased resilience and food security.

1.1 Use guidance in the SGI FAS, the SGI LAFAP and the SSIAA model to establish an implementation leadership group

Priority Actions

1.1.1. Determine if FRA with an expanded membership is the appropriate leadership group, if so, expand the membership and task the group with supporting the implementation of this plan.
1.1.2. Invite and encourage local Indigenous leadership to be part of FRA leadership group, and to identify what supports would improve local indigenous foodways.
1.1.3. Develop a collaboration charter to guide how the Leadership Group will work together.
1.1.4. Explore sources and secure adequate resourcing of the leadership group, perhaps through annual contribution funding; explore establishing a CRD food and agriculture service that could access annual funding through a tax requisition.
1.1.5. Support and increase capacity of local food and agriculture non-profit organizations.

1.2 Establish multiple funding sources to implement the actions in the SGI FAS and LAFAP

Priority Actions

1.2.1 Monitor existing and new government programs at all levels that can potentially be accessed to fund SGI food and agriculture system improvements.
1.2.2 Identify other funding sources such as community loan funds that can be used to kick start new food production and processing opportunities.
1.2.3 Work with the SGICRC Sustainability Director to position food and agriculture within the overall economic sustainability framework being developed for the SGI to take advantage of support and funding that may arise.
1.2.4 Develop feasibility studies for social enterprises that generate funds, perhaps based on a new food production opportunity such as year-round greenhouse operation, container agriculture, seaweed farming, or a value-added food processing enterprise.
1.2.5 Explore where donations/fee for services can be implemented for services that are currently free to help fund or cross subsidize initiatives.

Goal

2. Increase Consumer Awareness and Demand for Locally Grown Food

Various sources estimate that only 3% - 10% of the food consumed on the islands is produced locally. There is a great opportunity to increase uptake and demand by residents for locally produced food and for local food producers to fill that demand. In addition, the SGIs are “foodie islands”, with a large seasonal influx of visitors. They contain some excellent restaurants and food offerings prepared by experienced and innovative chefs who build their menus on local wild harvested ingredients, farm produce, meats and local seafood. A number of actions below build on existing activities and some new ideas are proposed that should be explored to increase demand for local food.

The "Closing the Supply Gap" project stresses that stable, trust-based business relationships between different participants are integral to a robust local food system. Discussions amongst participants to identify and agree on the shared values[10] that form a basis for a more secure and resilient food system for the SGI provide a foundation. For example, in the SGI it is important to challenge the perception that locally grown food is expensive relative to imported food by stressing the value of supporting local farmers and food businesses who are part of the community and whose success contributes to the success (and resilience) of the whole community.

"Buying local products has never been more important . . . COVID 19 has moved the dial on supporting local products from 'nice idea' to 'essential for our security'. Supply chain disruption and concerns about product quality and reliability of imported products has shown us our vulnerability to disruption. With the benefit of the Island Good brand raising public awareness and local government sponsorship, Island Good producers and retailers have seen sales increase and markets expand." (VIEA State of the Island Economic Summit, October 26, 27, 28, 2021)

2.1. Work with the "Closing the Supply Gap" initiative to develop a local short supply chain food system anchored by a shared values proposition.

"The core purpose of Closing the Supply Gap is to bring about change that builds a strong, sustainable local food system—a values-based system for producing, organizing, distributing, and financing local food for local use. The initiative is overseen by a Leaders Group which includes local food proponents from across all food sectors: producers, institutional food buyers, food wholesalers and retailers, food educators, investors, policy makers, and researchers.

Closing the Supply Gap is an initiative that involves leaders from across the Capital Region area. It is organised as a collaboration rather than hierarchically based on the premise that working collaboratively, we can build a stronger, more sustainable, and more resilient local food system across the region.

CRFAIR provides administrative support and will be hosting the new website that will be launched soon to provide a central information source for food system development across the region. Closing the Supply Gap is based on up-to-date research and participatory action to change our local food system. The work of the Leaders Group is values-based with the aim of embedding principles of regional social, environmental, and economic resilience. The expected outcome is an ecologically robust place-based food system that benefits all participants in the local food economy and the community at large." (CRFAIR, 2021)

[10] The key shared values are diversity, sustainability, and knowledge (see Appendix 9)

Priority Actions

2.1.1. Enable one or more individuals from the SGI food and agriculture Leadership Group to participate in the regional "Closing the Supply Gap" Initiative and the "Short Supply Chain" Demonstration Project.
2.1.2. Develop an information campaign to advance short supply chains and the values proposition utilizing respectful, island channels such as the Community Justice Program and its community circle techniques to start the conversation[11].
2.1.3. Amplify the message by promoting short supply chains and the values proposition through SGI food and agriculture groups, farmers' markets, local media channels and events and activities such as community picnics, fall fairs, community "soup and bread" luncheons, and other events involving food to communicate the value and need to support local capacity to grow, process and store food.

2.2. Diversify means for customers to access local foods

Priority Actions

2.2.1. Continue to fund the Gulf Islands Food Co-op sales tables and Info Hub table at Saturday Markets; support purchase of digital payment technology and scales for Co-op tables.
2.2.2. Assess consumer uptake of a diversity of sales outlets and approaches for local growers such as Community Supported Agriculture, online ordering, home delivery, box programs, farm stands, and pop-up markets.
2.2.3. Assess potential for Mayne and Galiano farmers' markets to be part of Farmers Market Coupon Program and production of a SGI Farm Stand map similar to Pender's.
2.2.4. Continue, and where possible expand to other islands, events such as "Meet your Maker" on Galiano.

2.3. Improve consumer understanding of the benefits and availability of locally grown food

Priority Actions

2.3.1. Continue to label food grown on Galiano as "Galiano Grown," expand island branding on each island and explore benefits for SGI producers to obtaining Island Good or BuyBC branding.
2.3.2. Continue to support SGI food related festivals and other annual community events and look for opportunities to collaborate or coordinate such as an annual SGI Festivals Calendar.
2.3.3. Work with restaurants, the SGI Tourism Partnership Society and The Culinary Tourism Alliance to develop and promote culinary tourism during the shoulder and winter season.
2.3.4. Contact Professor John Volpe of the Ecogastronomy Research Group, University of Victoria to explore the idea of Geographic Indicators and how they may be used to define the islands as a unique food region.

Image 14: Apples, Raven Rock Farm (Pender)

[11] The SGI Community Justice program has techniques to initiate discussions of difficult or new subjects in communities and could be useful to start a discussion about how values propositions can be incorporated as the foundation for a regenerative local ag and food system.

Goal

3. Increase Production of Locally Grown Food Using Regenerative Agriculture Practices

"Resilient agriculture is the ability of the system to withstand shocks and disturbances without losing its function. A resilient agricultural system is capable of self-organization, learning and adaptation that continues to grow crops for the SSI community in the face of unexpected shocks and disturbance." (SSI Area Farm Plan Renewal 2020 – 2030)

As described in Section II, the Government of B.C. is launching a Regenerative Agriculture and Agritech Network (RAAN). RAAN aims to contribute to a more resilient food system and help farmers adapt to and mitigate climate change. The regenerative approach covers new and existing methods that aim to restore soils, water and biodiversity to improve overall ecosystem health and make farmland more resilient to climate change. The RAAN plans to facilitate the necessary collaboration with farmers, producers, industry and academia to address major challenges, such as the increased cost of resources for food production (e.g., land and water), labour shortages and the impacts of climate change.

The agriculture sector on the SGI consists of many small to medium sized farms which have already adopted many sustainable and some regenerative farming practices. The following strategies and actions build on this base and move the SGI food system toward a largely regenerative approach while recognizing that economic viability and a fair return to farmers is at the core of sustainability, food security and the future of farming on the islands.

Agroecology has been taken up by the United Nations. It is a worldwide initiative, similar in practice as regenerative agriculture but probably a bit more wholistic and comprehensive.

3.1. Improve the economic viability of SGI food and ag system

Priority Actions

3.1.1. Develop an economic sustainability strategy for the SGI food and agriculture system that addresses fair financial returns in all components of the system starting with a focus on producers.

3.1.2. Work with the SGI CESC to strengthen food and agriculture, one of its strategic priorities, and access CRD support funding for a detailed food and agriculture economic sustainability strategy.

3.1.3. Establish a standing Food and Agriculture Advisory Committee, perhaps as agricultural advisory planning commissions, on each SGI to advise and develop land use recommendations for each Local Trust Committee; work with CRD to determine if there is value in establishing an SGI Food and Agriculture Commission.

3.1.4. Monitor and share information with farmers about government assistance and other programs, including emerging voluntary programs for farmers to produce and sell carbon offsets.

3.2. Improve farmer access to key inputs and infrastructure

Priority Actions

3.2.1. Form an SGI Agricultural Land Trust to protect ALR and agricultural lands, quantify unused arable land, actively seek farmers for available lands, and bring fallow land into production when economically viable on each of the SGI.
3.2.2. Assist retiring farmers with succession plans to keep agricultural land in production. Promote farm internship programs to farmers and assist with applications for federal wage subsidy funding.
3.2.3. Work with the ALC, Islands Trust Council and Local Trust Committees to address and resolve affordable seasonal and full-time housing for food and farm workers.
3.2.4. Explore BC government's Beneficial Management Practices Program for opportunities for SGI farmers to obtain funding for certain on-farm projects, including: Soil and riparian integrity, Water quality, Environmental impacts, Waste management.
3.2.5. Leverage the full potential of cooperative action and bulk buying to reduce input costs especially on vet services and large quantities of hay, soil amendments, seed for cover crops, etc.
3.2.6. Assess potential for increased seed production on the SGI.
3.2.7. Determine feasibility of a cooperative purchase and use of agricultural equipment such as incubation and hatching, the Rain-Flo raised bed system and food processing.
3.2.8. Determine how improvements can be made for producers on the SGI to access abattoirs on Saturna and Salt Spring Island; monitor development of the Good Place Abattoir in Nanaimo; determine feasibility of small-scale abattoir facilities on the SGI.
3.2.9. Obtain "Slaughter-Right" training and apply for Farmgate and Farmgate Plus Licenses.
3.2.10. Explore with the Province and BC Ferries whether transportation for agricultural purposes - inter-island, to and from Vancouver Island and the Mainland – can be facilitated, subsidized, and perhaps accessed with an "Agriculture Card" similar to the "Experience Card."

3.3. Share practical knowledge about organic regenerative agriculture

Priority Actions

3.3.1 Collaborate with Indigenous and scientific communities to develop an SGI specific extension program (videos, events, speakers, presentations by agriculture extension scientists, field days, and mentorship) that assists food growers with hands-on practical management of soils, natural water retention and purification systems, native plants and pollinators, biodiversity and ecosystem health.
3.3.2 Establish ongoing famer to farmer workshops on topics prioritized by farmers, such as seed cleaning, microgreens and soil workshops organized by GIFC.
3.3.3 Develop soil health educational opportunities for farmers and gardeners to build soils, sequester carbon, increase fertility of farmland, and yields of nutrient dense crops. Undertake research, field studies and trials such as the soils workshop undertaken by KPU's Institute for Sustainable Food Systems and GIFC in early 2022.
3.3.4 Inventory successful water management practices and techniques currently used such as the Rain-Flo System at Cable Bay Farm, Galiano and develop a water management educational program for farmers and gardeners with seminars, site visits, mentorship and an online video library of the techniques featuring the farmers and gardeners that use them.
3.3.5 Initiate and participate in restoration projects incorporating Indigenous knowledge.

