

Toward a Resilient Food System for Bowen Island:

Communication and Engagement Groundwork Report

Bowen Island Food Sovereignty, August 2019

Acknowledgements

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We acknowledge that this place called *Nexwlélexm* is also known as *Xwlíl'xhwm* and was named Bowen Island by settlers. *Nexwlélexm* is located within the unceded territory of the Squamish Nation. The writers of this report wish to express their gratitude to all the ancestors and spirits of this land for their thousands of years of stewardship in right relationship to the land and sea.

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Introduction

The main way that most people will experience climate change is through the impact on food: the food they eat, the price they pay for it, and the availability and choice that they have.

—Tim Gore, Head of Food Policy and Climate Change for Oxfam

Here on Bowen Island, we are not immune to the impacts of climate change. We need to address the impending challenges and inevitable disruptions to food systems that such global changes bring. In response to these threats, Bowen Island Food Sovereignty (BIFS), launched its *Toward a Resilient Food System for Bowen Island* initiative in March 2019.

BIFS is one of several groups and many individuals that are concerned about food, climate and community resilience on Bowen Island. BIFS' aim has been to inspire the community's confidence in working together to figure out how to create a more resilient food system that serves all residents. The initiative relies upon the efforts of many people and has begun to identify strategies to be adopted and implemented by community groups, businesses, municipal government, and individuals.

This report documents the engagement groundwork BIFS conducted between March and August 2019 to assess attitudes and beliefs about the local food system, and the state of natural resources and land use on the island. In addition to the *Communication and Engagement Groundwork Report*, Julie Sage, M.Sc., A.Ag. has produced an in-depth overview of natural resources, land use and food production on Bowen Island called *The Agrarian Analysis*.

Together, these two reports constitute the culmination of our groundwork, which will be presented to the community at a Climate Conversation in September 2019. They will also be the foundation of the next phase of BIFS' work: to outline specific, achievable goals and timelines that are responsive to the changing needs of the community.

This *Communication and Engagement Groundwork Report* was produced collectively by BIFS volunteers. You may notice differences in tone or style from one section to another. Finally, in this report, you will notice that some sections are more fully developed than others. This is a reflection of the amount of interest and information collected from the participants. We pursued our inquiry into waste management (compost) and food production with many questions in all three formats (survey, workshop, and interviews) and that produced more information than the remaining topics and sections of the report. For example, the sections about water catchment, pesticides, and emergency preparedness are shorter. These subjects are of equal importance to the others, and we hope to secure funding to explore them further.

Strategy and Methodology: Why, How & Who

For any community-wide initiative to be successful, it needs to serve clearly identified community needs and respond to them. To determine a community's needs, identify ways to meet them, and build momentum for implementation requires an ongoing engagement strategy.

With this in mind, the engagement groundwork for this initiative included a variety of activities: an online survey, facilitated stakeholder workshop, outreach at the weekly Farmers' Market, educational presentations, and one-on-one interviews. Bowen Island Food Sovereignty's aims were to gain knowledge about and stimulate interest in the local food system while gathering data and fostering relationships.

Guiding BIFS' engagement approach is our belief that the resilience we are hoping to create depends upon diversity and healthy networks, just like nature itself.

The groundwork employed a variety of communication channels to invite broad participation and collect diverse opinions. Information was communicated through newspaper articles, social media, workshops, information tables and presentations.

Guiding BIFS' engagement approach is our belief that the resilience we are hoping to create depends upon diversity and healthy networks, just like nature itself.

Insofar as the entire *Toward a Resilient Food System for Bowen Island* initiative relies upon collaboration for success, it was important to build upon prior efforts while also inviting new energy and ideas. Honoring that precept, BIFS' groundwork, especially the interviews, included learning from individuals who have been invested in agricultural activities on the island, some for many decades.

BIFS sought the participation of these stakeholders, as well as that of the community at large, to generate ideas and cultivate a sense of shared purpose. As the initiative proceeds, a broad base of support, general understanding, and collaboration will be essential for policy development and the adoption and implementation of key objectives.

2.1 Systems Change Methodology

During the year leading up to this study, Bowen Island Food Sovereignty focused primarily on education of its members and the public, publishing more than a dozen newspaper articles and leading (or co-sponsoring) presentations and workshops about soil, permaculture, and regenerative agriculture. Beginning in March 2019, because of

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grant funding and project management provided by Julie Sage M.Sc., A.Ag, BIFS was able to pursue a more dynamic course, introducing the *Toward a Resilient Food System for Bowen Island* (TRFS) initiative.

TRFS is rooted in a three-pronged, systems-change approach utilizing communication and engagement, education, and policy. This first phase, which includes the engagement groundwork and an agrarian analysis, is a foundational inquiry that sets the stage for future planning and policy endeavours, for which BIFS currently seeks funding.

BIFS used three information and data gathering methods: an online survey, a stakeholders' workshop titled 'The Future of Food,' and one-on-one interviews. For interpreting the results, BIFS used a method called "sensemaking." Sensemaking helps to capture complex ideas and information from many sources and organize it into meaningful categories. Done well, sensemaking preserves differences of opinion and helps to surface new ideas without reinforcing the assumptions of those who are conducting the research.

BIFS was fortunate that two experienced practitioners of sensemaking, Dave Pollard and Chris Corrigan, were available to give advice on the design and interpretation of the survey, workshop, and interviews

2.2 Engagement Activities

Online Survey

Bowen Island Food Sovereignty's members opted to use the Survey Monkey platform for an online survey titled, *The Future of Food on Bowen Island*. The survey consisted of 19 questions, of which two collected demographic information – the respondent's age and whether or not s/he resided on Bowen full time. While not everyone completed all the questions, 220 surveys were submitted in five weeks time (May 13th to June 20th). If there was only one respondent per dwelling, approximately 12% of Bowen Island households answered the survey. BIFS also collected 99 email addresses for future communications. The list of the survey questions are in Appendix A.

The survey was distributed through media channels that appeal to people involved in community organizations and activities, some of which specifically address food, climate, or natural resources. Thus, people who self-selected to take the survey were likely already interested in the subject of food and their interest (and knowledge) might not be the same as the population at large.

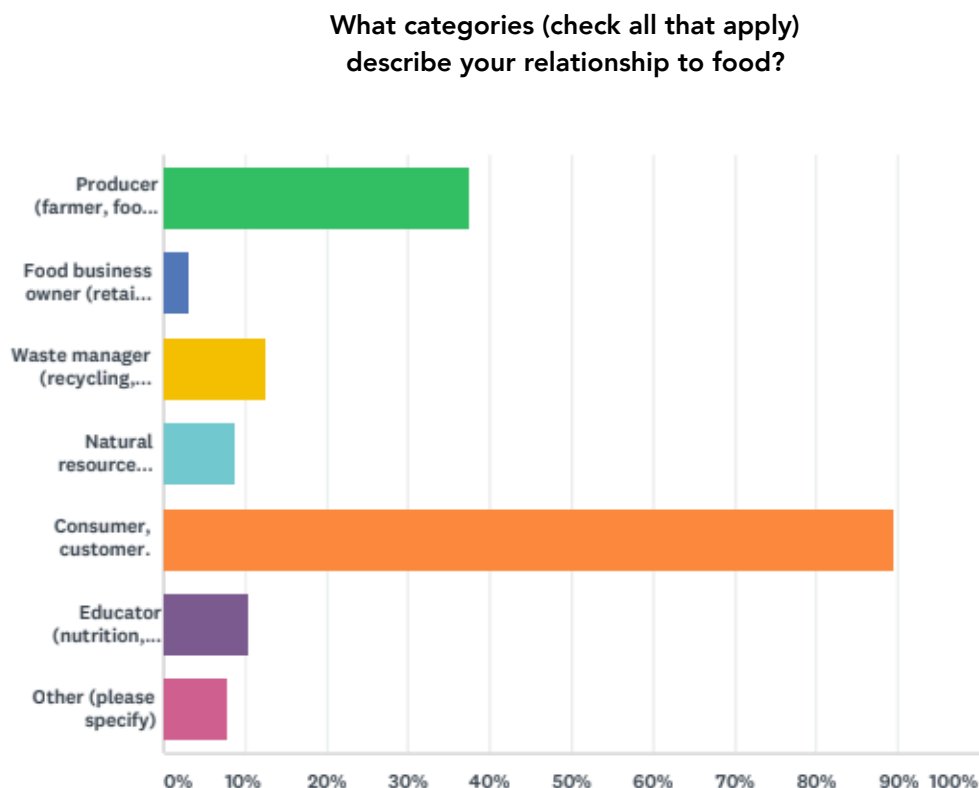
For instance, when asked to describe their relationships to food, 90% of survey respondents checked "consumer, customer," 38% chose producer (farmer, food gardener, fisher, forager), 13% waste managers (recycling and garbage), etc. And the 8% who selected "Other" wrote in a variety of answers: "residents making inroads to growing food," "hunters," "very small-scale food gardener," "amateur family producers," as well as "sustainability professional."

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The final survey questions collected demographic information. Ninety-four percent of the respondents reported to be full-time Bowen residents. In terms of age, 46% of respondents were between 30 and 49, 43% were between 50 and 69, 9% were between 70 and 90+ and only 2% were between 18 and 29.

Considering the distribution channels and participation rate for the survey, the resulting graphs and answers are more anecdotal and qualitative than quantitative.

Before designing the survey or interpreting its results, BIFS met several times with Dave Pollard to gain a better understanding of the sensemaking process.



It was recommended to use open-ended questions so that we could capture responses that weren't framed by the bias inherent in questions that offer only a limited number of answers, as in multiple choice. When compiling the answers, we were advised to identify somewhere between 6-10 themes and to organize what we heard into these thematic categories.

In the end, 5 of the survey's questions were open-ended and another 5 invited written responses (using prompts like "Other?" or "Please describe"). The 19-question length may have influenced the completion rate, which was ranked at 77% overall.

Themes that emerged at the Stakeholders' Workshop formed the core of sensemaking and were used to interpret information gathered using all three engagement methods,

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the online survey, workshop and interviews.

In addition to finding insights that supported the themes, we looked for dissenting opinions. Dave recommended that we “look carefully for ‘outliers’, that is, for ideas that no one else is talking about. These can be very important, and it’s a good idea to take note of them.”



Bowen Islanders participating in this summer's permaculture workshop.

The Future of Food Stakeholders' Workshop

In preparation for the workshop, Bowen Island Food Sovereignty identified 94 stakeholders to invite. These stakeholders offered a range of perspectives on the local food system including: food production, retail/distribution, policy, advocacy, natural resource management, and waste management. Twenty-five of the identified stakeholders attended the workshop, held on Friday, May 24th in the early evening, along with six members of the BIFS group. The number of participants, listed by category can be found in Appendix B.

The workshop was facilitated by Chris Corrigan, a Bowen resident with international credentials for a 'systems-change' approach to facilitation. Bowen Island Food Sovereignty members met beforehand with Chris to design the World Café-styled workshop, and afterwards to extract themes and ideas for follow up.