3.4. Build understanding and assess potential of innovative growing systems

Priority Actions

3.4.1. Update information in the SGI FAS on the number of greenhouses in the SGI and conduct a feasibility assessment for establishing one or more year-round greenhouses and/or container gardens on the SGI working with suppliers such as the Growcer, CropBox or Freight Farms to extend the growing season.

3.4.2. Identify and determine feasibility of high return crops such as premium culinary garlic, eggs, blackberries, specialty mushrooms, spices like saffron; explore worm, insect and shrimp farming and closed loop land-based fish farming.

3.4.3. Conduct an information seminar using the Pacific Seaweed Industry Association's "Seaweed Farming Workshop" video followed by a site visit(s) to build an awareness and understanding of the potential for seaweed farming in the Salish Sea.

3.5. Increase food production in home and community gardens

Priority Actions

3.5.1. Build home garden capacity by providing mentors to assess water availability and garden location, advise on set up of raised beds and provision of soil, seeds or seedlings, and to provide guidance to new gardeners.

3.5.2. Assess the demand for and current space availability in Community Garden(s) and determine feasibility of expanding into other location(s) on each island to increase the number of gardeners and reduce travel time for gardeners.

3.5.3. Support and expand the capacity of local seed libraries to provide seeds and promote seed saving, selection and breeding to adapt to the constantly evolving local growing conditions.

3.5.4. Provide funding for W̱SÁNEĆ, Penelakut and Coast Salish People of Galiano Island community members to expand their capacity to reclaim their knowledge of native food plants, as well as propagate and plant them to increase food sovereignty.

Goal

4. Increase Local Food Processing and Storage of Local Foods

4.1. Identify and promote opportunities to increase local food processing

Priority Actions

4.1.1. Examine the level of community use of infrastructure such as community kitchens and shared equipment and identify where the infrastructure is stretched and may need to be augmented, or where is it undersubscribed and may need new programs aimed at increasing community use.

4.1.2. Promote use of existing community commercial kitchens to increase knowledge sharing of food processing and increase the amount of local food processed; explore opportunities for increased community food processing events.

4.1.3. Explore potential on each island for increased commercial processing ventures (bakeries, pickles and jams, other products) and/or social enterprises. Processed food analysis lab services is a key component.

4.1.4. Learn from the successes of established hubs such as the South Island FarmHub on Vancouver Island and the Root on SSI and assess feasibility of shared use or building a local hub on each island as is being done on Pender.
4.1.5. Encourage networking between local grocery stores, restaurants, meal programs and Food Banks to assess opportunities for increased use of locally grown products.

4.2. Ensure the SGI communities understand, are prepared for and can respond to major fast acting disruptions to the food supply

Priority Actions

4.2.1. Assess and share Community food security preparedness in terms of supply, stocks and storage of food.

4.2.2. Assess feasibility of shared use of secure food storage facilities on each island as is being done on Salt Spring Island.

Goal

5. Take Action to Respond to the Climate Crisis

Excerpts from the Salt Spring Island Area Farm Plan Renewal 2020 -2030 and Salt Spring Climate Action Plan 2020 to 2030 are provided below. These excerpts are very relevant to the SGI and provide context for how food and agriculture must adapt to and can help mitigate climate change.

"Agricultural GHG emissions from the global industrial food system, including Canada, differ from other sectors in that direct emissions from fossil fuel combustion comprise a relatively small proportion of these emissions. Larger sources of agricultural GHG emissions include methane from livestock and manure (~35%), nitrous oxide from microbial transformations of nitrogen in soils fertilized with soluble nitrogen fertilizers or manures (~35%), methane and other GHG emissions from manure storage and composting (8%), and CO2 from biomass burning and other sources (12%) (Smith, 2007). The Canadian National Farmers Union recommends that efforts to reduce GHGs in agriculture should focus on three sources that account for 70% of total Canadian agricultural emissions: livestock production (30%), agricultural soils (29%), and fossil fuel use (11%) (Qualman, 2019).(Salt Spring Climate Action Plan 2020 to 2030, Transition Salt Spring Society, 2021)

"The climate emergency cannot be ignored. Climate change is already impacting agriculture on SSI and will continue to impact food production both locally and globally. Summers are becoming drier and hotter and winters are becoming warmer and wetter. Population growth, agricultural water use and summer droughts have resulted in ground and surface water depletion and deterioration in water quality. Ecosystem biodiversity and health is under threat around the world due to climate change, pollution, over-exploitation, human encroachment and unsustainable agricultural practices. Degraded ecosystems are limited in their ability to deliver the services that are vital to human lives and well-being.

Much of the agricultural production on SSI is an exception to these global trends; food growing practices on SSI are small-scale and sustainable. However, more can be done on SSI to increase soil health and mitigate GHG emissions through agricultural practices that sequester carbon. A robust local food system has the potential to reduce SSI's carbon emissions through increased production, offsetting emissions from more GHG intensive imported food, and through more focus on regenerative growing practises.

The lack of available finished compost on SSI to build soil organic matter and soil health greatly limits the ability of sustainable, regenerative agricultural production and soil carbon sequestration. Best practices for water management for water retention and storage are needed to ensure the availability of water during dry summer months for food production and healthy ecosystems, and for managing excess water in the winter and spring. Resilient and regenerative agricultural practices such as integrating livestock and crop production, adoption of permaculture practices, agroforestry systems and other methods of increasing healthy ecosystems all contribute to mitigating and adapting to climate change, while increasing opportunities for more food production at the same time promoting environmental sustainability" (Salt Spring Island Area Farm Plan Renewal 2020 -2030, March 2020)

5.1. Provide locally relevant information to islanders about the growing impact of climate change on SGI food security and how to respond

Priority Actions

5.1.1 Develop an active awareness campaign that includes - regular articles in island newsletters and magazines, excerpts and links on social media, speaking tours and town hall sessions, and presence at island festivals, events, and farmers' markets - to promote the findings and recommendations of the Vancouver Island Adaptation Strategies plan and the Salt Spring Island Climate Action Plan with a special focus on reducing emissions from livestock production, agricultural soils and fossil fuel use.

5.1.2 Support the list of priorities developed by the Farmers for Climate Solutions to be included in the new five-year Agricultural Policy Framework being co-developed and co-delivered by the federal, provincial and territorial governments.

5.1.3 Translate high-level strategies into actions such as providing islanders with a checklist of immediate actions that as producers and consumers they can take to adapt to and mitigate climate impacts in their gardening practices and food consumption choices.

5.1.4 Promote increased consumption of plants, plant-based foods and animal protein with low production and processing requirements and emissions such as poultry and eggs, venison and seafood.

5.2 Encourage food growing practices that regenerate soils, ecosystems and communities

The agriculture sector on the SGI consists of many small to medium sized farms which have already adopted many sustainable and some regenerative farming practices. The following priority actions build on this base and enable the SGI growers to increase regenerative or ecological practices. Economic viability and a fair return to farmers along with equitable access to food is essential for food security and the future of farming on the islands.

Image 15: Hazelnuts (Pender Collective)

Priority Actions

5.2.1 Provide funding and professional advice to farmers to increase wild plant diversity and restore and maintain on-farm ecosystems such as forests, hedgerows, bird and pollinator habitat, ponds and creeks, and native plant species habitat.

5.2.2 Create opportunities such as the SGI Food Resilience Alliance Roundtables for community food and agriculture organizations to connect and discuss successes, challenges and solutions.

5.3 Prepare for Climate Impacts by Improving Water Management

Priority Actions

5.3.1 Seek funding to pay for catchment and storage infrastructure; protect farm-scale watersheds and wetlands; install local weather stations, micro-irrigation and other water conservation practices, e.g., increase organic matter in soils to hold moisture.

5.3.2 Support Islands Trust to quantify agricultural water demand standards for different types of agriculture and to produce a water master plan for each SGI, funding may be available through BC's Infrastructure Planning Grant Program.

5.3.3 Support Islands Trust to produce groundwater sustainability plans such as the North Pender Island Groundwater Sustainability Implementation Plan for each SGI.

5.3.4 Work with farmers, the Islands Trust, CRD and island fire departments to map prime locations for ponds, weirs, dams and other water retention systems to increase infiltration and availability of surface water, develop feasibility studies and implement such structures where practical.

5.3.5 Encourage producers to submit details on climate/water impacts experienced at the farm level to Drought Watch (Agriculture and Agri-Food Canada, 2021) to enhance regional engagement and collaboration on real time reporting of climate risks and to improve planning and implementation of adaptation actions.

5.4 Reduce food waste in the local food system

The two excerpts below set the context for action on the SGI.

"Food loss and waste (FLW) represents enormous economic costs to businesses and society. It also represents enormous environmental impacts and costs. FLW impacts productivity and stifles investment and innovation. The costs of FLW extend to unnecessary transportation, energy, water, fertilizer, machinery and equipment, packaging, labour, and capital invested – just to name a few" (Gooch, M., Bucknell, D., LaPlain, D., Dent, B., Whitehead, P., Felfel, A., Nikkel, L., Maguire, M. (2019). The Avoidable Crisis of Food Waste: Technical Report; Value Chain Management International and Second Harvest; Ontario, Canada)

Wasted food represents GHG emissions invested in food production, transport, waste transport, and decomposition. Wasted food also represents loss of energy and nutrients that could have fed humans, livestock, and crops. Food that is still safe to eat but not considered marketable by retailers can be used for soups, juices, and cooked meals. On Salt Spring, Second Harvest makes such uses of non-marketable food (Salt Spring Island Community Services, 2020). Some produce unfit for human consumption is diverted to local farms and fed to livestock. Some restaurant waste is composted by farmers. Many home gardeners compost their kitchen scraps. But much food waste is shipped off-island because there is no organized system for composting food waste on Salt Spring (Salt Spring Climate Action Plan 2020 to 2030, Transition Salt Spring Society 2021)."

Priority Actions

5.4.1 Adapt the measurement and recording techniques used by the "One Island One Earth - Household Waste Tracking Initiative" on Galiano to record the amount of household food waste generated annually on each of the SGI.

5.4.2 Determine the amount and source of waste in the SGI food system (producers, distributers, retailers, restaurants/food services businesses).

5.4.3 Promote activities such as community gleaning of farms and gardens to harvest, distribute and process seasonally abundant crops for human or animal consumption of surplus or unsalable produce.

5.4.4 Work with SFU's Food Systems Lab on public engagement sessions to create an awareness of food waste based on household data gathered, generate ideas on how it can be reduced, what can be done with unsalable nutritious produce, what "Best Before" dates mean, purchasing only the amount of food that can be used, and inspire action on reducing food waste.

5.4.5 Determine appropriate technologies for processing household and yard waste on a community scale, (e.g. the FoodCycler or others), advocate CRD and Islands Trust to enable community scale composting; explore on farm composting of community waste.

5.5 Increase resilience in food production to prepare for anticipated climate change conditions

Priority Actions

5.5.1 Support GIFC in building partnerships with KPU and other government, educational and research institutions to test farming practices on the SGI that build resilience in traditional crops, introduce robust high value crops, trial new crops, and improve economic viability.

5.5.2 Work with regional and local growers and Seed Libraries to develop seeds with genomic adaptations demonstrating positive survival, resistance and yield characteristics to changing environmental conditions.
5.5.3 Encourage understanding of traditional Indigenous food plants and food harvesting in the SGI.

Goal

6. Improve Access to Information and Education

6.1. Maintain a reliable, updated and accessible knowledge base about the SGI food and agriculture system

Priority Actions

6.1.1. Continue work on the food and agriculture asset inventory developed by the Gulf Islands Food Co-op and put it online as a database (e.g., AirTable) to be updated on an ongoing basis.
6.1.2. Update SGI statistics with 2021 farm census data, when available, to identify trends.
6.1.3. Consider replicating Galiano One Island One Earth food survey on other islands to estimate on and off island food purchases.
6.1.4. Continue collecting GIFC Co-op table information at farmers markets on sales of local food products, volumes, and prices and explore additional opportunities to collect and distribute price information.
6.1.5. Improve understanding of the role of seasonal visitors in the SGI food system by estimating how much of the food dollars spent in our communities are spent by visitors and where.

6.2. Create opportunities for continuous learning for local food growers and community members

Priority Actions

6.2.1. Promote opportunities and benefits of obtaining a post-secondary education in sustainable organic agriculture such as the Bachelor of Applied Science in Sustainable Agriculture offered by Kwantlen Polytechnic University.
6.2.2. Promote a local internship program and hire young people interested in farming to learn new skills by assisting farmers who need help; funding assistance may be provided by Agriculture and Agri-Food Canada.
6.2.3. Integrate food growing, processing and cooking into school classrooms utilizing greenhouses and gardens, farmers and gardeners as guest educators, farm tours, food processing and participatory cooking activities.
6.2.4. Support the work of Indigenous-led organizations such as PEPÁ<u>K</u>E<u>N</u> HÁUTW

Goal

7. Work with First Nations and Indigenous Knowledge

Working with First Nations with traditional territories and interests on the SGI and surrounding waters of the Salish Sea is not only an opportunity to build the food system but is an essential act of reconciliation to foster a resurgence of traditional agricultural and aquaculture practices such as wild plant gardening, clam beds, fish lagoons, reef net fishing, game harvesting, and to jointly develop new practices in response to climate change.

7.1. Seek and provide support for indigenous leadership in restoring and integrating traditional forms of agriculture and mariculture into the SGI food system

Priority Actions

7.1.1. Build working relationships with indigenous people to establish native food gardens such as Nuts'a'maat on Galiano.

7.1.2. Support and expand activities such as the "Feed the People" venison processing event on Galiano, a co-operative effort of members of the Penelakut First Nation, Galiano Conservancy Association, Galiano Community Food Program and the Community Resource Centre.

7.1.3. Support, learn from, and if appropriate, expand the restoration and cultivation of clam/sea gardens as undertaken by the W̱SÁNEĆ and Hul'q'umi'num Nations with Parks Canada.

7.1.4. Work with First Nations to explore the potential for adapting traditional seaweed food harvesting practices to current seaweed farming opportunities in the Salish Sea such as the newly announced project on James Island.

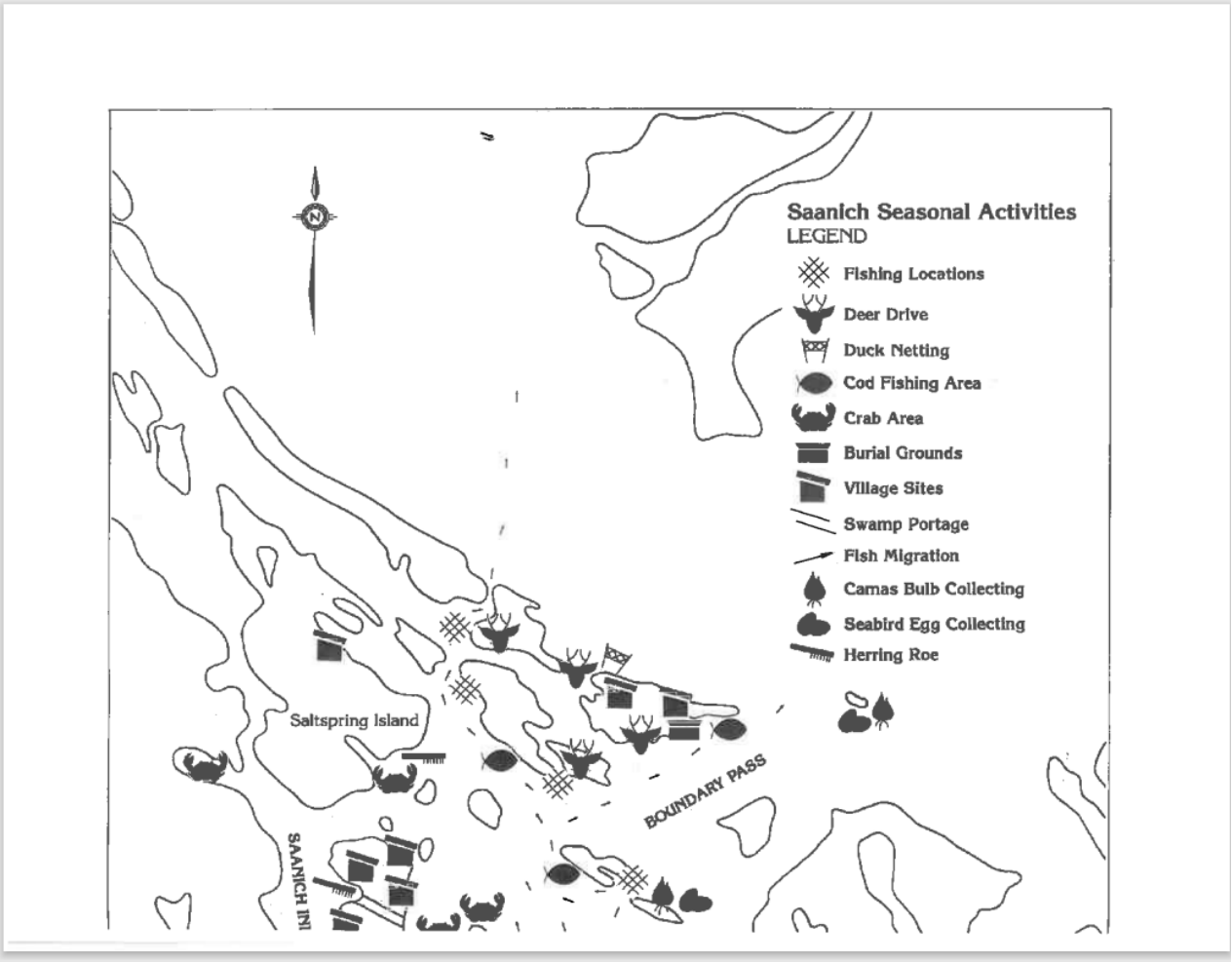


Image 16: WSANEC Traditional Seasonal Activities, from Elliott, Dave, 1983; Saltwater People

Section IV: Implementation Framework

The Implementation Framework consists of seven goals (roughly corresponding to key components of the food system), 20 strategies and 86 actions. That's a lot of actions! A number of the actions are supportive components of a primary action, that if implemented improve the overall effectiveness and impact. Also, this plan affects everyone who eats (all of us) and speaks to a large audience who must get actively involved: island residents, First Nations, visitors, backyard gardeners, small producers, farmers, retailers, distributors, processors, restaurateurs, food and ag organizations at all levels, schools, post-secondary institutions, governments at all levels. All of us must act to effectively deal with ongoing disruption of our food and agriculture system.

Image 17: Cable Bay Farm (Galiano)

Seven priority areas are identified to guide implementation:

1. Establish a leadership team to implement the SGI FAS and LAFAP.
2. Develop and conduct an information campaign on the importance of island communities fully supporting a local food and ag system based on values and consisting of short supply chains, regenerative ag production and local food processing.
3. Produce an economic sustainability plan that focusses on a fair financial return to all in the food system starting with farmers and explores the potential of scaling up production to match or exceed the peak production output of the past on the SGI.
4. Assist producers to adopt and expand regenerative ag practices as soon as possible.
5. Increase local processing and storage capacity.
6. Implement climate crisis mitigation and adaptation measures across the SGI food system
7. Seek engagement and advice from First Nations on local indigenous food system priorities.

The following approach was used when preparing the Implementation Framework[12]:

- The authors assigned priorities, timing and roles based on input from the engagement activities and reviewers; in Phase 2 a more rigorous action definition (using SMART criteria) and prioritization exercise will be conducted with members of food and ag organizations and agencies that wish to participate.

[12] See Appendix 1 for definitions of the acronyms used in the table.

- Not all organizations identified in the implementation table have been involved in preparing this plan, so the assignment of lead and supporting roles will require further involvement of the organizations when the detailed Implementation Plan is prepared in Phase 2.
- Primary responsibility for implementation falls on the FRA/Leadership Group to develop an Implementation Plan in whole or in sequential parts as resources permit. A regular review of the priorities, ranking and timing should be part of the Implementation Plan.
- Where a non-local organization or agency is identified as the lead (for example the CRD or provincial agriculture ministry), the intent is for the FRA/Leadership Group to advocate for the action identified, with support from other local organizations.
- Some of the proposed actions that involve the CRD may be beyond its current scope of work or mandate on the SGI and are meant to initiate exploration of options such as expanding current scope of work or establishing a service or other mechanism that could enable the CRD to provide services and funding.
- If a local organization is identified as lead or supporting, it is not obliged to take action but is encouraged to do so if the action aligns with the organization's mandate, priorities and resources. If the FRA/Leadership Group is identified as the lead or supporting entity, it is intended that the work will be undertaken by a paid person hired by the FRA/Leadership Group.

Making progress on priority actions will better prepare the SGI to deal with disruptions to its food system caused by unexpected events like COVID-19 and ongoing climate change. The Implementation Table below summarizes the goals, strategies and actions from Section III and assigns a priority ranking, a suggested timing, and lead and supporting organizations and agencies.