Participants moved between tables in small groups, sharing evaluations, insights, and responses to three questions:

- How do you contribute to food security on the island?
- How do you contribute to food insecurity?
- Does anyone have an idea or initiative they feel strongly about that they would like to champion?

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THEMES GROUPED FOR FUTURE ACTION

In response to Chris' final question, groups convened around one of five initiatives suggested by participants: Housing for farm workers and small businesses; Ways to extend the growing season on Bowen; A 'Buy on Bowen' currency art project; An on-island digester composting system; and Food preservation.

This pictograph shows the themes that emerged from the sensemaking process during and after the workshop. BIFS continues to check in with the five "Activator Groups" that were formed at the workshop. (See diagram below.)

Comments from the Stakeholders' Meeting:

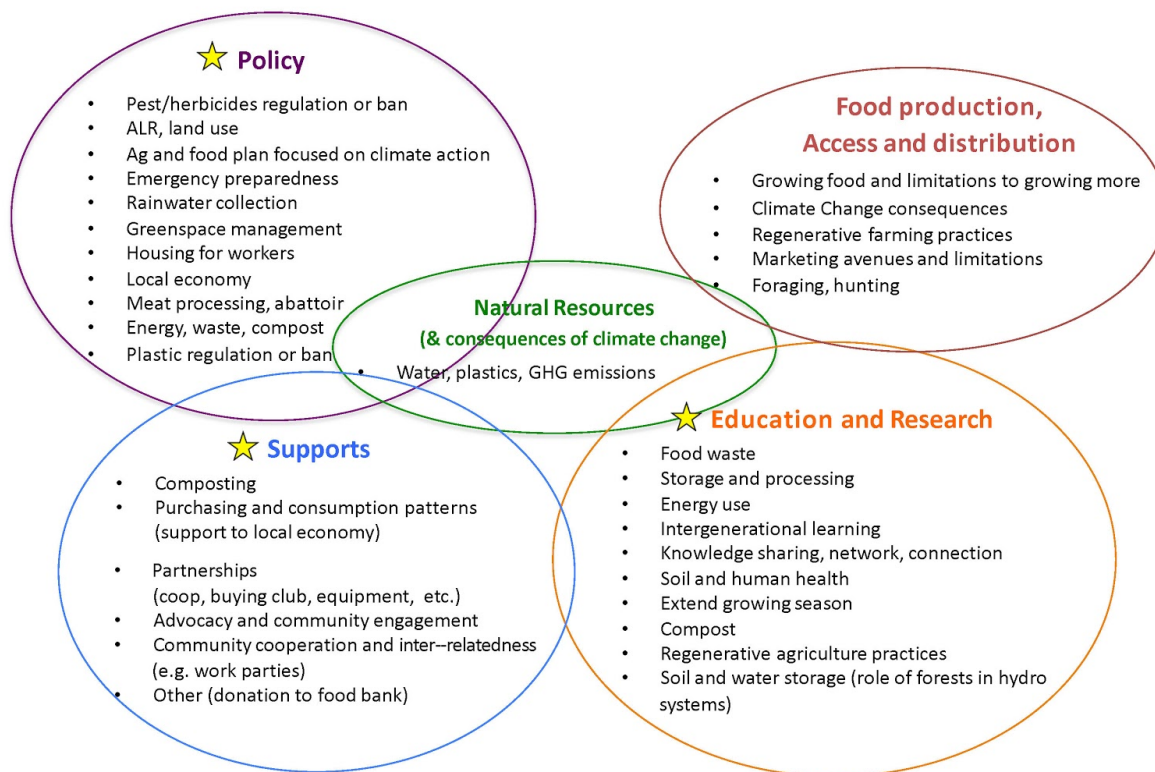
"So many like-minded, passionate people."

"There were more issues around food security than I expected."

"How many people are very much wanting active change."

"Willingness to join together as a community."

"All of the willing people and diverse interests."



Interviews

Bowen Island Food Sovereignty's primary goal for the interviews was to obtain a more in-depth understanding of the topics presented in the online survey and the Stakeholders' Workshop by collecting insights and ideas from the interviewees and gaining an historical perspective. The interviewees were selected based on whether they had a farm operation or garden, had been involved in the local food system for an extended time, owned a parcel of the Agricultural Land Reserve, or qualified as a natural resource professional. This selection of subjects was partly based on the information needed for the *Agrarian Analysis*, another aspect of groundwork that was conducted concurrently by Project Manager and Agrologist, Julie Sage.

The questionnaire that formed the basis of our interviews was adapted for each interviewee but followed identified themes. Due to the wide variety of experiences reported, BIFS members didn't try to consolidate the information that was gathered. Instead, the interviews were transcribed and studied for meaning, and quotes were selected that reflected either a common response or offered new information.

The number of interviews BIFS conducted was ultimately restricted by time and the inability to process more content within the grant period. The twelve interviews conducted with Bowen residents and the one interview with Harold Steves, a farmer and city councillor in Richmond, provided a rich diversity of perspectives, information and history. With future funding, BIFS hopes to continue interviewing stakeholders in the local food system, such as restaurateurs, business owners, and food bank volunteers, to name a few.

The list of one-on-one interviewees is in Appendix C, and the basic interview questions are in Appendix D.



One-on-one interviews allowed BIFS members to get to know local farmers, and their livestock.

Communication & Education

In addition to the engagement methods that Bowen Island Food Sovereignty employed to gather information, the group also disseminated information. BIFS communications were directed primarily at two different audiences, the Bowen Island community at large and stakeholders who were directly involved in the local food system. For example, the Stakeholders' Workshop and the one-on-one interviews were designed for particular stakeholders while the online survey and educational events were promoted to the general public.

During the grant period, BIFS published three articles in *The Bowen Island Undercurrent*: May 8, "Local Group Exploring Resilient Food Initiative;" July 9, "Regenerative Agriculture: Learning to Love Our Carbon Holding Soil;" and July 27, "Seeking a Soil Solution for the Climate Crisis, Regenerative Agricultural Talk." BIFS has published a total of 17 articles since March 2018.

BIFS also staffed an information table at the weekly Farmers' Market (seasonal) and hosted or co-sponsored two, well-attended educational events (33 and 18 people respectively):

- "Soil Regeneration," a talk by Ananda Fitzsimmons, President of the Board of Regeneration Canada, at the Bowen Island Public Library, July 27
- "Introduction to Permaculture and Mycology," at Belterra Co-housing, July 28.

BIFS member, Phil Gregory, produced six richly illustrated, large-scaled posters that convey complex information about regenerative agriculture, the food web, carbon sequestration and the experimental composting project conducted in collaboration with Grafton Community Gardens.

The communication and engagement activities are listed in Appendix E. The list of all *Undercurrent* articles can be found in Appendix F.



A local farmer selling out of her truck at the Bowen Island Farmer's Market.

Methodological Constraints

The method of recording and transcribing was time-consuming. The lack of time meant it wasn't possible to explore other aspects of the supply chain. Only food producers and natural resource professionals were interviewed, leaving restaurateurs and food retailers, amongst others, for future investigation.

With this initial groundwork effort spanning only three and a half months, engaging with a range of stakeholders through a variety of channels was challenging, but successful overall. Provided further funding is available, BIFS intends to continue reaching out to populations we have already engaged and make a special effort to connect with particular demographic groups: young families, First Nations, and people under the age of thirty.¹



ABOVE: BIFS members (from left) Phil Gregory, Susan Swift, Shasta Martinuk, Meribeth Deen, Jackie Bradley, Julie Sage, Elaine Cameron. Not pictured but present by phone, Rabia Wilcox.

What We Found Out

The evidence of climate emergency points to the critical need for Bowen Island to develop a dependable, sustainable, and affordable local food system. This report reflects the perspectives of many islanders who are thinking about food, the future, and what needs to happen if we want a more resilient food system for Bowen Island.

3.1 Food Production, Distribution and Marketing

The abundance and variety of foods available on Bowen Island is greater than it has ever been: there is an organic buying co-op, two grocery stores, and at least three mainland grocery chains delivering products to our doorsteps multiple times every week. But how robust is local food production and distribution? What happens if and when our connections to the mainland fail?

By encouraging and supporting local food producers and regenerative land practices, Bowen Island has the opportunity to build a better food system -- one that can sustain us through these challenging times.

The greatest obstacles to growing food on Bowen, based on what BIFS learned from the survey, are the lack of time, space, and knowledge. Personal limitations related to health, age or physical abilities, lack of financial resources, and lack of interest were mentioned less frequently. Another challenge is the lack of economic viability of food production on the island.

Out of 220 survey respondents, 150, or 68%, grow food. While 31% say their food production activities are limited to a few herbs and greens, 7% say they produce enough to preserve and share with neighbours and only 4% produce enough to sell.

Most of the interviewees have farming or gardening experience ranging from 6 to 27 years. One interviewee embarked on his career as a food producer as recently as 2018, while another got her start in the 1920s.

Farming on Bowen An Historical Perspective (Part 1)

Marion Moore and her sister Jean Jamieson, born on Bowen in the early 1920s, describe Bowen Island with a population of approximately 150 people.

Marion looks back fondly on growing up in this place. She says the work was hard but there was a lot of freedom. No one worried about the roads being paved. One of Marion's main chores in the summer was to deliver milk, mainly to people who were renting Union Steamship Cottages. This was milk produced on her family's farm. It was bottled and she would carry the fresh milk in a used flour sac slung over her shoulder.

Her family produced enough food to feed their family of nine all year-round, and plenty of other people as well – although there weren't many others to feed in the winter, as many were summer residents only.

Winter, she recalls, meant her family ate a lot of potatoes and others root crops which they grew and stored effectively in their root house.

Back in those days, says Marion, the one thing you didn't have to worry about was watering.

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None of the farmers and gardeners we spoke with have organic certification, but all expressed the intention to do their work based on organic principles. Some also talked about aspiring to permaculture principles or to biodynamic farming:

Basically we've learned by doing and by going and talking to people... I've got this book inside by an organic apple farmer who's the guru of organic growing in North America.

- Alastair Johnstone

....learning, evolving, but so far not using any chemicals.

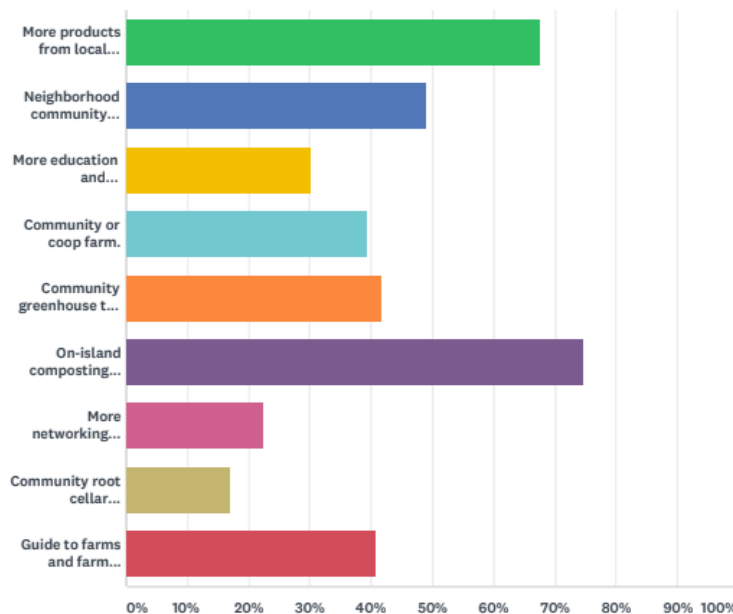
- Rob Purdy

The intention with this garden is that they're mostly perennial food crops.