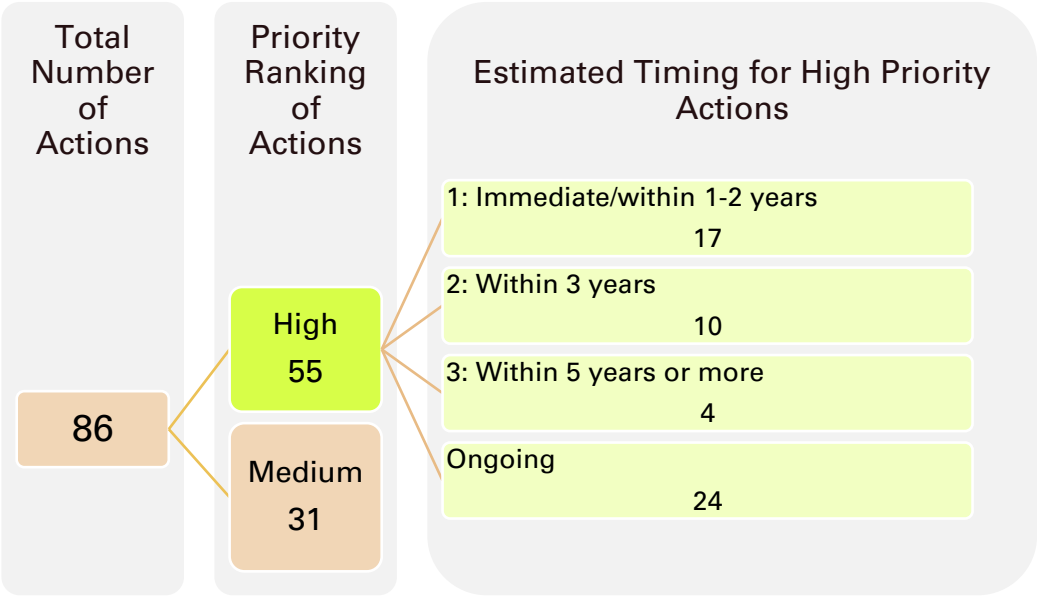


Table 8: Implementation Framework

Goals, Strategies and Actions	Priority	Timing	Lead Organization	Supporting Partners
Goal 1: Establish a SGI leadership group to advance food and agriculture on the SGI				
1.1 Strategy – Use guidance in the SGIFAS, the SGILAFAP and the SSIAA model to establish an implementation leadership group				
1.1.1 Establish the leadership group	H	1	FRA	GIFC, GCFP, PIFI, GIFI, MIAS
1.1.2 Invite local FN participation	H	Ongoing	FRA	FN
1.1.3 Develop a collaboration charter	H	1	FRA	All
1.1.4 Secure adequate resourcing for the group	H	Ongoing	FRA	CRD, CRC
1.1.5 Support and increase capacity of local food and ag non-profit organizations	M		CRC	CRD, CESC, FRA
1.2 Strategy – Establish multiple funding sources to implement the actions in the SGI FAS and LAFAP				
1.2.1 Monitor government funding sources	H	Ongoing	CRC	All
1.2.2 Identify other funding sources	H	Ongoing	CRC	CRD, FRA
1.2.3 Embed ag in CRC economic support framework	H	1	FRA	CRC
1.2.4 Conduct social enterprise feasibility study	M		FRA	CRC, GIFC
1.2.5 Explore donations/fee for service	M		FRA	CRC
Goal 2: Increase Consumer Awareness and Demand for Locally Grown Food				
2.1 Strategy - Work with the "Closing the Supply Gap" initiative to develop a local short supply chain food system anchored by a values proposition				
2.1.1 Appoint leadership group members to the Closing the Supply Gap (CSG) initiative	H	1	FRA	GIFC, PIFI, GIFI, GCFP, MIAS
2.1.2 Build understanding of the values proposition, short supply chains, and the importance of both	H	Ongoing	CSG	FRA, CESC, All
2.1.3 Facilitate wide support for local food and ag production	H	Ongoing	CESC	CSG, FRA
2.2 Strategy - Diversify means for customers to access local foods				
2.2.1 Continue funding GIFC Sales Tables and InfoHubs at farmers' markets	H	1	GIFC	FRA, CESC, MAFF
2.2.2 Test consumer uptake of a variety of marketing and sales approaches	M		CRC	GIFC
2.2.3 Assess potential to expand Farmers' Market Coupon Program and produce SGI farm stand map	H	1	FRA	BCAFM, Mayne & Galiano Farmers Markets
2.2.4 Organize roundtables for producers, retailers, restaurateurs and fishers to meet together regularly	H	1	FRA	All
2.3 Strategy - Improve consumer understanding of the benefits and availability of locally grown food				
2.3.1 Label SGI produced foods and build "brand" awareness	M		FRA	MAFF, CESC
2.3.2 Support SGI food related events	H	Ongoing	CRC	FRA, GIFC, GCFP

Goals, Strategies and Actions	Priority	Timing	Lead Organization	Supporting Partners
2.3.3 Develop culinary tourism and promote in the off-season	M		CRC	FRA, SGITP
2.3.4 Explore ecogastronomy and SGI Geographic Indicator	M		FRA	UVic, CESC
Goal 3: Increase Production of Locally Grown Food Using Regenerative Agriculture Practices				
3.1 Strategy - Improve the economic viability of SGI food and ag system				
3.1.1 Develop an ag economic sustainability strategy	H	3	FRA	CESC, CRC
3.1.2 Enhance ag as a priority for the CESC	H	1	CESC	FRA
3.1.3 Establish a Food & Ag Advisory Commission on each island	M		IT	LTCs, CRD
3.1.4 Monitor government farm support and carbon offset programs.	H	Ongoing	FRA	GIFC, PIFI, GIFI. MIAS
3.2 Strategy - Improve farmer access to key inputs and infrastructure				
3.2.1 Form an Agricultural Land Trust	M		FRA	PIFI, GIFI, MIAS
3.2.2 Assist retiring farmers to prepare succession plans	H	Ongoing	CRC	PIFI, GIFI, MIAS
3.2.3 Address labour shortage and worker housing needs	H	Ongoing	MAFF	CRD, IT, LTCs
3.2.4 Explore Beneficial Management Practices Program for opportunities for SGI farmers.	H	Ongoing	FRA	GIFC, PIFI, GIFI. MIAS
3.2.5 Leverage cooperative action and bulk buying to reduce costs	H	2	GIFC	PIFI, GIFI, MIAS
3.2.6 Assess potential for increased seed production on the SGI.	M		GIFC	CRC, PIFI, GIFI, MIAS
3.2.7 Determine feasibility of cooperative purchase and use of ag equipment	H	1	GIFC	PIFI, GIFI, MIAS
3.2.8 Improve access and utility of existing abattoirs	H	1	CESC	FRA, GIFI, MIAS, GCFP, PIFI
3.2.9 Obtain "Slaughter-Right" training and apply for Farmgate and Farmgate Plus Licenses	H	1	Livestock growers	PIFI, FRA, GIFI, MIAS, GCFP
3.2.10 Explore an ag transportation subsidy	M		CRD	BC Ferries
3.3 Strategy - Share practical knowledge about organic regenerative agriculture				
3.3.1 Develop a regenerative agriculture educational toolkit	M		RAAN	FRA, GIFC
3.3.2 Establish farmer to farmer workshops	H	1	GIFC	PIFI, GIFI, MIAS
3.3.3 Conduct soil health education and undertake pilot projects on improving soil health	H	Ongoing	GIFC	KPU
3.3.4 Inventory and produce video library of successful water management practices on SGI	H	2	IT	CRC, MAFF, CESC
3.3.5 Initiate and participate in restoration projects incorporating indigenous knowledge.	H	Ongoing	GIFC	FRA, CRC, CESC
3.4 Strategy - Build understanding and assess potential of innovative growing systems				
3.4.1 Update information in FAS on greenhouses in SGI and assess feasibility of greenhouses or container systems to extend the growing season.	H	2	FRA	CRC, CESC, MAFF
3.4.2 Explore high yield crops and ag support businesses	M		GIFC	KPU, MAFF
3.4.3 Explore seaweed farming in the Salish Sea as a potential new crop	M		FRA	CRC, MAFF, FN, GIFC

Goals, Strategies and Actions	Priority	Timing	Lead Organization	Supporting Partners
3.5 Strategy - Increase food production in home and community gardens				
3.5.1 Build home garden capacity	H	2	GIFC	GCFP, PIRAHA
3.5.2 Assess feasibility of expanding number of community gardens	H	1	GIFC	GCFP, PIRAHA, MIAS
3.5.3 Support and expand seed libraries	H	Ongoing	GIFC	Seed Libraries
3.5.4 Provide funding to FN for propagation of Indigenous food plants	H	Ongoing	GIFC	CRC, CESC
Goal 4: Increase local food processing and storage of local foods				
4.1 Strategy - Identify and promote opportunities for increased processing of local foods				
4.1.1 Assess current use of facilities	H	1	GIFC	GCFP, PIFI, MIFB
4.1.2 Promote increased use of commercial kitchens and food processing equipment	H	2	CRC	GIFC, GCFP, PIRAHA, MIFB
4.1.3 Assess potential for commercial level processing	M		GIFC	CRC, GCFP, PIFI, MIFB
4.1.4 Increase processing and storage capacity	M		FRA	GIFC
4.1.5 Assess potential of local outlets for more uptake of local production	H	Ongoing	GIFC, FRA	GCFP, PIFI, MIAS
4.2 Strategy - Ensure the SGI communities understand, are prepared for and can respond to major fast acting disruptions to the food supply				
4.2.1 Assess and share community food security storage preparedness	H	1	FRA	CRD
4.2.2 Assess feasibility of shared use of secure food storage facilities on each island	H	3	FRA	CRD
Goal 5: Take Action to Respond to the Climate Crisis				
5.1 Strategy - Provide locally relevant information to islanders about the growing impact of climate change on SGI food security and how to respond				
5.1.1 Promote the findings and recommendations of regional climate action plans	H	2	FRA	CRC, IT, GIFC
5.1.2 Provide input to the Agricultural Policy Framework being developed	H	1	All Organizations	
5.1.3 Provide islanders with a checklist of immediate actions to mitigate climate impacts	H	2	CESC	IAF
5.1.4 Promote increased consumption of plants and foods with low production and processing emissions	M		CRC	Canada's Food Guide
5.2 Strategy - Encourage food growing practices that regenerate soils, ecosystems and communities				
5.2.1 Assist farmers to maintain/restore on-farm ecosystems	M		MAFF	GIFC, PIFI, GIFI, MIAS, Conservancies
5.2.2 Build a roundtable network of food and ag groups to discuss and resolve mutual issues	H	Ongoing	FRA	All
5.3 Strategy - Implement effective methods for water management				
5.3.1 Seek funding to pay for catchment and storage infrastructure; protect farm-scale watersheds and wetlands; install local weather stations, micro-irrigation and other.	H	Ongoing	FRA	GIFC, PIFI, GIFI, MIAS, Conservancies
5.3.2 Prepare a water master plan for each SGI	H	3	IT	MAFF, CRD
5.3.3 Produce groundwater sustainability plans	H	3	IT	MAFF, CRD

Goals, Strategies and Actions	Priority	Timing	Lead Organization	Supporting Partners
5.3.4 Implement surface water retention infrastructure	H	Ongoing	Land Owners	IT, MAFF, Fire Departments
5.3.5 Report climate/water impacts to Drought Watch	M		Farmers	FRA
5.4 Strategy - Reduce food waste in the local food system				
5.4.1 Measure and record household food waste	M		CRD	SFU, GCA, All Residents
5.4.2 Determine amount and source of waste in the SGI food system	M		CRD	All
5.4.3 Promote community gleaning and use of surplus or unsalable produce for livestock or compost	H	Ongoing	FRA	GIFC, PIFI, GIFI, MIAS, GCFP
5.4.4 Conduct food waste reduction public education activities	M		CRD	CESC, CRC
5.4.5 Explore options for on-farm and community scale composting	H	2	FRA, PIFI, GIFI, GIFC, MIAS	CRD
5.5 Strategy - Increase resilience in food production to prepare for anticipated climate change conditions				
5.5.1 Build partnerships to develop resilient farm practices and crops	M		MAFF	KPU, GIFC
5.5.2 Produce seeds adapted to local conditions	M		Farm Folk City Folk	Seed Libraries
5.5.3 Encourage understanding of traditional Indigenous food plants and food harvesting	M		GIFC	CRC, CESC
Goal 6: Improve Access to Information and Education				
6.1 Strategy - Maintain a reliable, updated and accessible knowledge base about the SGI food and agriculture system				
6.1.1 Complete and regularly update the GIFC Asset Inventory	H	2	GIFC	CESC, FRA, CRC
6.1.2 Update statistics with 2021 farm census data	M		FRA	
6.1.3 Replicate "Galiano One Island One Earth" survey on the other islands	M		FRA	GIFC
6.1.4 Continue collecting data from Co-op sales tables at farmers' markets and other price information	H	1	GIFC	FRA
6.1.5. Improve understanding of the role of seasonal visitors in the SGI food system.	M		FRA	SGITP
6.2 Strategy - Create opportunities for continuous learning for local food growers and community members				
6.2.1 Promote post-secondary education in organic sustainable/regenerative agriculture	M		RAAN	
6.2.2 Provide internship opportunities for young people	H	Ongoing	MAFF	PIFI, GIFI, MIAS
6.2.3 Integrate local food and ag activities into the classroom	M		SD64	GCFP, PIFI, PIRAHA, MIAS
6.2.4 Support the local food security work of Indigenous-led organizations	H	Ongoing	GIFC	CRC, CESC
Goal 7: Work With First Nations and Indigenous Knowledge				
7.1 Strategy - Seek and provide support for indigenous leadership in restoring and integrating traditional forms of agriculture and mariculture into the SGI food system				
7.1.1 Establish working relationships with indigenous people; plant native food gardens	H	Ongoing	FRA	FN, GIFC, Island Conservancies, ALL
7.1.2 Support and expand activities such as venison processing	H	Ongoing	GCA, GCFP	FN, GIFC
7.1.3 Learn from and, if appropriate, expand sea/clam gardens	M		FN	GIFC, FRA
7.1.4 Explore expanding traditional seaweed harvesting to seaweed farming	H	2	FRA	FN, GIFC, CRC