-Jeannette Wrenshall

...permaculture: no till, lasagna layers. I sort of basically try to mimic nature by having things mulch down and just add good top dressing. I've introduced mycelium into the mix, as well as biochar, compost, everything. I have two worm towers.

- Sarah Haxby



When asked “What new opportunities would you like to see,” the second and third most common options selected by survey respondents were “more products from Bowen farms” and “neighbourhood community gardens.” Other popular choices included “a community greenhouse to extend the local season,” “more education and information, and “a community root cellar to store fresh produce and extend the season.” All of these reveal strong community support for more on-island food production.

What's growing on Bowen

There are a number of things interviewees say are relatively easy to produce on Bowen including greens, garlic, potatoes, onions, eggs, berries and perennial plants.

The variety of foods being produced by these individuals is much more diverse than the crops mentioned above. The following table provides the details of some of what is being grown on Bowen Island.

FOODS GROWN ON BOWEN ISLAND:

Animal products:	Broilers, eggs, lamb, meat birds (chicken, turkey), pork, wool
Berries:	Boysenberries, blueberries, currants, gooseberries, mulberries, raspberries, Saskatoon berries, strawberries, tay berries
Fruit trees:	Apples, cherries, figs, kiwis, persimmons, pears, peaches, plums
Nut trees:	Chestnut, hazelnut, walnut
Roots:	Beets, garlic, onions, potatoes, radishes, sweet potatoes, carrots
Vegetables/Fruit:	Brassicas, beans, herbs, rhubarb, greens, squash (winter and summer), tomatoes, cucumbers
Other:	Christmas trees, edible flowers, honey, seeds



TOP: Chickens leading a happy life, at Endswell Farm.

BOTTOM: Frances Bragg picking apples from her front yard in the Scarborough neighbourhood.



The challenges of farming on Bowen

The physical challenges of growing food on Bowen are numerous. They include a decreasing supply of water, difficult topography, limited arable land and good-quality soil, invasive species, and a general dependency on facilities and supplies available on the mainland.

While many of our interviewees have access to aquifers and wells that provide a good supply of water, most agree that water - or a lack of it - is going to be an increasing challenge and potential source of conflict on Bowen.

There isn't a lot of ground water here. There's a stream that runs down through the middle of the two properties and by August it's absolutely bone dry, and it's bone-dry 20 feet down.

- Alastair Johnstone

I have rain barrels, but I'm going to need to add more. This year, I have already run them all dry. I don't have enough capacity is what I learned, and so I'm not adjusting to the current climate change. I have to figure out a way to finance the ability to be more prepared. It would be nice if there were some sort of support.

- Sarah Haxby

Interviewees talked about challenging topography being a limiting factor to farming on Bowen, and also soil. Across the island, our interviewees have a variety of soil types to contend with, sometimes numerous soil types on a single property. Negative descriptions of local soils include acidic, rocky, and thin. However, one farmer we spoke with is learning to work with the soil that exists on her land.

The soil is very clayey here, which is fantastic and also limiting... So we're very fortunate that we can sort of dig a bathtub and put in a bunch of soil from the forest or manure and start many gardens that hold water because they're basically clay lined. So we've started working with the clay as a friend rather than cursing it, and it's actually awesome.

- Marie Claire Seebom

Others find raising livestock to be a valuable aid to soil enhancement.

The land you are standing on is really, really, rocky. That's why it's a good thing to keep animals. There are two big piles of manure because once a year we clean out the sheep barn, and so that all goes into a big pile, and it's turned for a couple of years, and then once it's all composted down, that goes on our beds...

- Rosie Montgomery

One sheep farmer saw a lack of land and healthy soil as being detrimental to her sheep. Sheep farmers, she says, rarely use deworming medications because they are not adequately effective; the best way to ensure healthy sheep, she adds, is healthy soil. To

make up for a lack of acreage for her sheep to graze on, this farmer imports large amounts of hay from the Fraser Valley.

Another local producer raising sheep says having animals helps with the fertilization of gardens and trees, but raising animals on the island is costly.

It's something that we do because we enjoy doing it, but just the cost of loading up and taking them out to the Fraser Valley, having them slaughtered, then having them butchered and bringing it all back again, it's two ferry rides. It's a huge cost.

- Alastair Johnstone

The regulations and the costs related to slaughtering livestock on the mainland make raising animals less economically viable. The lack of an abattoir on the island acts as a disincentive to having livestock, and consequently reduces food self-reliance for the community.

One interviewee said that despite all the other challenges to growing food on Bowen, it was the invasive species that nearly made her give up on farming.

Soil and water are challenges, but the main constraints I've found are the recently introduced invasive species like racoons, skunks, squirrels. I think they came to Bowen around 2008, and the rats have been around since about '92. I can't grow enough crops, the squirrels strip the nuts before they're mature enough to harvest. I can't harvest most of my apples because they get stripped down by rats and squirrels. And so it becomes such defensive gardening. The deer, the slugs and birds are bad enough, but they've always been here.

- Sarah Haxby

Farming on Bowen An Historical Perspective (Part 2)

Alastair Johnstone's recalls an idyllic childhood on Bowen in the 1950s. In his memory, the "old store" was the only place to buy food on-island, and pickings were slim.

"Everybody always had a garden," says Alastair. "If you had a quarter acre, a tenth of an acre, whatever, you had a garden. Most people would grow what they could and go to town once a week to get the rest."

Fast forward a few more decades to Sarah Haxby's childhood. In the late 70s and early 80s, she says, the identity of this place was definitely more rural. Gradually it shifted to being semi-rural.

In the 80s, the OCP tried to solidify and preserve Bowen's rural identity, says Haxby but nobody really foresaw that new arrivals to the island would cut all the trees down, put a driveway in and landscape the entire land. "I don't think the people in the 70s and 80s thought that would happen," she says.

The semi-rural identity of Bowen has evolved, says Haxby, to that of a bedroom community.

Economics and motivations for farming on Bowen

Our interviewees see Bowen Island as a challenging place to engage in agricultural activity, and some say that producing food is something that seems to be getting harder as time goes on. Some contrasted Bowen to other Gulf Islands, which they view as having much more association with agriculture.

There isn't very much farm land, and most of the farm land that was in productivity isn't any more. It got progressively worse as far as fewer and fewer farmable areas, to the point where there pretty much weren't really any true farms active on Bowen when the Bowen Ag Alliance was formed. We tried to stimulate that and see if there was an interest in sort of resurrecting agricultural practices on Bowen.

- Sarah Haxby

Farming and the Bowen Community

While many of our interviewees expressed that they felt a sense of isolation due to a lack of a farming community on the island, the majority said that their neighbours have been supportive of their farming activities.

The economics of farming are not favourable according to our interviewees. All work other jobs in order to sustain their farming activities. Several mentioned that regulations on Bowen were particularly costly and onerous, and others mentioned the cost of land and cost of living being too high in comparison to the economic returns of growing food. Registered Professional Biologist Alan Whitehead summarizes the situation in this way:

Farmers need more revenue from the land than the cost of living demands. Agricultural production is still very low in economic return value, and so people need to get supplemental jobs. And maybe there's been a change in the demographics of the island, so the expectations end up being more for off-island type of produce and crops or livestock than what could be produced on Bowen.

The pressure on land prices from development was also seen as a challenge to the economic viability of farming.

Well, between the municipality, the provincial government, the federal government we should make it easier for people to farm and make it so that they actually can farm. Is it going to be realistically viable, on Bowen? In my heart of hearts I hope it is. On my practical side, I don't think it ever will be because Bowen land is too valuable and there's not enough true farmland. A lot of the true farmland has already been developed into housing.

- Alastair Johnstone

Some interviewees expressed the idea that encouraging islanders to grow their own food would help raise awareness of how difficult it is to grow food and encourage support for local food.

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A good start would be that more people grow their own food so that they're more sympathetic about what it takes. I think it's all about educating people as to what it actually takes to grow food. You need to let people know how tenuous it is. People need to know that.

- Rosie Montgomery

We could try to raise more awareness about why to support the local Farmers' Market. It's about food culture, which is incredibly hard to shift unless we really have to, and we might come to that with climate change. And hey, try growing some of your own lettuce at home and see how hard it is.

- Sarah Haxby

Despite the economics of farming, our interviewees say they do the work of producing food because it aligns with their values, lifestyles and their belief that it is important for the community.

Mental health and spiritual well-being. Some people do yoga, I farm. I used to be into mountain biking, now I take care of my animals. This is the activity that is most meaningful to me.

- Star Hoerauf

Our interviewees also mentioned land stewardship and climate change adaptation as reasons for producing food.

I think we have to divorce ourselves from that commercial aspect; it's not realistic for Bowen. So how do we see it as more of a community enhancement piece where there's some other kind of exchange happening than just selling food for money?

- Marie Claire Seebom



Star Hoerauf and one of her lambs.

Distribution and marketing

A small proportion of interviewees reported selling their products. The marketing avenues for their products are the Farmers' Market and direct marketing at a farm-gate stand, or to a restaurant, or one of the two grocery stores on the island.

One interviewee foresees selling some of their products in the near future on site, with the possibility of selling other local products as well. And another interviewee raising sheep reported that she sells her animals and wool on the mainland due to regulations and the high transportation costs of taking livestock into town for butchering that make it prohibitive to sell on Bowen Island.

Tomatoes, carrots (small rainbow carrots especially), lettuces, garlic and eggs were identified as easy to sell by experienced farmers and gardeners. Broilers and eggs were mentioned as easy to sell and profitable. However, the local meat production and inspection regulations prohibit meat processing on Bowen Island, requiring the slaughter of animals and the processing of the meat to be done off the island, which discourages local raising of livestock.

Several interviewees confirmed that they would have more animals if the regulations around production and processing were eased.

One experienced farmer pointed out that the most profitable marketing avenue was to sell direct to restaurants.



Sarah Haxby selling her wares at the Bowen Island Farmer's Market.

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Selling more, having more restaurants buying would make the farm more profitable. That's the best way to move your product and make money on it.