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Appendices

Appendix 1: Acronyms

ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
BCARA	BC Association for Regenerative Agriculture
BCAFM	BC Association of Farmers' Markets
CAI	Climate and Agriculture Initiative BC
CRD	Capital Regional District
CRFAIR	Capital Region Food and Agriculture Initiatives Roundtable
CSG	Closing the Supply Gap
ESG	Environmental Social and Governance
FAO	Food and Agriculture Organization of the United Nations
FN	First Nation
GCA	Galiano Conservancy Association
GCFP	Galiano Community Food Program
GHG	Greenhouse Gas Emissions
GIFC	Gulf Islands Food Co-op
IAF	Investment Agriculture Foundation
IOPA	Islands Organic Producers Association
IPCC	International Panel on Climate Change
ITC	Islands Trust Council
KPU	Kwantlen Polytechnic University
LTC	Local Trust Committee
MAAC	Ministry of Agriculture and Agrifood Canada
MAFF	Ministry of Agriculture, Food and Fisheries (BC)
MIFBS	Mayne Island Food Bank Society
PIRAHA	Pender Island Recreation and Agriculture Hall Association
RAAN	Regenerative Agriculture and Agritech Network
SD 64	School District 64
SFU	Simon Fraser University
SGI	Southern Gulf Islands
SGI CESC	Southern Gulf Islands Community Economic Sustainability Commission
SGI CRC	Southern Gulf Islands Community Resource Centre
SGI FAS	Southern Gulf Islands Food and Agriculture Strategy
SGI FRA	Southern Gulf Islands Food Resilience Alliance
SGI LAFAP	Southern Gulf Islands Local Area Food and Agriculture Plan
SGI TPS	Southern Gulf Islands Tourism Partnership Society
SMART	Specific, Measurable, Attainable, Relevant, Time-based
TSS	Transition Salt Spring
VIEA	Vancouver Island Economic Alliance

Appendix 2: National and Provincial Organizations and Programs

This Appendix augments Section I of the report by providing information on national and provincial organizations and programs aiming to promote local food and agriculture in BC, as well as relevant research and reports to date.

Federal Government

The Local Food Infrastructure Fund provides funding for small community-based organizations to allow them to improve their infrastructure and purchase equipment directly related to the accessibility of healthy, nutritious, and ideally, local foods within their community.

BC Farmer's Market Coupon Program, BC Association of Farmer's Markets (federal funding)

Shop Local BC, BC Chamber of Commerce, (federal funding)

BC Government

BuyBC provides information to support buying local BC made products, including the logo program.

FeedBC program and BC Food Hub Network*:* works with institutions, stakeholders and partners across the food service supply chain to increase the use of B.C. foods in B.C. government supported institutions, facilities, programs and services.

BC Ministry of Agriculture Professional Agrologists and extension activities. Professional Agrologists that are the front-line contacts for the ministry. Working with industry, local governments and communities, Regional Agrologists develop long term relationships in the local community, provide strategic extension, and implement ministry programs and initiatives with a client service focus.

National or Provincial Associations:

Farmers for Climate Solutions is a national organization made up of farmer associations, including from BC: the BC Farmers Market Association, Farm Folk/City Folk and Organic BC.

Food Secure Canada is a Canadian alliance of organizations and individuals working together to advance food security and food sovereignty. Priorities are Zero Hunger, A Sustainable Food System that maintains and enhances the quality of land, air and water for future generations, and provide for adequate livelihoods of people working in it, and Healthy and Safe Food.

BC Agricultural Council and Investment Agriculture Foundation represent the interests of farmers and deliver agricultural programs in BC on behalf of the federal and provincial governments.

BC Farmers Markets Association provides support to farmers markets in BC through education, research, and promotion.

Organic BC is a certification accreditation and promoter of organic farming and products

Farm Folk/City Folk is an organization formed in the late 1990's that works to strengthen BC's sustainable food systems. This organization was part of Bean Collective event on Pender in 2021.

Small Scale Food Processors Association, based in Nanaimo

The BC Small-Scale Meat Producers Association represents farmers and ranchers who are raising meat outside of the conventional, industrial system.

Cowichan Green Community Society, (CGC) is a non-profit organization that cultivates resilient, inclusive and healthy local food systems. Their food security projects include policy documents the Cowichan Food Charter and the Cowichan Food Security Plan, and projects related to Food Recovery, fruit gleaning project, community gardens, educational programs and Seedy Saturdays.

Island Good is a place brand to help shoppers easily identify local products (Vancouver Island & Gulf Islands). Island Good is trademarked and licensed by the Vancouver Island Economic Alliance, a non-profit regional economic development organization serving Vancouver Island and the Gulf Islands with a mandate to help ensure a vital and sustainable Island economy.

The Indigenous Food Systems Network Website is designed to allow individuals and groups involved with Indigenous food related action, research, and policy reform to network and share relevant resources and information.

BC Food Systems Network (BCFSN) works to create healthy, just and sustainable food systems in British Columbia by strengthening connections, nurturing capacity, and supporting joined-up food policy at all levels.

Young Agrarians is a farmer to farmer educational resource network for new and young ecological, organic and regenerative farmers in Canada. The Young Agrarians deliver the B.C. Land Matching Program.

Universities

Kwantlen Polytechnic University (KPU) Institute for Sustainable Food Systems works on local food systems issues:

- The Future of Our Food System: Report on the Southwest BC Bioregion Food System Design Project , provides a detailed examination of food self reliance.
- The KPU provides materials on best practices for Farmers' Markets, including a Guide Book: which includes lessons from 15 Case Studies, a Marketing Toolkit:, and a Webinar: .
- The Future of B.C.'s Food System Response to Findings & Recommendations of the B.C. Food Security Task Force.

University of British Columbia (UBC) Centre for Sustainable Food Systems, is a research centre and local-to-global food hub working towards a more sustainable, food-secure future. webinar series.

Simon Fraser University's Food Lab is a research and innovation hub that works on solutions to reduce food waste and support a sustainable food system that enhances ecosystems, conserves natural resources, and mitigates climate change.

Other BC post-secondary education opportunities relating to food and agriculture include:

- University of the Fraser Valley ("UFV"), Faculty of Agriculture.
- Thompson River University, Applied Sustainable Ranching program.
- Vancouver Island University has a Master Gardener Program
- Camosun

Appendix 3: Recommendations from 2017 SGI FAS

The table does not provide a complete listing of all relevant actions, nor does it contend that all the actions identified were a direct result of the SGI FAS.

Table 9: Summary of SGI FAS Recommendations and Relevant Actions

Summary of 2017 Recommendations	Selected Relevant Actions
1. Establish an effective, collaborative structure to deliver and manage the Strategy	Gulf Islands Food Co-op (GIFC) formed in 2017 SGI Food Resilience Alliance formed in 2020
2. Protect and support existing and emerging local food and agriculture activities and interests	SGI food system asset inventory in 2021 Numerous projects to support local food resilience by groups including GIFC, GCFP and CRC.
3. Pursue economic development opportunities and approaches that benefit local food and agriculture initiatives, businesses and activities	Farmers' markets. Co-op Sales Tables, PIFI Wednesday market, Annual Fairs GCFP "Meet Your Maker" Project
4. Undertake a detailed local economic development strategy for food and agriculture	
5. Protect and maintain local farmland	Galiano food forest and Indigenous food forest Backyard gardeners, School and Community Gardens
6. Pursue strategies that increase land available for farming	CRD had KPU prepare a Regional Food Land Trust Business Case
7. Encourage the use of ecological farming practices	Most SGI farmers employ ecological practices. GIFC, PIRAHA farmer workshops Conservancy work
8. Pursue climate change mitigation and adaptation strategies	Galiano Conservancy's "One Island, One Earth" project Recycling, Water conserving irrigation practices
9. Increase opportunities for local food and agriculture education and training	Mayne Island Apple Festival Edu-tourism Galiano food forest and Indigenous food forest
10. Improve understanding and appreciation of local food and agriculture by local and seasonal residents	Pender map of farm stands, Galiano Food Trail map Galiano Grown labelling
11. Connect youth with local food and agriculture	All Islands have a school garden. PIRAHA youth employment and engagement programs
12. Determine state of SGI food system	LAFAP updates statistics and priorities
13. Increase the local production capabilities of the non-commercial portion of the food and agriculture sector	Seed Libraries, Community Gardens, School Gardens, Backyard self-sufficiency gardens
14. Increase local, healthy food choices	Farmers' Markets GIFC Co-op tables Galiano Meet Your Maker Project
15. Encourage a place–based regional food culture by building relationships between Aboriginal and nonaboriginal communities	GIFC Honouring Indigenous Food Creation and Practices learning events (W̱SÁNEĆ) Galiano Conservancy venison butchery workshop (Penelakut) The T̓ET̓ÁĆES Climate Action Project
16. Support Aboriginal food and agriculture-related activities, projects and events.	Connecting with PEPÁK̓EN̓ HÁUTW (W̱SÁNEĆ)

Appendix 4: Detailed Table of Climate Change Impacts on Agriculture

Source: Vancouver Island Adaptation Strategies Plan

TABLE 1 Potential impacts of climate change on agricultural production in the Vancouver Island region

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
▪ Increase in average temperatures ▪ Increase in summer average and maximum temperatures ▪ Increase in number of days above 25°C and 30°C ▪ Decrease in summer precipitation	***Warmer & drier summers*** *(changing hydrological regime):* ▪ Lower summer stream flows ▪ More frequent and extended dry periods in summer	▪ Increase in agricultural water demand ▪ Negative impacts to water quality (e.g., algal blooms) ▪ Reduction in water supply availability and increase in likelihood of temporarily losing access to water ▪ Increase in need for new/improved water storage and irrigation infrastructure ▪ Negative impacts to crop yields and quality (particularly non-irrigated crops)
▪ Increase in annual average and minimum temperatures ▪ Increase in seasonal (winter, fall, spring) precipitation ▪ Drier summer conditions	***Changes in pests, diseases, invasive plants:*** ▪ Increasing number of cycles in a year ▪ Introduction of new pests and diseases ▪ Changing range/ distribution of pests, diseases and invasive species	▪ More frequent and increased damage to crops ▪ Inability to rely on previous pest management schedules and practices ▪ Increase in management costs and complexity
▪ Increase in variability of conditions (including temperatures, precipitation and extremes) ▪ Increase in extreme events (precipitation, heat, wind)	***Increasing variability:*** ▪ Fluctuating and unpredictable seasonal conditions (temperature/ moisture) ▪ Increased uncertainty over frost timing (spring/fall)	▪ Loss of perennial crops to winterkill in cold/dry winters ▪ Damage to crops from extreme temperature fluctuations in late winter and early spring (e.g., negative impacts to blossom set) ▪ Shifting/unpredictable schedule for farm activities (seeding, germination, harvesting, etc.) ▪ Increase in costs to adopt new farm practices/install infrastructure to mitigate risk ▪ Changes to pollinator behavior and in extreme cases, pollinator die-off ▪ Damage to infrastructure and disruption to supply chains from severe winter storms
▪ Increase in average and maximum summer temperatures	***Increase in extreme heat events:*** ▪ Increasing number of days over 25°C and 30°C	▪ Increase in evapotranspiration and crop water demand ▪ Risk of crop damage and loss (e.g., fruit scald and leaf burn) ▪ Negative impact to crop productivity and crop quality ▪ Impacts to livestock health and productivity ▪ Shifting timing of animal husbandry

▪ Warmer winter and spring temperatures ▪ Increase in winter, spring and fall precipitation ▪ Increase in frequency and intensity of extreme precipitation events	***Increase in extreme precipitation (changing hydrological regime):*** ▪ Potential for more rain-driven flood events ▪ Increase in excess moisture ▪ Increase in run off ▪ Increasing flows in major rivers in winter and spring (and in some cases autumn)	▪ Increase in site-specific flooding (and associated crop/ infrastructure losses) ▪ Increase in risk of soil erosion (particularly on stream or river banks) and landslides ▪ Decrease in access to fields and risk of soil compaction ▪ Increase in pressure on flood-protection infrastructure and on-farm water storage infrastructure ▪ Increase in pressure on farm drainage systems (exacerbated by run off from upland development, forestry)
▪ Increase in summer temperatures, reduction in summer rainfall and periods of extreme heat (longer, warmer and drier summers) ▪ Increase in winter and spring temperatures (less snow accumulation, more rapid snowmelt, drier conditions)	***Increasing wildfire risk:*** ▪ More frequent and intensive wildfire events	▪ Negative impacts to animal and crop health and productivity/ yield from smoke ▪ Disrupted access to local services/supply chains/ transportation networks ▪ Damage and losses to agricultural assets and infrastructure (including loss of power for irrigation pumps) ▪ Increase in costs associated with preparing for, managing and responding to wildfire ▪ Lost production during active wildfire and recovery period
▪ Increase in average temperatures ▪ Increase in growing degree days ▪ Increase in frost free days ▪ Increase in winter minimum temperatures ▪ Shift in precipitation patterns	***Changing crop suitability ranges:*** ▪ Changing seasonal conditions ▪ Changing production windows	▪ Increase in risk and costs to take advantage of opportunities ▪ Inconsistent yield and quality of previously suitable crops ▪ Difficulty in identifying suitable crops for changing conditions ***Potential Opportunities:*** ▪ Increase in suitability for new varieties and new crops ▪ Season extension and additional harvest of certain crops
▪ Increase in annual average temperatures ▪ Increase seasonal (winter, fall spring) precipitation and extreme precipitation events ▪ Sea-level rise	***Increasing coastal flood risk:*** ▪ Potential sea level rise of 26–98 cm above mean sea level	▪ Increase in salinity of water table and soil ▪ Migration of salt wedge upstream[84] ▪ Increase in risk of coastal inundation

Appendix 5: Statistics for Southern Gulf Islands Food and Agriculture

This Appendix provides some of the supporting information for Section I.

Climate data: Sources of Emissions for Food and Agriculture

Summary of FAO estimates for Food and Agriculture Emissions in Canada		
Emissions (Gt CO2eq)		
	2019	2019 shares
Total estimated emissions	178.2	% of total
Farm-gate emissions (including electricity use)	99.7	56%
Fertilizer Manufacturing	16.4	9%
Post Farm Gate	62.1	35%
of which:		% of Post Farm Gate
Food Processing	3.6	6%
Food Packaging	5.1	8%
Food Transport	18.2	29%
Food Retail	20.1	32%
Food Household Consumption	7.1	11%
Food Waste Disposal	8.0	13%
Note: does not include emissions for agriculture 'Land Use Change'.		
Source: Pre- and post-production processes along supply chains increasingly dominate GHG emissions from agri-food systems globally and in most countries		
https://essd.copernicus.org/preprints/essd-2021-389/essd-2021-389.pdf		

Summary of Farm Practices reported in census data				
	SGI		BC Coast	BC Total
	2011	**2016**	2016	2016
Share of acreage under no till seeding	10%	**44%**	33%	37%
Share of farms using selected practices				
In-field winter grazing or feeding	28%	**42%**	29%	24%
Rotational grazing	38%	**39%**	30%	27%
Plowing down green crops	22%	**21%**	11%	8%
Winter cover crops	27%	**30%**	14%	9%
Windbreaks or shelterbelts (natural or planted)	43%	**51%**	32%	27%
Share of Farms using Inputs				
Herbicides	7%	**1%**	10%	23%
Insecticides	2%	**1%**	3%	12%
Fungicides	7%	**3%**	4%	12%
Commercial fertilizer	20%	**17%**	26%	32%
Lime	20%	**22%**	14%	7%
Trace minerals and nutrients	x	**10%**	8%	10%
Manure	63%	**53%**	42%	32%
Source: Stats Can census data				

Appendix 6: Complete Recommendations from Selected SGI Food and Agriculture Reports

A. GIFC Southern Gulf Islands Food System Assets and Priority Actions

GIFC DRAFT Road Map of Priority Actions
(with invitation to discuss and refine with actors across the food network).

Theme	What's the problem to solve?	What can be done at a regional or local level?	Who could potentially do it?	What timeframe?	Expected Return on Effort	Effort	Return
Land	Unused arable land	Interview landowners to understand their needs, challenges and possibilities; quantify unused parcels possibly for use	GIFC, PIFI, GIFI, GCFP	Mid-term		M	M
		Connect landowners with Young Agrarians land matching program if appropriate	Interested Landowners	Long-term		L	M
		Advocate to CRD for agricultural infrastructure grants (Community Works Fund or other funds) for fencing, water storage and land improvements	CESC	Long-term		H	M
Farmers/Growers	Not enough of them, and the ones we have can't make a living, or can't find a place to live.	Advocate School District 64 to develop increased food growing and agriculture education at schools; get Ag in the Classroom program on the islands	CESC	Long-term		H	M
		Discuss how to solve lack of housing for farm workers	All	Long-term		L	M
		Find supports for any growers wishing to extend their growing season; match unused greenhouses to willing growers	FRA, GIFC	Mid-term		M	M
		Continue to support Seed Libraries across the islands to improve self-reliance and local provenance	GIFC	Short-term		L	M

		Promote the value of local food and farmers to consumers e.g. promotion campaigns, food festivals, public food forums	CRC	Mid-term		H	H
Services and Supplies for Growers	Limited or no availability and high costs of most services and supplies (e.g. vet, hay, soil amendments)	Enable Growers to collaborate (e.g. coordinate vet visits, hay supply and storage), share equipment (e.g. chipper, bed shaper), share knowledge (e.g. crop health, livestock care etc.), save seeds	Growers, PIFI, GIFC	Mid-term		M	H
	Lack of slaughter facilities	Obtain "Slaughter-Right" training and apply for Farmgate and Farmgate Plus licenses where appropriate	PIFI, GIFI, FRA	Mid-term		M	H
		Advocate Salt Spring Island abattoir to accommodate outer islands in their upgrade plans	PIFI, GIFI, FRA	Short-term		L	M
	Lack of capital to purchase equipment	Apply for funding to purchase shared equipment e.g. poultry incubation and hatching, market garden equipment etc.	PIFI, GIFC, GCFP, FRA	Done		L	H
Transportation	Costly to transport feed and supplies on BC Ferries, and scheduling issues with transporting livestock and other goods between islands.	Advocate BC Ferries to make hay and livestock transportation more manageable	CESC	Long-term		H	M
		Purchase hay in bulk and share among livestock producers	PIFI, GIFI, FRA	Mid-term		L	M
Markets/Customers	Differing demands - some want more locally grown produce while some shop off-island for cheaper prices and more variety	Continue to fund the Co-op Sales Tables and Info Hub Table at Saturday Markets	GIFC	Short-term		L	M
		Support continuation of the PIFI Wednesday market	PIFI	Short-term		L	M
		Diversify sales venues for local growers that also match consumer needs e.g. pilot box programs or pop-up markets; create a	PIFI, GIFI, GIFC, SIFH	Mid-term		M	H

		"Pender Produce" label (same as Galiano Grown)					
		Partner with the South Island Farm Hub to diversify sales to off-island markets, and/or to make use of online sales platform for on-island sales	GCFP, FRA, GIFC	Long-term		M	M
	Lack of connection and understanding between Retail/Commercial and Growers	Continue "Meet Your Maker" event on Galiano, and expand to other islands if desired	GCFP, FRA, GIFC	Short-term		M	H
		Support the proposed Microgreens workshop for Galiano growers to supply restaurants; assess applicability to other islands	GCFP, FRA	Short-term		M	H
Food Processing & Storage	Lack of value-added processing of locally grown produce	Identify needs, barriers, and opportunities for a potential food processing social enterprise	GIFC, FRA	Long-term		M	H
		Increase knowledge-sharing of food processing skills among each island's community	CRC	Mid-term		L	M
		Promote use of existing facilties e.g. community kitchens, food processing equipment	GIFC	Short-term		L	M
		Implement community gleaning and processing workbees, while also ensuring tree pruning and orchard care	CRC	Mid-term		L	M
	Lack of food storage and availability when crisis events occur (e.g. week-long power outages, possible future global crisis events)	Explore viability of a storage facility, or other solutions e.g. pulses and grains can be stored safely for long periods	FRA, CESC, CRC	Long-term		L	L

Waste Reduction and Recovery	Food is wasted in all sectors of the system	Conduct a food waste audit to know type and volumes of waste that could be rescued for human use or processed into animal feeds	CRD	Mid-term		H	H
		Determine viability of community-scale composting facility to keep organic waste on Pender	CRD, Islands Trust, FRA	Long-term		H	H
		Support education of homeowners' backyard composting skills	CRC	Mid-term		L	L
Social Networks	Lack of connectivity, communication, and collaboration within and across islands, and within and across all sectors of the food system	Develop a series of Farm Field Days to address topics of common interest to growers, with guest speakers and agriculture extension scientists	FRA, GIFC	Long-term		M	H
		Strengthen and leverage connections with off-island food and agriculture organizations such as CRFAIR, SIFH, Sandown Regenerative Farm, FFCF, Universities	FRA, GIFC	Short-term		L	M
		Create opportunities for community organizations to connect and discuss successes, challenges, solutions	FRA Roundtable	Short-term		L	H
		Support food festivals e.g. The Crisp, Mayne Apple Festival, art shows, and explore new events such as a food conference	CESC, FRA	Short-term		M	M
Ecosystem Health	Climate change is impacting growers with unprecedented and unpredictable weather extremes. Mitigation and adaptation measures are needed globally and locally.	Advocate MAFF to prepare a water supply and demand model for the islands; funding support for water storage (ponds, tanks)	CESC	Long-term		H	H
		Advocate for funding support to maintain (and/or increase) on-farm ecosystems such as forest, hedgerows, bird and pollinator habitat, ponds and creeks, native species.	FRA	Long-term		H	H