- Rosie Montgomery

According to the online survey respondents, interviewees, and workshop participants, the most successful food and agricultural initiative on Bowen is the Farmers' Market. When asked in the online survey to think of food-related initiatives on the island that are working well, nearly 40% wrote in "The Farmers' Market." But, while it was a very popular answer, most respondents to the survey (63%) answered that they attend the Farmers' Market three or fewer times each year, with 25% saying that they don't attend

A discussion with Sarah Haxby, one of the Farmers' Market managers, provided more details on the evolution of the market as well as its reception and attendance by Bowen Islanders. She says that ever since its inception in 2008, the focus of the market has been to connect islanders to fresh, locally grown produce and support local growers, including young gardeners. Having funding for a paid position to administer the Farmers' Market would make it easier "to try to keep the market for the farmers and gardeners and to keep listening to what they need and what supports they need." A different location with pre-built structures, so vendors "can store stuff there, so they don't have to bring everything with them" would encourage more participation in the market.

Haxby says that while a growing number of tourists is great for the market, they don't necessarily purchase produce and other goods. "So really, we are reliant on the locals to support the local growers."

3.2 Natural Resources and Climate Change

Agriculture depends on a healthy natural environment. When growing food, we need adjacent natural areas that are healthy.

- Will Husby

This section explores forestry, water, soil and land use, and the related issue of biodiversity. The project did not include marine resources and their use, although BIFS acknowledges their historic, current and future importance in food security.

Most of the content in this section comes from interviews with biologist and environmental consultant, Alan Whitehead, and entomologist, Will Husby. Both Whitehead and Husby are on Bowen Island's Environmental and Climate Action Advisory Committee.

Water supply

Bowen residents are increasingly aware of actual or potential water shortages. As Rosie Montgomery expressed it: Water is going to become a major issue -- large. Water is going to become enormous on Bowen, really enormous.

There are some positives about the water situation on the island. Will Husby notes that one such factor is that "we have a lot of forest, which is really important for our water supply. It acts like a sponge that stores water in the soil. Maintaining and managing wetlands is important, as they store and release water slowly."

Water on Bowen comes from a variety of sources: community reservoir, community well, private well, private stream license, and rooftop catchment. Seven aquifers have been identified and mapped on Bowen (<http://www.islandstrust.bc.ca/media/344084/bowenwellsmap.pdf>)

An average house roof on Bowen Island (125 square metres) will yield 160 000 litres or 35 000 gallons of water a year.

And, as Alan Whitehead points out, if we have sufficient rainfall, "the recharge capability [of aquifers] is still relatively high because our overall proportion of impervious, human-made surfaces is pretty low." At this time, just 15% of the island has been converted to human use. Alan also says that another encouraging sign is that "overall, the demand per household or per capita has dropped over the years because of just that overall swing towards more water conservation in terms of water fixtures and awareness."

However, while low areas will not be threatened with water shortages, some areas that are higher up are already experiencing problems. Climate change and increasing density are likely to exacerbate water issues.

We're already seeing big issues climate-change wise with water. Some water districts are in dire straits, and it's only the beginning of July ... Each development takes away a piece of this natural capital.

- Will Husby

Some interviewees reported that they have a good, stream-fed supply of water. For others, water is a challenge and must be managed carefully with diversified approaches and with attention to crop selection.

I have enough water for the year or for the summer for the dry periods as long as I conserve. I can't sprinkle wholeheartedly all the time. I just can't do that. So, drip irrigation is one component of it. Since I'm going to bush orchards, although they're a much more intensive form of farming, they actually use less water because I'm not broadcast sprinkling.

- Alastair Johnstone

Communication and Engagement Groundwork

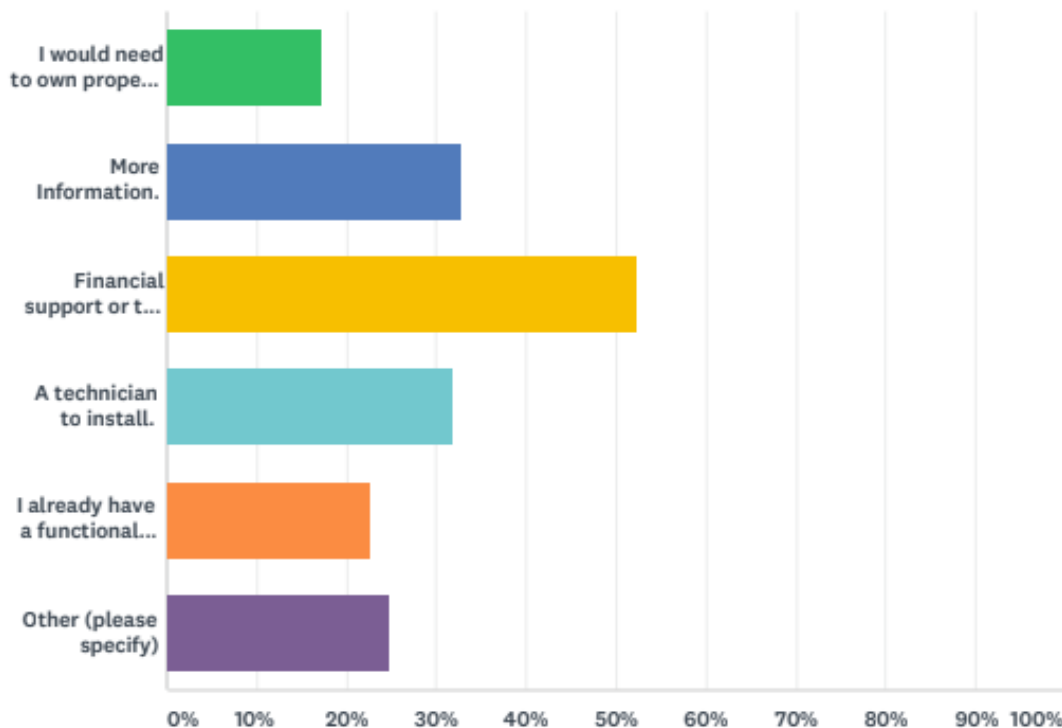
We have two really big tanks ... I think it's probably about three thousand litres that we keep full when the system is working ... I think we went through three iterations of draining those tanks ... And the metal roof, that's good for catching water ... We use our gray water: washing water and everything that's not toilet water goes into the orchard, which is amazing because that really helps the trees. You need a lot of diversity of storage to go through the summer without running out.

- Star Hoerauf

Currently, Bowen Island Municipality website has information on how to conserve water and explanations of the four stages of water conservation, but the municipality does not require water catchment as part of a checklist for new developments.

More than half of 195 survey respondents to Question 13 on water catchment pointed to financial support as the most valuable support for such systems, followed by 'more information' and 'technical support for installation.'

If you would consider a water catchment or water saving system, what would help you to go ahead?



Forty-six people took the time to write in a response, and those echoed the views depicted in the graph.

Communication and Engagement Groundwork

The interviews revealed the same issues and barriers to water catchment and conserving: finances, and lack of labour and technical know-how. Another issue raised in one interview was regulations, particularly regarding potable water.

There have been regulatory disincentives ... getting the approvals for making that potable water is much more onerous, of course, there's much more capital involved with your filtration systems. People aren't motivated to install water catchment when the water won't be potable.

- Alan Whitehead

In terms of preserving the quality of water on Bowen and increasing agricultural production, it's important to recognize that farming can have an impact on water quality:

[Another] thought that comes to mind is protection of water quality in the receiving environments and the types of agriculture that are practiced so that the risk of adverse effects on water quality can be basically abated and not even allowed to develop.

- Alan Whitehead

Forested land

While the current status of the forests on Bowen is relatively healthy, the impacts of climate change are becoming evident. Cedars, with their shallow root systems, are dying and other species are struggling.

I've started to see some hemlocks, some spruces, and some pines starting to dry ... I can picture the assemblage of species shifting towards more Douglas-fir dominated and pine-dominated systems.

- Alan Whitehead

One of the natural resource professionals interviewed suggested that we should plant tree species more fit for drier conditions such as Douglas Fir, Big Leaf Maple and possibly Garry Oak.

Approximately 50% of the land on Bowen is forested, with approximately 1% of that in old growth trees.

Forests are important to ecosystem health including farming. They have the capacity to mitigate the impacts of climate change through sequestering carbon (12,880 tons of carbon annually), reducing soil erosion by catching rainwater run-off, and by cooling temperatures. They also provide habitat to a diverse range of species, including insects and other pollinators important to food security and resilience.

One cautionary note on reforestation concerns the importance of a healthy balance between conifers and broadleaves. When aspen and other broadleaves are allowed to flourish, they form "natural fuel breaks" if their leaves are out, according to Lori Daniels, a professor of forest ecology at the University of B.C. That's why aspen stands are often

referred to as "asbestos forests" in wildfire science circles.²

The impact of climate change on the forests affects the undergrowth as well as the trees. It's possible that salal will die out because of the extremes in temperature that appear to be the "new normal".

Fire as a threat to forests is an increasing concern as summers, on average, continue to be drier than in the past. Bowen is relatively protected from lightning; it's humans that pose the greatest fire threat to forests. A fire that devastates forests would also have negative repercussions on aquifers.

In coastal regions trees act as a biotic pump. The transpiration of water by the trees leads to a low pressure region drawing in moisture laden air from the surrounding ocean. Evidence is mounting that leaf-dwelling microorganisms are lofted into the atmosphere, where they seed ice crystals and make rain.³ Thus tree loss can have a profound effect on the hydrological cycle of our island.

Population growth is another challenge to maintaining the integrity of the island's forests.

If there are ongoing changes in zoning which increase density, and if that density is dispersed rather than concentrated, then yes, there's going to be more impacts on the remaining forest.

- Alan Whitehead



Red Alders, common on Bowen Island, are frequently referred to as "weed trees" but fix nitrogen in soils.

² <https://www.cbc.ca/news/canada/british-columbia/it-blows-my-mind-how-b-c-destroys-a-key-natural-wildfire-defence-every-year-1.4907358>

³ http://brent.xner.net/pdf/NewScient_clouds_April2016.pdf

Soil and land use

Amongst the interviewees, it was generally agreed that soil is problematic on Bowen.

The soil in the forests is doing well, but in terms of agriculture, most gardeners and farmers have had to work to create good soil. "There's arable land on Bowen only because we've created it, not because it existed.

- Rosie Montgomery

Islanders acquire soil in a number of ways including: using manure from animals being raised on the island, composting, creating biochar, and bringing soil from the mainland.

The contradiction of shipping off organic waste and importing soil was raised in a number of interviews. One interviewee expressed the view that importing soil has certain dangers.

I believe if you bring in any soil, you're risking having a weed that has never been here or something that could be very invasive, or something that's very toxic.

- Jeanette Wrenshall

Another interviewee pointed out that increasing agricultural production by expanding the land under cultivation could put forested areas at risk.

All those valley bottoms over there have some fairly good soils. There are some of those soil areas that were already previously used for agriculture and regenerated -- alder or what not. Those would be the ones of least incremental impact if one were to go back to return them to agriculturally productive use.

- Alan Whitehead

Biodiversity

Biodiversity is important to maintaining the health and stability of ecosystems including our water resources, soil formation, and nutrient storage and recycling. A diversity of plants and animals, including insects and microorganisms, supports the resilience of ecosystems to adapt-to and mitigate the impacts of climate change. Bowen is home to some of the rarest ecosystems in BC that are under threat from development, climate change and habitat degradation, so maintaining a healthy natural habitat on Bowen is particularly important.

Human land use and regulations can have impacts that may not be obvious at the outset of implementation. Development "impacts how the indigenous animals get around on the island system. And even when they introduced the rule that you had to have driveways up to houses. Developing all these..... has had a huge impact on water and soil and land use and biodiversity."

- Sarah Haxby

Currently, climate change is having an impact on our forests, as described above.

I feel for the consumers in the ecosystem, the trees and under-stories. You've heard salal in some places is taking a bit of a hit this past winter, so what's going to happen to the deer? What's going to happen to the birds, and all the others.....

- Alan Whitehead

Invasive animals

Bowen farmers and gardeners have coped with animals attempting to enjoy their gardens and farms for many years, but recently there are new invasive animal species on the island.

I tried to have a little mini-permaculture setup, and I had some ducks and was trying to incorporate the duck manure into the garden. But unfortunately, raccoons killed my ducks ... It's perennially depressing between neighbours' cats, the invasive gray squirrels, the invasive skunks, and raccoons.

- Sarah Haxby

Pollinators

Maintaining a healthy natural ecosystem is important for pollinators, and as more than three-quarters of the world's food crops rely at least in part on pollination by insects and other animals,⁴ a healthy population of pollinators is critical for food security. There are a range of reasons why there has been a dramatic decline in pollinator populations globally, from the use of pesticides and herbicides to climate change effects on habitat.⁵

⁴ <http://www.fao.org/news/story/en/item/384726/icode/>

⁵ <https://ec.europa.eu/environment/nature/conservation/species/pollinators/documents/Session%2020Adam%20Vanbergen.pdf>

Communication and Engagement Groundwork

On Bowen, so far we are doing well because of the extent of our intact natural habitat. "I don't think Bowen is seeing the rapid rate of decline of insects that many parts of the rest of the world is seeing," says Will Husby.



Jessica Mitts and the "bee hotel" at Grafton Gardens.

However, Bowen would not be immune to the impacts of habitat loss nor to pesticide use, and there is already evidence of the effects of climate change.

With climate change, the timing of blooms is changing, and this could have a negative effect on pollinators. Now native pollinators may appear just at the end of the bloom or miss it all together. This year on Bowen the salmon berries were about one month early. Drier summers could mean fewer flowers and wetter winters could mean flood problems for overwintering insects.

- Will Husby

Pesticides / herbicides Ban or Regulation

From the survey, out of the 195 who gave their opinion on what should be done about pesticides, 47% were in favour of a complete ban. Another 34% were in favour of stricter regulation to ensure safety for islanders and pets and protection of locally produced food, waterways and other natural resources. Eight percent of respondents did not know, 3% indicated that we needed them and should ensure they are labelled properly and 2% are not worried about them and are not in favour of any additional regulation. Another 8% offered written answers.

Communication and Engagement Groundwork

Some survey respondents did not feel knowledgeable enough on this topic to offer concrete measures, but here are a few of the comments by those who did:

"Education. There are organically approved methods that should take priority over the toxic ones."

"I would like to see pesticides and fungicides banned... but like everything, it would require education of environmentally appropriate methods, hard work (which not everyone is able to do) to dig out invasive plants and keep at it."

Our interviewees spoke strongly against the use of pesticides.

Absolutely [I would support a ban or regulation on pesticides]. We are not even fully aware of all the adverse impacts of pesticide use, ranging from treated lumber all the way to applications of whatever products onto our vegetable gardens or onto our ornamental plants. It's a bandwagon that this municipality can get onto along with so many other places. It's not like we have to reinvent it. It may be justifiable in some very specific places to do integrated pest management in very careful spot applications. An example that comes to mind is the Japanese knotweed bank just before you get to Grafton Lake. It was really getting bad, and they cut it all back, and then, I think they went in to do stem injections ... but as a general principle at residences... we want to encourage everybody to go organic, and not using synthetic pesticides makes sense.

- Alan Whitehead

Neonicotinoids and Roundup are nasty and hell on wheels for insects. Using those chemicals on insects is like using an atom bomb to deal with muggers in New York ... People using dangerous chemicals in their gardens are a problem for both native and honeybees. You also have to watch for the plants you bring in from garden centres. Many have been heavily dosed with pesticides.

- Will Husby

A number of those interviewed advocated for the use of alternative methods.

The World Health Organization declared in 2015 that glyphosate is a probable carcinogen. In three recent California court cases, juries have ruled that the glyphosate-based herbicide Roundup is a substantial factor in causing non-Hodgkin's lymphoma.

There has also been an increased awareness of the importance to our health of the human microbiome, a vast array of microbes that live in and on our bodies. There is growing understanding that these beneficial microbes are being damaged by antibiotics used in both medicine and agriculture. Glyphosate, the most widely used chemical in agriculture, is a broad spectrum antibiotic.

Communication and Engagement Groundwork

When maintaining a landscape for environmental, recreational, ornamental and food production reasons, I now know that there are holistic methods [rather than chemicals] you can use to care for the land.

- Jessica Mitts

One interviewee thought there may be justification for pesticides in commercial operations, and another person felt they might be appropriate when dealing with invasive species in careful, spot applications.

The current Official Community Plan (OCP) of 2011 has this to say about pesticides:

Organic farming or regenerative methods are encouraged through the development of low impact farming. Operators of farms will be encouraged to avoid the use of pesticides and herbicides. If used, pesticides and herbicides will be applied in a manner that minimizes damage to adjoining [?] and drainage areas.

3.3 Waste Management and On-island Composting

In 2018, approximately 540 tonnes of food scraps and yard trimmings generated on Bowen Island were hauled to the North Shore Transfer Station for eventual transport and processing at Sea to Sky Soils in Pemberton, BC. This practice is relatively costly for Bowen Island, as frequent low-volume trips to the mainland must be made by ferry. Bowen Island has identified several potential sites for on-island organics processing. The next step is to evaluate various on-site processing technologies for their capacity to process the entirety of Bowen Island's source-separated food scraps and yard trimmings with minimal impact on the surrounding community, including odour and groundwater considerations. The project would achieve a number of objectives:

- *Provide a closed-loop solution for Bowen Island's organic material*
- *Reduce transport costs associated with off-island organics processing*
- *Reduce costs associated with the purchase and transport of soil products created off-island*
- *Provide local jobs for Bowen Island residents*
- *Reduce greenhouse gas emissions associated with transport*
- *Demonstrate Bowen Island's commitment to sustainability.*

Community composting

Out of the 206 Bowen residents who responded to this question in the online survey, 75% are in favour of an on-island composting facility. The most frequent reason given for having a composting facility on the island is to reduce greenhouse gas (GHG) emissions related to exporting our green waste and importing it back as topsoil or compost. For many respondents, having a local source of compost would encourage more on-island food production. Some also expressed the need for caution and a well-managed operation with strict guidelines to avoid contamination.

Communication and Engagement Groundwork

"A definite priority. We need to stop sending our organics off island. Composting is recycling at its best. Transforming the dead into living soil."

"As long as curbside organics pickup service remains the same, and a facility on-island does not stink up the surrounding neighbourhood, I think it's a great idea."

Eight percent of respondents were opposed to a composting facility because of rodent issues, bad odours, the cost of the facility and higher priorities on the island.

"No. We have more serious priorities, like water storage, lack of fire breaks, lack of an island evacuation plan, lack of public docks/boat launches [that we could use in an emergency]"

As a follow-up from the Stakeholders' Meeting, Phil Gregory (BIFS) met with activators Ellen Macintosh (of the Ruddy Potato), Louise McIntosh (Bowen Recycling), and Nick Moseley (interested citizen) to learn more about Louise's ideas on a composting facility. Due to ongoing increases in drop-off fees for island waste at the North Vancouver depot, Louise recommended that we start now, even in a small way, to reduce this off-island shipping. She thought it important to separate green waste into two streams: the yard waste/garden waste side at roughly 70% of the volume, and the food waste side at 30%. She was in favour of trying out a small-scale aerobic organic waste digester produced by Eco-Growth Environmental Inc. that can process 1000 lbs. per day. It can reduce the volume of the food waste component by approximately 75% by dehydrating the waste with heat to produce an output described by the manufacturer as an organic peat for use as a soil supplement or fuel. The inputs consist of kitchen scraps, paper plates and cups. No mention was made in the literature provided by Eco-Growth Environmental Inc. about dealing with biodegradable plastics such as the polylactic (PLA) packaging used by the Ruddy Potato, which they would like to have composted. The basic digester equipment currently (in 2019) costs approximately \$89,000. Installation is another \$62,000 not including tax or electrical upgrade. Exactly how high a temperature is employed or the typical energy requirements are not known at this point.



Community composting in action: members of BIFS and Grafton Gardens worked together to build a bioreactor to help regenerate local soils

Communication and Engagement Groundwork

BIFS members interviewed Harold Steves, a fourth generation farmer, Richmond Councillor, and one of the founders of BC Agricultural Land Reserve (ALR) while a member of the Dave Barrett NDP government. Describing Richmond's composting experience, he said the city was initially very successful in recycling yard waste after they first banned pesticides and GMOs on residential lands, but over time, Richmond's chemical-free garden waste got mixed in with other types of inputs, reducing the quality of the compost. From his experience, Harold recommended that we keep the different organic input streams separate.

BIFS is currently supporting a group at the Grafton Community Gardens in a year-long composting experiment using a new type of aerobic, no-turn composting system, the Johnson-Su bioreactor, that was developed at the University of New Mexico. It has an initial thermal phase followed by a worm composting phase. Financial support has been provided by Daniel Heald of the Ruddy Potato. (See photo, p31)

Home Composting

Nearly half of survey respondents reported that they don't compost at home, either because they were not satisfied with previous composting results, because they are facing limitations, or because they now rely on the municipal collection of green waste. Answers regarding barriers to home composting mentioned rats and other pests, lack of time and space, odours, lack of knowledge and education, access to dry brown carboniferous material, and being a renter.

About 50% of those who do home composting reported they were satisfied or somewhat satisfied. One survey respondent brought up the useful role of chickens and ducks in recycling.

"Our ducks and chickens are amazing. They break down an extraordinary amount of food waste from our house and also from our neighbours."

During his interview, Alan Whitehead brought up some different approaches to human waste and water management.

We purify water, and then we pee and poo in it, and then we spend money treating it again, and we never use those residues of those resources again. Really? I know I'm going out on a limb here, but really, we should all be having composting toilets. We should be having those other toilets on which the little hand wash basin is on top of the tank so that you're using water again really, and if we were poor, we would be there.

3.4 Rural Identity

The term “rural” does not have a clear definition. During the interview, the notion of rural identity was introduced not so much from a geographical standpoint but rather from a sociological one, as a lifestyle implying certain characteristics and choices. With variable and subjective understandings of “rural” underlying each interviewee’s answers, there emerged a wide range of responses. A couple of interviewees offered their own definitions of rural.