		Secure funding for regenerative practices that improve soil health and sequester carbon; collect baseline soil health measures	GIFC has confirmed a pilot Soil Health program; more funding needed for baseline quantification and program continuation	Short-term		M	H
Culture	Lack of understanding of Indigenous world view and foodways; those who are trying to build bridges find it difficult to overcome cultural barriers.	Develop connections and support collaborative projects e.g. remove invasive weeds and plant native species under Indigenous leadership	Galiano, Mayne and Pender Conservancy Assoc's are already working on this; GIFC could partner on projects with a 'food' emphasis	Mid-term		L	H
		Community organizations to meet and identify specific ways to decolonize, and build relationships with Indigenous communities	CESC-FRA Roundtable	Short-term		L	L
		Support awareness, stewarding and planting of native food plants on private and public lands	Indigenous communities, Galiano, Mayne and Pender Conservancy Associations with support from FRA and interested landowners	Long-term		L	H
		Explore wild foods harvest in a regenerative and non-extractive way e.g. native food plants nursery	PICA, GIFC with WSANEC	Long-term		H	H

B. Recommendations from GIFC Info Table Report

Recommendations for Priorities based on Conclusions from Weekly Reports

As you can see, several recurring themes exist; from these conclusions, I recommend consideration of the following 9 (again, non-exhaustive list of) recommendations for priorities moving forward, in no particular order:

1. Water conservation initiatives would be well supported and are vital in long term food growing. These may include educational workshops on conservation, bulk purchasing of rain catchment systems, lobbying government for allowances or even subsidies for water saving measures (i.e. composting toilets, rainwater water use in homes, etc.).

2. Population growth in the Southern Gulf Islands (SGI) will increasingly stress not only our finite natural resources, including water and soil, but also our social resources, such as housing and labour. Conversations to discuss long-term solutions AND implementing the decisions into necessary actions is key for true community resilience.

3. The realities of growing food commercially in the SGI need to be better understood by the community at large. Educating consumers about how the global food corporations externalize costs of production onto low wage labour, unethical treatment of animals and devastation of the environment VERSUS how the local food producers are transparent in their valuation of cost of production (i.e. paying a living wage to labourers, often not paying themselves, providing safe conditions for staff and livestock, using quality feed for livestock, using organic growing methods in the soil, using water responsibly, etc.) would be one step toward a better understanding.

4. A successful and resilient local food economy needs a strong system of supports available in the community. These include access to land on which to grow and from which to sell food, affordable housing to access and retain sufficient trained labour, local businesses to employ and retain consumers and to provide necessary materials for food growing, etc. If foodlands are prioritized by local and provincial governments, solutions to current inadequate supply of supports will become part of the larger conversation about food system resilience. Therefore, lobbying governments to prioritize foodlands is important.

5. Home gardening continues to be a valuable aspect of SGI food security. While many home gardeners grow only a very few plants for themselves, the possibility that these gardeners may expand their skills and production to share with family, friends, and neighbours is an important stage to eventually increase capacity toward small scale commercial production, if they so choose. Encouraging any sort of initiatives to help more people to begin gardening as a hobby and to continue food growing as a lifestyle would likely garner significant support. Similarly, offering assistance to established growers in the form of free products or services would also go a long way to increasing the food growing potential of the SGI.

6. Seed saving is an important aspect of food system resilience, as having a regionally adapted seed stock for SGI guarantees our food growing ability amidst a changing climate. Seed saving also allows for a very personal connection to local food, as the saver chooses the plant, takes the time to carefully harvest and dry the seeds, stores them safely and then plants them again, and the cycle continues. Therefore, further encouraging seed saving efforts is a simple way to bring people into the local food security movement from the comfort of their own gardens.

7. True food system resilience, both in terms of consumer expectations and producer capabilities, needs definition in order to set a target for which to strive. (i.e. we are likely not going to grow avocadoes, so at what point does the conversation address the desire for certain foods in terms of local food production vs. food production for survival.) What does resilience or food security mean in terms of our organizational goals? Does it need definition, or can it mean many different things to different people? (ie Food security in relation to a food bank would be making sure that a client has access to nourishing calories, often dried pasta, flour, sugar, rice, milk, etc. which cannot be produced sufficiently (if at all) in the SGI; food security in relation to, say, the GIFC would be knowing that enough food could be produced in the SGI to sustain the population, but what does ENOUGH even mean?) Therefore, some definitions and targets around food security could be helpful in both short and long term community resilience planning.

8. People interested in local food system resilience need more pathways to get involved, as community groups and meetings are not necessarily tailored to everyone's taste. At the same time, online content from local food related groups is often not widely shared and appears sporadic due to lack of resources to upkeep webpages, social media accounts, etc. Therefore, community engagement using online resources is a way to inform many people of efforts being made toward strengthening local food system resilience. Similarly, assisting growers with their online presence would also likely have a positive impact on consumers accessing local food.

9. Indigenous perspectives were completely absent from this project, as no participants identifying as First Nations were spoken to at any of the Farmers' Markets. This is a glaring omission, as all of the recommendations above refer to ways in which we build community and value the land for providing us our sustenance. Moving forward, this project (and truly all projects) should seek to out ways to engage local Indigenous residents to better understand their food growing priorities.

C. Recommendations from A Wider Lens and Meet your Maker (GCFP)

Much of what was worthwhile about these two projects could likely have impact on the other Southern Gulf Islands as well. The recommendations below are divided into those that would likely resonate on the other individual islands, and those that could be addressed at a regional level.

Recommendations for other Southern Gulf Islands

1. Surveys
   Much of the success of these GCFP projects was because they involved significant consultation with Galiano's food producing community to determine what action would be effective. As such, the CESC may want to start by conducting outreach on the other islands to assess what needs are the highest priority. This could build on the GCFP work in one of two ways: using the survey templates that the GCFP used (e.g. "Which of the following 10 challenges are you facing?"); or rolling out a simplified survey that aims to confirm if the issues and priorities identified on Galiano (as well as the suggestions for action items below) resonate on the other islands (e.g. "Rate the following 3 challenges in order of priority for you.").

2. Farmfolk/Cityfolk Community Supported Agriculture (CSA) Webinar Series
   In the surveys, Galiano growers identified an interest in getting support setting up a CSA. Growers on the other islands may also be interested in learning more about this marketing model. Although the Farmfolk/Cityfolk Webinar Series has ended, perhaps they could be persuaded to run it again if there is sufficient interest on the other islands. Alternatively the series may have been recorded and could be distributed for people to watch on their own time (but with less interaction)

3. Gulf Islands Food Co-op Table (GIFC) promotion
   In the surveys, Galiano growers expressed interest in a space where they could drop off produce and it is then sold for them. The GIFC already offers this service but it seems as though some Galiano growers weren't aware of it, or didn't have enough information about it. This might be true on the other islands as well. The GCFP was able to raise the profile of the GIFC via the Meet Your Maker event, where growers were able to connect directly with GIFC personnel, but other approaches that would also be effective might include an (in person or online) open house with GIFC for all growers in the region.

4. Local Label
   In the surveys, Galiano growers indicated a strong desire for support with marketing products cooperatively with other farmers on Galiano or in the region, to Galiano grocery stores as well as other markets. As a result, in the months since, the GCFP has ramped up promotion of the Galiano Grown label program and has seen much higher uptake of this program. The other islands may benefit from rolling out similar label programs in their communities.

   The Galiano Grown label was launched in 2018, after design and wording consultation with growers, and saw modest uptake in the first few years. There is one version of the label for growers to use, with a call to action to ask for more information about growing practices, and another version for restaurants and grocery stores. The label is available as a poster, a table-top tent card, a rack card (used on grocery shelves), and as stickers for products.

   The purpose of the label is to promote buying local, to spark educational discussions between buyers and growers about growing methods, and to raise awareness and appreciation of the sustainable growing practices that Galiano's growers are using. A side benefit of the label is that, to some extent, it holds farmers accountable for their growing practices bringing them to the forefront of discussions with customers.

   One Galiano grocer has used the labels regularly since the program rolled out, and it's also used at the Saturday Market and farm stands, and various restaurants. (See Appendix D for pictures of the label.) The feedback has been positive—residents say that they love knowing which products are raised and grown right here on the island. The pandemic has brought a renewed interest in local food which has made this a great time to refresh this program. This year, as a result of the promotion of the label (in our local paper, by email, and as part of the Meet Your Maker pre-event surveys), there are 15 restaurants, growers and grocers who have requested labels. As some other vendors may have labels leftover from previous years, the number participating in the program this year may well be higher. As the use grows, the recognition of the image grows, and the impact increases accordingly.

5. Support Accessing Government Emergency Financial Programs
   Although growers didn't express a desire for support in this area, restaurants responding to the COVID-19 survey did indicate that they could use support accessing government emergency financial programs. The GCFP hasn't done much to assist in this area, but perhaps the Community Resource Staff on each island could reach out specifically to island restaurants to offer assistance with accessing government programs.

6. Meet Your Maker Events
   Events held on each island that were roughly equivalent to the event held on Galiano would likely be of similar benefit in those communities, providing an opportunity for networking and collaboration both among growers, and between growers and food vendors. The specific focus

of the event might vary from island to island, depending on the life cycle of the food community on each island. Themes might include:

- Meet and greet, so that growers can connect with other growers, and also so that growers and vendors can connect with one another and explore opportunities for partnership.
- What does each party (growers/fishers/foragers and grocers/restaurants/markets) need from the other to increase local food access?
- How to improve communication and collaboration among growers, including ways that growers could share information and tips, coordinate growing plans (so as to not duplicate timing and varieties), discuss pricing, and/or explore co-operative approaches to marketing.
- How to improve communication between growers and vendors, so that vendors know what is available and growers know what products are desired. Late fall 2021, in the growers' and vendors' off-season, is probably an appropriate target window for these events. The Ministry of Agriculture offers funding through their Knowledge Transfer program that may be available to cover expenses for these events event:
- https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/knowledge-transfer-events

Recommendations for Regional Action

1. Regional Meet Your Maker Event
   There was interest in the surveys for support with regional marketing. Once island by island Meet Your Maker events have been held, it may be beneficial to host a region-wide event with a similar focus. This would provide a forum for restaurants and grocery stores to learn what products they can't source on their own islands might be locally available, and to start to build connections with those growers.

   Although some kind of catalogue could also serve this need, the relationships are at the heart of these partnerships and an initial face-to-face connection will go a long way to fostering those relationships.

2. Bulk Buys of Inputs
   Some agricultural inputs are hard to access from the islands, and the overhead of travel is a drain on both time and finances for growers. Coordinated purchasing, with delivery, would help reduce those burdens on growers. In particular, the issue of hay is very much one that warrants consideration at a regional level. Addressing the hay needs of all four SGIs at once might provide the economy of scale needed to find a viable solution. Similarly to this, there may be equipment that could be purchased for use across the region.

3. Training Opportunities
   Some training and professional development could be coordinated regionally. Our communities' new facility with remote tools (e.g. Zoom) as a result of the pandemic provides an opportunity to offer such opportunities to the entire region and take advantage of economies of scale that may be available. For example, the Microgreens workshop that GCFP is considering offering could be offered to growers on Pender Island. (Mayne has an established microgreens business, and Saturna might not be a large enough market to sustain a microgreens business.) This is especially suitable because the transportation challenges mean that a grower who launches a microgreens business on one island isn't likely to be competing with growers on other islands who may be interested in a similar venture. A valuable side benefit of this type of activity is that it is likely to offer opportunities for regional connections between participating growers, and the event could be coordinated in such a way as to foster those relationships (e.g. meet and greet component built into the schedule). The Mayne Island microgreens business,

Christina's Garden, is run by Christina Petchloff, who has also offered to provide a session on her experience.

4. Meat Processing
   The lack of an on-island meat processing facility that Galiano growers deal with is a challenge also faced by growers on Mayne and Pender, and is another area that needs regional consideration. The Pender Island Farmers' Institute recently applied for CERIP funds to support a mobile abattoir that would serve all three islands, however, their application wasn't successful. (CERIP opted to fund improvements at the SSI abattoir.) Perhaps a second application to another funding program or intake would be successful.

5. Veterinary Services
   Saturna and Galiano don't have on-island vets. While Pender and Mayne Islands do have veterinarians, (and the Mayne Island vet offers a regular clinic on Galiano) none of the four islands have a vet that specializes in large animal care. The large-animal vet on SSI does come to Galiano (and perhaps to the other islands as well) but her visits are sporadic and there is no one currently coordinating with the growers to ensure that they are aware of these visits and able to take advantage of them. Preventative medicine (vaccinations, worming treatments) are required on a fairly predictable schedule. Husbandry producers on all four islands might benefit from some coordination of these services, scheduling them well in advance on a regular schedule, and ensuring growers know about them and can access care if needed. In addition, vets are limited in their ability to offer over-the-phone emergency support for patients they haven't seen face to face within the last year, but having had a single in-person appointment means there may be options such as prescription medicine, without the requirement of an emergency visit.

   There are other long-standing issues that are well-known within the region, and that came up again during these two GCFP initiatives. Although there are no specific suggestions about how to tackle these concerns, it is important to keep them at the forefront of any discussions about how to address regional agricultural needs. They include:

6. Aging farmers

7. The lack of affordable housing

8. Limited access to arable land

9. Limited and expensive transportation options, especially between the Southern Gulf Islands

One final thought - For the most part, this report is focused on professional growers. There are also opportunities to increase local food security through amateur growing as well.

Appendix 7: Summary of Results From Engagement Projects

A. Mayne Island Apple Festival (MIAS)

This annual free Festival occurs on the last day of the seasonal farmers market (Thanksgiving weekend) and attracts hundreds of people. It hosts the "Community Squeeze" where community juicing equipment run by volunteers produces juice for residents who bring in their apples for juicing. There are several apple related attractions including the Apple Showcase where 158 varieties of apples grown on Mayne are displayed, a vote for Mayne's Best Tasting Apple, experts provide advice on apple growing and apple identification. There is apple juice and cider tasting by donation, lively music and other events to celebrate and inform on the importance of local food production. Everything is run by volunteers and proceeds go to the Food Bank. The Festival operates from annual grants or revenue generated by holding spring workshops, which though also by donation, do sometimes generate funds beyond costs.

B. Seed Libraries (GIFC)

There is increased interest on the islands in saving seeds and being more resilient in seed supply ever since COVID-19 supply chain issues led to shortages in 2020. Seed libraries require librarians and growers to be knowledgeable about how to save, clean and store seeds. The GIFC supports the seed libraries with inter-island coordination, assistance with promotional materials, and educational opportunities and workshop planning.

In 2021, GIFC coordinated the Inter-Island Seed Saving workshop with Farm Folk City Folk on Pender to learn about seed cleaning equipment, and other information and tools for seed saving. The public workshop was well attended, including members from Pender's Bean Collective and the Seed Library of Galiano. In addition to the report included in the separate Report Appendix, two videos were made and are posted on the GIFC website.

There are plans to repeat the session next year, possibly rotating to a different island so the benefits and opportunities are shared. In the future, budget will need to include facility rental (which was donated this year) and video production, and FFCF will likely require a fee for their service.

C. Galiano Gleaning Project (GCFP)

The Gleaning Project organizes groups of volunteer pickers to pick excess fruit (and sometimes vegetables). The harvest is divided 3 ways: One third for the landowner, one third for the Food Program, and one third divided amongst the picking volunteers. The Food Program share is used in GCFP events, as well as distributed via the clinic, school and food bank. GCFP coordinates landowners and pickers, schedules harvest times, weighs everything, and keeps an accurate record. Stats for 2021 season show 48 active community members, 25 picking sessions, 17 picking sites, 1,967 lbs of fruit picked.

D. Galiano Garlic Co-op (GCFP)

The Galiano Island Garlic Co-op is a group of garlic enthusiasts who collectively grow organic garlic in a shared plot. Coordinated by the Galiano Community Food Program, the group shares the work of bed-preparation, seeding, weeding, mulching and harvesting, and shares the harvest. They also explore various soil-building and composting techniques. The group meets once a month and each member's

share of the harvest is calculated based on the hours they contribute plus any contributions of organic matter and mulching materials.

In 2021 the Garlic Co-op consisted of 14 members who planted over 1000 heads of garlic, growing in rotational plots on their fifth year at this specific site. They planted organic garlic seed saved from harvest of Fall 2020, and harvested this year's crop in June/July in addition to the garlic scapes earlier in the spring. The main challenge of this season's co-op was the significant diagnosis of white rot, which renders the plants much less likely to cure and store with some bulbs inedible. This experience underlines the need for contingency plans and financial set-asides for setbacks and crop failure.

E. Native Food Plants Project (GIFC)

This project involves outreach to W̱SÁNEĆ communities to develop a project to increase local knowledge about edible native plants in a way that is created and led by indigenous traditional knowledge keepers. This project is still underway and further reports will be provided as they become available.

F. Countertop Gardens Project (CRC)

This pilot project contributed countertop gardens that are self-watering and equipped with LED grow lights to those interested, to provide an opportunity for any community member to try growing greens and herbs indoors all year round. Lessons from the project indicate that many Gulf Islands seniors are able to maintain their garden to a certain degree and don't require the countertop units. Food Bank participants were interested to try the units, but follow-up on results was complicated by privacy issues.

The project coordinator found that the kits were successful in growing salad greens and herbs. However, due to lack of follow-up it was difficult to conclude the usefulness of the gardens. One participant mentioned that they would be more excited to use a countertop garden in the winter months.

G. Microgreens Workshop (GCFP)

GCFP is planning a Microgreens workshop. Mayne has an established microgreens business, Christina's Garden, who has offered to provide a session on her experience. Transportation challenges mean that a grower who launches a microgreens business on one island isn't likely to be competing with growers on other islands. Workshops like this offer opportunities for regional connections between participating growers, and can be coordinated in such a way as to foster those relationships (e.g. meet and greet component built into the schedule).

Appendix 8: Webinars and Virtual Conferences

Capital Daily – "Food Security on Vancouver Island – A Panel Discussion" November 18, 2021 (https://youtu.be/bfCvX16Dnfl)

Cascadia Seaweed "Seaweed Days Festival" May 16 -23, 2021 (https://www.youtube.com/channel/UCDoKM87sc4l8DSWBd7sw8uQ/playlists)

FarmFolk CityFolk – "Cover Cropping" October 28, 2021 (https://farmfolkcityfolk.ca/2021/10/cover-cropping-webinar/)

Galiano Conservancy Association – "Ecogastronomy" March 14, 2021 (https://www.youtube.com/watch?v=lqeFMwzxql4)

Globe and Mail – "Food Waste- How Can Canada Do Better?" May 18, 2021 (https://www.theglobeandmail.com/events/article-reducing-food-waste-in-canada/)

Greenwave – "Kelp Farming 101" September 24, 2021 (https://www.greenwave.org/ocean-farming-hub)

Growcer – Container Farming 101 Series (https://www.thegrowcer.ca/webinars/2021/7/2/container-farming-101)

Islands Trust – "Groundwater Sustainability Presentation" September 7, 2021 (https://islandstrust.bc.ca/document/groundwater-sustainability-presentation/)

Ministry of Agriculture, Food and Fisheries – "regenBC" Conference September 27 – 29, 2021 (https://www.youtube.com/playlist?list=PLziRX0snlnGpArFKemfRS3LFNfcGnkJDM)

Seed Library of Galiano – "Cover Crops for Sustainable Agroecosystems" October 24, 2021

Transition Salt Spring Island – "Let's Grow Together! Victory Gardens for Climate Resilience" June 9, 2021; " "Let's Beef Up Our (Food) Security: Building Healthy Abundant Food Systems" May 19, 2021

University of British Columbia – "Future of Agriculture" Webinar February 5, 2021 (https://trekmagazine.alumni.ubc.ca/2021/webcasts/future-agriculture)

University of British Columbia – "Building Resilient Food Systems During COVID-19 and Beyond", 2020; https://www.youtube.com/playlist?list=PLa0Gpcf5WSNSez0r0siwCttye2awgbZt0

University of Victoria – "Plants, Places and People: Lessons in Stewardship and Reciprocity" Dr. Nancy Turner April 7,2021

Vancouver Island Economic Alliance – "State of the Island Economic Summit" October 26 – 28, 2021 https://ubcfarm.ubc.ca/june-11-decolonizing-the-land-and-food-system-indigenous-resilience-in-times-of-crisis/

Appendix 9: Closing the Supply Gap - Values Proposition

"Closing the Supply Gap" is a BC Capital Region initiative by CRFAIR with the goal to create a values-based local food system that differentiates local food from industrial and creates a robust, sustainable local food economy.

FAO defines sustainable food value chain as follows:
"A food value chain (FVC) consists of all the stakeholders who participate in the coordinated production and value-adding activities that are needed to make food products.
A sustainable food value chain is a food value chain that:
• is profitable throughout all of its stages (economic sustainability);
• has broad-based benefits for society (social sustainability);
• has a positive or neutral impact on the natural environment (environmental sustainability)
The SFVC concept recognizes that value chains are dynamic, market-driven systems in which vertical coordination (governance) is the central dimension and for which value added and sustainability are explicit, multidimensional performance measures, assessed at the aggregate level."

The Closing the Supply Gap project is using an interpretation of food value chain that includes a "shared values" component where there is "agreement along the supply chain on a particular set of common values that provide a sense of equitable support for each level of the system from producer through final distribution to eaters. … A key is emphasizing how each individual/entity is appreciated for the value they add and how they are fairly compensated for their contributions (Deller, Lamie, & Stickle, 2017)." From closing the supply gap leadership report (not published).

The chart below illustrates the priority values identified by the Closing the Supply Gap project and presented as a framework for making change. The position of 'Culture' across the top indicates that local food culture is the glue to hold these values together. The values that define the local food culture are diversity, sustainability, and knowledge. These concepts form the foundation for building a value-based local food system and will provide the screen to critically assess the approaches, strategies, and components that need to be put in place to address the problems. (CRFAIR Closing the Supply Gap http://www.crfair.ca/closing-the-supply-gap).

Figure 4: Closing the Supply Gap Priority Values