Rural identity means people who lived on the land a whole life, know this land inside out, know what the seasons bring and what to expect and how to live on it successfully. I think there are people that do that, and they've been here a long, long time, have a lot of knowledge to pass on, and they're not commuting off-island every day. It's a kind of lifestyle that is less consumerist in a way because you can't make that much money. So you have to be more self-sufficient, and self-sufficiency is a really valuable knowledge that we should treasure and try to learn from.

- Marie-Claire Seebohm

The majority of interviewees think that Bowen Island has lost its rural identity over time. Underscoring the variance in opinions about what constitutes rural character is the “rural status” designation of Bowen Island (July 2019) granted by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

At least one interviewee believes that the closeness to nature and strong sense of community is enough to give Bowen a rural identity.

Yes, as there is a lot of interface with nature, even in Snug Cove, and there is a community spirit of looking after your neighbour.

- Will Husby

Another interviewee pointed out that Bowen’s rural identity is all relative, depending on how long one has lived on the island and where one comes from: for a city dweller, Bowen Island does feel rural, whereas for someone who has been on the island for decades, the population increase and concomitant development have occurred to the detriment of the rural identity of the island.

Proximity to Vancouver and a changing demographic with a higher proportion of daily commuters is one of the reasons evoked for this slow erosion of rural identity. The relative lack of agricultural activity was also cited.

No, Bowen does not have a rural identity, it is increasingly suburban.

- Star Hoerauf

Communication and Engagement Groundwork

I feel a lot of Bowen Islanders claim that they're rural and they have a rural identity. But in reality, they're city dwellers who commute every day.

- Alastair Johnstone



**Rob Purdy owns an orchard on Bowen,
producing cider as his "side-gig."**

Bowen doesn't really have a rural identity, at least compared to other Gulf Islands, which have much more agricultural activity.

- Rob Purdy

Most interviewees have been on Bowen long enough to see changes in the community that have eroded whatever sense of rural identity the island may have had in the past.

When I came here it felt like what rural is. There were still horses wandering around on the roads, and friends and I kept horses, and the kids would get on the ponies, and we would go down the roads and down into the park. I would never do that now.

- Rosie Montgomery

Many interviewees, when asked whether they felt it is important to maintain Bowen's farming heritage, made reference to the rising cost of land, higher taxes, and lack of agricultural development as major barriers to farming and the ability to live what they feel to be a truly rural existence. There is also the challenge posed by potential agricultural land being developed for housing.

The people who really are rural often feel very alienated from the rest of the island. And it's not a happy little feeling, because in our case, we feel we're being punished because we haven't developed. We haven't done a bunch of things that make it possible to exist on the island, and taxes skyrocket non-stop.

- Alastair Johnstone

Agriculture is a very minor part now. What was small hasn't grown much. We have a farmers' market. That's wonderful. We have Home Farm Gardens and a few other people growing produce here, but I don't really know if there's much more than that. And

again, housing costs are just keeping people working on that hamster wheel.

- Jeanette Wrenshall

We could quite easily lose all our growing land; there's really nothing to protect it. The agricultural land status doesn't mean you have to farm or garden. And a lot of the agricultural land is parkland right now, not being used for any sort of farming. I think we need to talk about it more as a community and come up with a plan.

- Sarah Haxby

Opinions were mixed as to whether farming is an integral part of Bowen's rural identity. Some said yes to that question, and yet at the same time there is general agreement that, with the exception of Home Farm Gardens, most people growing food on Bowen aren't trying to make a living through farming.

Agriculture now for the most part is a hobby. And then we just have Home Farm Gardens who's seriously farming and making a very visible statement within the community, really showing themselves as farmers and providing their food to the greater community.

- Jessica Mitts

3.5 Future Prospects

Climate change

Climate change projections point to a significant impact on our natural resources and consequently on our food system. On August 8, 2019 the Intergovernmental Panel on Climate Change (IPCC) released its: *Special Report on Climate Change and Land*. According to Hans-Otto Pörtner, Co-Chair of IPCC Working Group II, the report shows how managing land resources sustainably can help address climate change: Land already in use could feed the world in a changing climate and provide biomass for renewable energy, but early, far-reaching action across several areas is required.

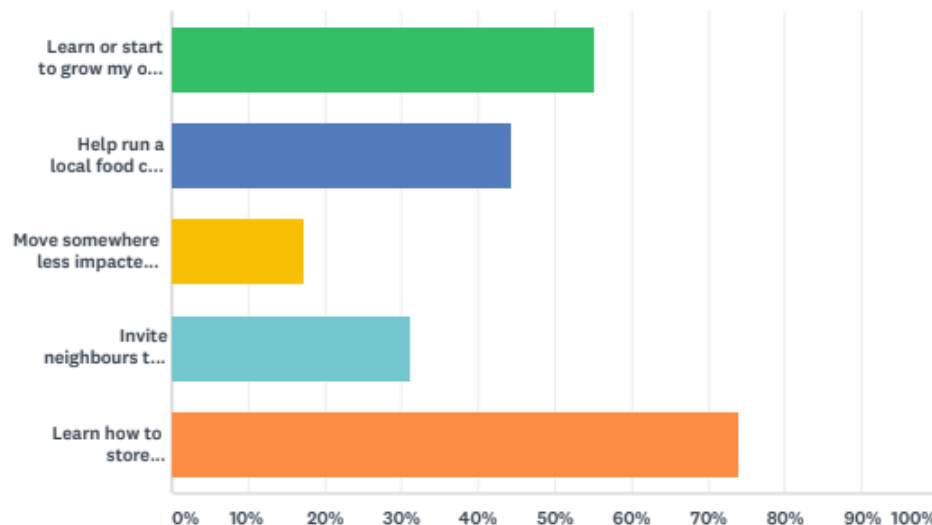
Eduardo Calvo, Co-Chair of the IPCC's Task Force on National Greenhouse Gas Inventories says that policies supporting sustainable land management, "ensure the supply of food for vulnerable populations, and keep carbon in the ground while reducing greenhouse gas emissions are important."⁶

Question 7 on the survey asked respondents to indicate what they would do in the face of frequent or significant disruptions to food access on Bowen and the Lower Mainland due to climate change. Of the 198 respondents who answered this question, the majority responded that they would learn how to store and preserve more food in their home (74%). 55% of respondents indicated they would learn or start to grow their own food while 44% would help run a local food coop or buying club and 31% would invite

⁶ https://www.ipcc.ch/2019/08/08/land-is-a-critical-resource_srccl/

neighbours to share their garden or farm. Finally, 17% of respondents said they would move somewhere less impacted by the weather.

If there are frequent or significant disruptions to food access on Bowen and the Lower Mainland due to climate change, what would you do?



Climate change will increase the chances of emergencies that will impact our food supply. One of the survey questions pertained to the inclusion of food in the island's emergency preparedness plan. Regarding what kind of food-related information survey respondents would like to see in the plan, the answers were wide-ranging. Approximately 20% of respondents did not know, did not understand or were not sure of how to answer and 35% respondents skipped the question entirely, all of which could indicate that respondents had not yet begun to consider the connection between food supply and emergency preparedness.

The remaining answers applied to various degrees of emergency. Respondents referred to different scenarios, different timeframes and different degrees of dependency, from expecting the municipality to plan for all community needs to wanting to learn how to dress a deer. Respondents' answers addressed preparedness on two different levels: individual and community. Recurring themes were logistics, supply, and communication. More specifically, respondents were interested in how to grow and process food, how to preserve and store food, how to access and fairly distribute the food supply.

"Who will stock it and as items get close to expiration dates, how should the food be distributed to the current needy and or food bank?"

"Muni should have food stored for an emergency as well as provide information re: how much and what type of food we should all have stored for an emergency."

Communication and Engagement Groundwork

*"We need nourishment to survive. If our emergency plan has nothing to do with food, we're royally f***ed."*

Approximately 5% of responses included long-term climate-related mitigations and adaptations. These respondents talked about saving seeds, conserving and storing water, growing drought-tolerant crops and learning to grow with less water.

In addition to the survey questions, the impact of climate change on food production was explored in some interviews. Many interviewees expressed concern about the impact of climate change on natural resources: when asked what are or will be the most immediate consequences of global warming for Bowen, water shortages was a recurring answer, along with the risk of wildfires.

Several people mentioned that they are already noticing that some crops are not as easy to grow as formerly, due to weather changes.

Since the 1970s, Carol Robb and Peter Frinton have lived at Ravenhill, a heritage farm established in the early 1900s. Carol says she is already making adjustments in her garden due to climate change, trying to grow different things like sweet potatoes and planting fewer cabbages and other brassicas. "There must be a lot of people kind of experimenting. You know, serious gardeners just trying things," says Carol.

Jeanette Wrenshall also spoke of adapting to changing climate conditions.

I think what comes to mind first off is our changing climate and planting a garden that is resilient and can support itself. Also trying to think about what you know can support you more throughout the year, as opposed to just rows of vegetables.

Several interviewees also saw land stewardship and climate change adaptation as reasons for producing food.

That's where I see the primary value actually, it's the land stewardship conservation and use and finding uses for the land that are sustainable and effective for the community as well as for the natural ecosystem [...] we're also thinking that the knowledge of how to grow food in this climate and what grows well, is the other piece of stewardship that we should try to learn and pass on when it's more relevant. We're not quite at that relevant stage where it's a necessity, but I think it's coming.

- Marie Claire Seebom

Succession planning

Interviewees were asked whether they had a succession plan for the future of their farming enterprise. Generally, a succession plan was in place when there was a child who wished to carry on the farming activity. When this was not the case, there was no plan for what would happen to the farm once they could no longer work it.

I think we might have to introduce sharing the property with younger people. Or maybe our son will move here with his family.

- Marie-Claire Seebohm

No [there's no succession plan].

- Marion Moore



**Aurora Forster helping out at
Collininsia (Collins Farm).**

Opportunities and Next Steps

The following ideas and recommendations are a distillation of findings from the workshop, survey, interviews, and other research conducted by Bowen Island Food Sovereignty.

The overarching recommendations of this groundwork are that the community of Bowen Island:

- 1) engage in the development of a food system plan that anticipates potential disruptions caused by climate change
- 2) increase support for local agricultural activity
- 3) Make preparations for dealing with challenges to the island's food security.

This Communication and Engagement Groundwork Report, taken together with the Agrarian Analysis, provides a map for strengthening Bowen Island's food system resilience. These documents address many interrelated components: municipal infrastructure, environmental services and natural resource protection, water management, economic vitality, land use planning, emergency preparedness, regenerative agriculture, agroforestry, biodiversity, and human relationships.

We have not prioritized the recommendations, and they are by no means exhaustive. BIFS wishes to reiterate that this report is only one step - one that we hope inspires action. Funding is being sought to move these ideas toward a more fully realized plan. Even so, there are many actionable ideas outlined in the next several pages that could be championed by community groups, businesses, municipal government, and volunteers - starting today.

Building a vibrant local food system can be a driver of community economic development. Bowen Island already has the makings of a good, seasonal tourist economy, but how can the island cultivate economic viability in its food system? What needs to happen to ensure that the community has locally-produced food available year-round, especially when the more dramatic consequences of climate change hit our shores? These are some of the questions we still need to answer.

1. Farms and farmland

Only 15 hectares of the 172 hectares of Agricultural Land Reserve (ALR) on Bowen Island, are being actively farmed. Another 12 hectares outside of the ALR are farmed. Almost half of ALR land on Bowen is within Crippen Regional Park and is under the jurisdiction of Metro Vancouver, zoned as "unavailable for farming due to existing land use."

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Objective 88 of Bowen's Official Community Plan expresses the intention "to encourage Metro Vancouver Parks to plan and implement active farming uses for ALR lands in Crippen Regional Park, subject to the environmental policies of this OCP, as demonstration farming, allotments or recreational gardening if compatible with park values."

- As a beloved natural setting and well-used park, most of Crippen Park is deemed 'off limits' for agricultural development at this time. In the future, this question may be re-visited, but meanwhile, there are many other opportunities for action now.
- Conduct further research to understand why most Agricultural Land Reserve parcels on Bowen are not actively farmed.
- Identify farmland that is not currently being farmed and develop ways to encourage its conversion to food production.
- Investigate Community Supported Agriculture (currently in use at Collins Farm) and farmland trusts as models for increasing farmland under production.
- Explore and consider ways to reconcile recreational and agricultural uses of parkland.
- Look into means of facilitating farm-worker housing including on ALR, e.g. zoning changes.
- Explore the possibility of island-wide "WWOOFer" opportunities.
- Provide information to Agricultural Land Reserve landowners about updated regulations.
- Offer to support Bowen Island Heritage Preservation Association's exploration of Davies Orchard in Crippen Park's ALR to ensure its protection and to make it eligible for agricultural rehabilitation projects.

2. Food production

- Establish a land matching program that connects owners who have under-utilized arable land and greenhouses with individuals interested in growing food.
- Organize group buying and education on planting fruit and nut trees.
- Advocate for a nursery dedicated to edible perennials to support islanders in growing more food.

Communication and Engagement Groundwork

- Investigate bylaw changes that would enable food producers to sell their produce regardless of the zoning of their property.
- Provide mentoring from knowledgeable food gardeners to support those interested in growing who lack experience.
- Offer guidance to Agricultural Land Reserve owners to consider a succession plan to ensure a next generation of food producers on Bowen.
- Offer support to on-island meat producers. Bowen-raised and butchered broilers, lambs, and hogs would represent a significant contribution to rural community economic development. Consider a mobile abattoir in this regard. Investigate appropriate legal mechanisms and licensing to make the inspection, slaughter, and processing of Bowen livestock possible on the island. Provide education on regenerative livestock grazing and create appropriate municipal bylaws to avoid a potential increase in livestock population having a negative impact on land use and groundwater.

Distribution and marketing

- Investigate avenues for direct marketing to islanders and tourists such as farm tours, long table dinners, farm gate, and u-pick sales to create economic viability and build demand.
- Work with the Community Economic Development program manager at the Bowen Island Municipality to facilitate increased farm-to-table marketing (e.g. producer partnerships with on-island restaurants).
- Support vendors at the Farmers' Market by establishing the market in a more visible location and by providing permanent structures with storage when needed
- Develop strategies to increase attendance at the Farmers' Market.
- Include a section on local food production in the Newcomers' Guide to encourage support for local food and goods.
- Raise awareness about the importance of buying from local growers.

Cultural and economic value

- Communicate to the community at large and to the Community Economic Development Committee the importance of food production as an economic driver.
- Extend school program partnerships with local growers to educate students on the importance of growing food while respecting the land and natural resources.
- Food security and emergency preparedness. Include an emergency food plan as part of the island's emergency preparedness planning.
- Create an inventory of natural and cultural assets in order to identify the practices, knowledge, and land available, currently and potentially.



**Members of the Bowen Island Community School
(BICS) Garden Club.**

4.2 Natural Resources and Climate Change

From an ecological perspective, we need to stay well within our carrying capacity by not forcing ourselves to appropriate carrying capacity from elsewhere or overextend our use of our on-island support system.

- Alan Whitehead, biologist/environmental consultant

Communication and Engagement Groundwork

The climate projections for 2050 for Metro Vancouver⁷ indicate that we will have higher temperatures in all seasons and higher annual precipitation. Summers will be drier, and the greatest increase in rainfall will occur during autumn, winter and possibly spring. Climate change is also likely to bring greater unpredictability, which some Bowen farmers are already experiencing. One participant in the Stakeholders' Meeting reported that formerly she was able to plant according to the date, but the weather is less predictable now, and she needs to experiment in order to adapt. A vibrant local food system relies on best practices for natural resource management, and these practices will need to be adapted as Bowen experiences changes in climate.

General

Convene a temporary task force of natural resource professionals to advise the municipality and offer guidance to Bowen residents about best agricultural environmental practices, natural resource preservation and regeneration, and pest and invasive species management practices.

Water

- Encourage rainwater harvesting and water conservation.
- Explore ways to offer financial and technical support for water collection. Possibilities include workshops, tax subsidies, support for installation, and bulk buying of materials.
- Consider municipal bylaw changes that require new builds or tear-downs for rebuilding to install cisterns for rainwater collection.
- Investigate the potential to collect rainwater from large roofs such as the community school and library.
- Explore the feasibility of collecting storm water from Trunk Road.
- Create a pilot project demonstrating rain harvesting and grey-water reuse systems to raise awareness of these potentials.
- Provide information on how to grow food successfully with less water.

⁷ <http://www.metrovancouver.org/services/air-quality/AirQualityPublications/ClimateProjectionsForMetroVancouver.pdf>

Communication and Engagement Groundwork

Pollinators

- Engage with Metro Vancouver and Bowen Island Heritage Preservation Society to explore the possibility of including a demonstration pollinator garden at Davies Orchard.
- Provide information to households on best planting for pollinators.

Forests, wetlands and trees

- Ensure that development plans look beyond specific property boundaries to consider the impact of the development on the surrounding area and ecosystems.
- Investigate bylaws to support Policy 42 in the OCP: "Any subdivision or development should be designed to maintain a maximum amount of undisturbed forestland. Wherever possible, the retained forests should connect with adjacent forestlands."
- Advocate to the province that Bowen crown land forests be taken out of the annual allowable cut of the provincial forest inventory to maintain the ecosystem services forests provide, including carbon sequestration.
- Provide education on trees suitable for planting on Bowen that will adapt to climate change and have the potential to mitigate wildfires.
- Protect wetlands to preserve habitat and conserve water.

Invasive species

- Develop an island-wide program to trap and dispose of grey squirrels, skunks, rats, raccoons and other invasive species that negatively impact food production.
- Pesticides and genetically modified organisms (GMOs)
- Implement municipal restrictions on pesticide use: examine restrictions on pesticides and/or genetically engineered organisms implemented in other municipalities to learn from best practices, explore means for monitoring adherence to restrictions.

Waste Management and On-island Composting

Managing our waste by increasing composting is a valuable means of recycling biomass and nutrients into a natural resource that enriches soil biology, sequesters carbon, and increases water retention.

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- Compose “tip sheets” for home composters and include a reliable source of compost that has good biology for people not able to make their own.
- Research the potential of biochar as a soil amendment and form of carbon sequestration.
- Encourage islanders to up-cycle land clearing and garden waste into wood chips, a valuable resource for gardeners and landscapers, instead of burning.
- Conduct further investigation of the Eco-Growth Environmental Inc. machine performance and whether it’s an appropriate method for reducing the volume of food waste.
 - Communicate with the Ucluelet Co-op, which operates an Eco Growth digester, and send them a sample of biodegradable plastic (PLA) packaging.
 - Meet directly with an Eco-Growth Environmental Inc. representative to get a better understanding of its technical operation.
 - Perform a chemical and biological analysis of the compost output to decide how attractive the output would be as a garden supplement.
 - Investigate the technical requirements for a system capable of degrading different types of biodegradable plastics.
- Monitor the performance of the Johnson-Su bioreactor built at the Grafton Community Garden.
- Investigate the challenges that agricultural chemicals and genetically engineered organisms might pose to any on-island composting facility.
- Provide information on the risk management and safety issues of agricultural chemicals and genetically engineered organisms.
- Explore strategies that will not harm other animals but will deal with rats that are attracted to compost.
- Look at the possible role of animals in waste management, e.g. chickens and ducks, possibly pigs and goats.

Conclusion

Food is a unifying force in human evolution. When we “break bread,” sit down to traditional family meals, or gather to celebrate cultures other than our own, food connects us.

The system of producing and distributing that food is broken. Despite the fact that the yields of agricultural commodities are the highest they’ve ever been, more than 1 billion people around the world are hungry. There is also an inextricable link between agricultural production and the global climate emergency - currently, production of food accounts for 1/8 of global emissions, while the clearing of land to make space for that production accounts for another 1/8.

The good news is, if we take on the task of changing the food system, we have the opportunity not only to reduce atmospheric carbon emissions, but also to sequester that carbon in soils. While it is easy to become paralyzed when faced with a global climate emergency and ecological breakdown, this work provides us with tangible ways of lessening the harm, and regenerating the land, resources and relationships we rely on.

While this report reflects many of the challenges to producing food here on Bowen Island, it also reflects many actions we can take - as individuals, businesses, community groups and government - to change our food system. There is no single action we can take to make this change happen, and we can not leave the responsibility for these actions on any single entity. Like climate change itself, the challenge is complex, and it will require all of us, working together, to build the solutions.

So let’s harness the urgency of our times, and allow food to connect us. A community that aspires to create a resilient food system is a community that chooses to mitigate and adapt to our changing climate. We believe that Bowen Island is that kind of community.

Appendix A

Online survey questions

Thank you for taking this survey about food on Bowen Island. There are 19 questions and it takes about 15 minutes, depending on the length of your answers. Please mark "N/A" if you don't have an answer. Please help distribute the survey by sharing the link below until June 21, 2019.

Whether or not you grow food or raise animals, we want to hear from you.

1. Do you grow food on Bowen?

Yes/No

2. If you grow food (or raise animals) on Bowen, do you primarily produce (choose one):

- A few herbs and greens.
- Enough to supplement household meals in summer and fall.
- Enough to preserve and/or share with neighbours.
- Other (please specify)
- An additional amount to sell at local markets or to restaurants.
- I raise animals for food (eggs, meat, cheese, etc.).

3. What are your biggest challenges to growing food (or raising animals) on Bowen?

(Please select all that apply):

- Lack of knowledge
- Lack of time
- Lack of interest
- Lack of financial resources
- Personal physical limitations (health, age, ability)
- Lack appropriate space (no land, too rocky or steep, no fencing, limited water
- Other (please specify)

4. What new initiatives or opportunities would you like to see? (Please select all that apply):

- More products from local (Bowen) farms
- Neighbourhood community gardens
- More education and information
- Community or coop farm
- Community greenhouse to extend the season.
- On-island composting facility
- More networking between food producers/providers.

Communication and Engagement Groundwork

- Community root cellar (storage)
- Guide to farms and farm stands
- Other (please specify)

5. Are there any food/agricultural systems, relationships, programs, or infrastructure on Bowen that you think are working well? If so, what are they?

6. How often do you shop at the Saturday Farmer's Market at BICS?

- Less than one time per season.
- Two or three times every season.
- More than one time every month.
- Every chance I get, or almost every week.

7. Climate change could impact food growing and delivery systems, please share what you think.

8. If there were frequent or significant disruptions to food access on Bowen and the Lower Mainland due to climate change, what would you do? (Please select all that apply):

- Learn or start to grow my own food.
- Help run a local food coop or buying club. Move somewhere less impacted by weather
- Invite neighbours to share my garden/farm
- Learn how to store (preserve) more food at home
- Other (please specify)

9. If we include food in the Island's emergency preparedness plan, what kind of information would you want to see in the plan?

10. Apart from the Municipality's "Green Waste" collection, we want to know what you think about compost. Please take a moment to write out your answers.

11. If you make you own compost at home, are you satisfied with the process and result?

Why or why not (or N/A)?

12. Home composting isn't easy for everybody. Please describe barriers to composting at home, as you see them.

13. Do you think that an on-island composting operation (large or small) is a priority for our community? Please tell us why you think it is (or is not) important.

Communication and Engagement Groundwork

14. Living on an island makes many people more aware of the limits and the preciousness of natural resources. Please help us understand your views.

15. What (if anything) do you think we should do to regulate pesticides and herbicides on Bowen? (Select one):

- Ban them completely — there are always better ways to control pests and weeds.
- I am not worried about pesticide use and wouldn't add any regulations.
- Regulate them to protect people and pets by keeping them out of yard compost, water, air and locally-produced food.
- We need them, so we should ensure that they are properly labeled.
- Other (please specify)
- I don't know

13. If you would consider a water catchment or water saving system, what would help you to go ahead? (Check all that apply):

- I would need to own property or get my landlord to purchase.
- More Information
- Financial support or tax credit
- A technician to install
- I already have a functional system. Other (please specify)

So that we can better understand who has answered the survey, please share some information about yourself.

14. What categories (check all that apply) describe your relationship to food?

- Producer (farmer, food gardener, fisher, forager).
- Food business owner (retail, restaurant, processing)
- Waste manager (recycling, garbage)
- Natural resource manager/professional (including landscapers and scientists - soil, water, plant biology, etc.)
- Consumer, customer
- Educator (nutrition, environment, school gardens)
- Other (please specify)

15. Do you live on Bowen full-time?

- Yes/ No

16. Do you live in the Agricultural Land Reserve (ALR) have farm status, or own a Bowen property that was once a farm?

Yes/ No

Communication and Engagement Groundwork

If yes, please describe.

17. Do you or does anyone in your immediate family feel insecure about getting enough food to eat in the coming weeks or months?

Yes/No

Comment.

18. Please indicate your age range (check one)

8-17

18-29

30-49

50-69

70-90+

To stay connected to the Future of Food initiative, please share your email address with us or send a separate email to hellobifs@gmail.com

Appendix B

Stakeholder Workshop Participants, by category:

Producer 7
Food Grower (Gardener) 6
Retailer 6
Community Member 2
ECAAC 1
CEDC 1
Developer 1
Municipal Planner 1

Appendix C

Interviewees

Name	Category
Alan Whitehead	Natural Resource Professional
Alastair Johnstone	Food producer
Carol Robb	Food producer
Jeanette Wrenshall	Food producer

Jessica Mitts	Food producer
Marie Claire Seebohm	Food producer
Marion Moore	Food producer
Rob Purdy	Food producer
Rosie Montgomery	Food producer
Sarah Haxby	Food producer
Star Hoerauf	Food producer
Will Husby	Natural Resource Professional

Appendix D

Interview Questions

The questionnaire below is designed for food producers and/or ALR owner.
Note that depending on the interviewee's background, this questionnaire was adjusted.

Farming on Bowen

- How long have you been producing food/raising animals on Bowen?
- How would you describe your farming methods?
- What farm products do you produce/raise on your farm?
- What do you consider easy to produce/raise on Bowen?

- What are the main physical constraints to farming on Bowen? (soil, water access, cost of land, cost of input, lack of support, lack of marketing opportunities, lack of profitability)
- Other than physical constraints, what are some barriers to farming (or more farming) on Bowen?
- What kind of experiences have you had with neighbours (or landlord/lady) related to your farming activity? (describe)
- If you sell your products:
 - What do you consider easy to sell on Bowen?
 - Where do you market them?
 - Do you farm full time/part time
 - Do you need another activity in order to keep farming?
 - Do you have the possibility to hire labour to work on your farm?
 - (if yes) Is labour easy to find? What is the best channel/network to find labour?

- What is the first thing that comes to mind when thinking about farming on Bowen?
- Has this opinion evolved overtime? What happened?
(eg: under appreciative, collaborative, growing, isolating, a labour of love, etc.)

- If you think of an 18 year-old or a young person making plans for their future, what do you think comes to her/his/their mind when thinking about farming?
- What non-economic value do you associate with farming?

Natural Resources

- What are the soil constraints on your farm? (bedrock, little topsoil, poor soil quality, poor drainage, steep slopes, high irrigation needs)
- Have you implemented any remediation?

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- In terms of Ag water use, where does your water supply come from?
- How do you anticipate your water use for farming will evolve in the next 5 years?
- Do you currently have any water catchment/water saving system?
- (if no) What type of support would you need to consider installing water catchment/water saving system?
- Do you have any concern about natural resources management on Bowen Island in the near future? Particularly regarding freshwater, soil, biodiversity, forest
- (if yes) why?
- How important do you think a ban on pesticides and herbicides is on Bowen Island?

FOR ALR owners

- What % of your ALR is actively farmed?
- What type of support would you need to consider revitalizing (define the term) your ALR? This question requires to summarize the KPU white paper on ALR "protection is not enough"
- Would you be open to discussing this further in the future?

Rural identity and heritage

One definition of the term Rural is "a social representation, a community of interest, a culture and way of life."

- With that definition in mind, is it fair to say that Bowen has a rural identity?
- Has it changed overtime? What happened?
- (if yes) Do you perceive any evolution (weather opportunities or threats) to maintaining this rural heritage?
- Would you say farming is an integral part of Bowen's rural identity?

What does the future hold?

- Do you have a succession plan in place? Are you satisfied with it?
- If not, what would you need to develop one?
- What service, structure or support would you require to expand your activity (or make it viable if not the case at present)?
- Thinking back about barriers to farming on Bowen (physical, social, economic), what should we do better and how?

Demographic information

- Gender
- Age range (15-35; 36-55; 55-70; over 70)
- Farm Annual income range
- Would you prefer remaining anonymous?

Appendix E

Communication and Engagement

Channels / Partners	Purpose	Date of activities
Media coverage Bowen Island Undercurrent articles (3)	Public introduction of the project, Regenerative Agriculture, and Soil Solution to Climate Crisis, other related topics (Food, climate change)	May 8, July 9 & July 25
Social Media Sites Facebook: Bowen Agricultural Alliance, Bowen In Transition, Bowen Agricultural Alliance, Belterra Cohousing, Bowen Island Public Library, 'Bowen Island Everything Else'	Announce online survey and speaker events (created ads and listings, also sent to group email lists and published announcements in emailed newsletters)	Throughout the March – August grant period
Presentations/ Workshops (2) 1. Cosponsored with Bowen Island Public Library 2. Cosponsored with Bowen In Transition and hosted by Belterra Cohousing Together, these two events reached more than 50 participants	Educational Presentations 1. Regeneration Canada on soil regeneration 2. Permaculture & Mycology Day	July 27 and July 28
Stakeholders' Workshop 24 participants	Bring stakeholders together, inform them about the initiative and its objectives, encourage engagement, gain insights from participants, stimulate action and networking	May 24

Communication and Engagement Groundwork

Online survey 220 Respondents	Opportunity for community members to share opinions, raise awareness of the inter-relatedness of issues, gauge interest in the objectives of the initiative, solicit information re: opportunities and barriers at both household and community levels.	May 13 – June 20
One-on-one interviews (13)	12 Hour-long interviews by BIFS volunteers with selected stakeholders to obtain data on history of farming, current practices, obstacles and successes. Gain insight from stakeholders and value their experience. 1 interview with Harold Steves	June and July
Interactive Displays Tables at Farmers' Market and Bowfest	Provide information, produce 6 or more informative posters on regenerative agriculture, distribute surveys and promote events.	Saturdays in May, June, July (9 weekends out of 12) Bowfest Aug. 24
Climate Conversations (2) Co-sponsored by Bowen Island Municipality	Coordinate two Climate Conversations 1. Present the Groundwork of Toward a Resilient Food System for Bowen Island. 2. Introduce Richmond Councillor and 4th generation farmer, Harold Steves.	1. September 29 th : 2. October 6th

Appendix F

Undercurrent Articles

1	March 29, 2018	Susan Swift	Food for Thought: Workshops Focus on How to Enrich Island's Soil
3	April 5, 2018	Susan Swift	Finding Local Solutions to Bowen's Food Sovereignty
4	April 19, 2018	Susan Swift	Bowen Digs Into its Farming Roots
5	May 17, 2018	Elaine Cameron	Food For Thought: Bee Smart on Bowen
6	May 31, 2018	Susan Swift	Community Garden Plants Seeds of Hope
7	July 5, 2018	Susan Swift	Bowen's Farmers Market: Your Local Connection
8	October 11, 2018	Elaine Cameron	Stop Wasting Food and Save Money
9	November 8, 2018	Elaine Cameron	Grow a New Age Victory Garden
10	December 7, 2018	Rabia Wilcox	The Need for Bowen's Food Bank Has Grown Over its 22 Years of Existence
11	January 22, 2019	Susan Swift & Elaine Cameron	A Little Insight Into Canada's New Food Guide
12	March 29, 2019	Rabia Wilcox	Help Your Garden Cope with Dry Summers and Poor Soil with Hugelkultur
13	April 18, 2019	Elaine Cameron	Food Packaging: Getting Over Plastics
14	May 2, 2019	Susan Swift	Feeding Sustainability: B.I. Food Sovereignty (Knick Knack Nook Grant)
15	May 8, 2019	Susan Swift	Local Group Exploring Resilient Food Initiatives
16	May 22, 2019	Elaine Cameron	Here are 12 ideas for getting rid of plastic in the kitchen

Communication and Engagement Groundwork

1 7	July 9, 2019	Meribeth Deen	Regenerative Agriculture: Learning to Love Our Carbon Holding Soil
1 8	July 25, 2019	Meribeth Deen	Seeking a Soil Solution for the Climate Crisis