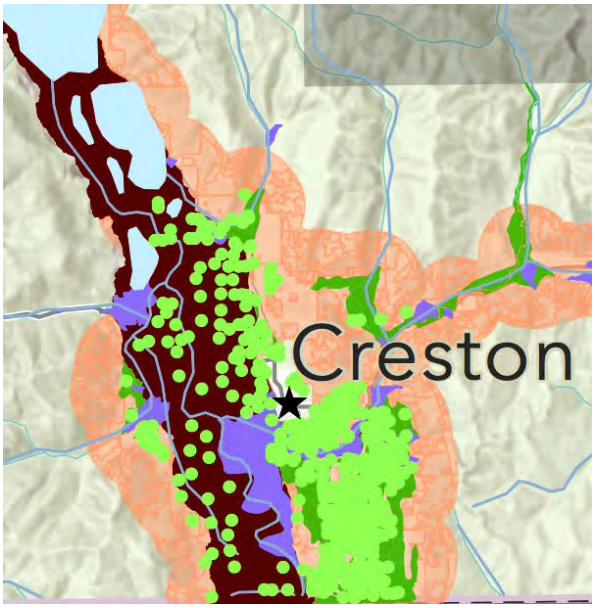
Evidence-based Food Policy Project

Case Study



CENTRAL KOOTENAY FOOD POLICY COUNCIL

Fostering a just and vibrant food system

Abra Brynne
Executive Director
December 2020

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With gratitude, the Central Kootenay Food Policy Council acknowledges the support of the Real Estate Foundation of BC. We also acknowledge and appreciate the funding support provided by the Columbia Basin Trust, and RDCK Directors Jackman, Watson, Faust, Newell, Cunningham, Popoff, and Peterson.

Project Overview

The Evidence-based Food Policy Development Project project was launched in 2019, originally intended to wrap up in June 2020 but extended to the end of 2020 due to the impacts of the COVID-19 pandemic.

This project was a civil society, government and academia collaboration, led by the Central Kootenay Food Policy Council. Our partners included the Applied Research & Innovation Centre at Selkirk College, the Institute for Sustainable Food Systems at Kwantlen Polytechnic University, Interior Health, the Regional District of Central Kootenay, Kootenay & Boundary Farm Advisors, and the West Kootenay Permaculture Coop.

The project had the goal of developing an evidence base and strategic rationale for food policy development that can best support and promote sustainable land and water use and vibrant food economies for the long term. We sought to understand how factors such as land prices, climate change, proximity to flooding and fire risk, and other factors would impact current and future farmers and the overall resilience of the Central Kootenay food economy.

The first step, in collaboration with our academic partners and the RDCK, was to identify all accessible and relevant datasets and sources. Simultaneously, a scope of research document was created collaboratively by the partners to aid in focusing the work. Once this was completed, analysis of the available data was delegated to the appropriate project partner with the most relevant in-house expertise. Each academic partner created a set of products related to their respective data and research. These products fed into the formulation of policy recommendations which also included the review of existing RDCK documents, including the Agriculture Land Use Inventory, Comprehensive Land Use Bylaws, and other relevant policies and plans.

The project was to wind up with a series of engagements and public education. The COVID-19 pandemic necessitated shifting plans. We were able to continue working with the RDCK to finalize the mapping products. We were also able to develop policy proposals to be considered in 2021 with the intent of lowering barriers for farmers and promoting sustainable food systems, vibrant agriculture economies, and climate change adaptation.

By mid 2020, it was clear that we would be unable to host any in-person public engagements. We therefore shifted our attention to creating a series of educational materials aimed at teenagers and adults to deepen their understanding of food systems and demystify public policy, thereby encouraging engaged and informed public participation in policy development. We have integrated a communications plan for the products of the project into the Council's 2021 Work Plan.

Methodology

The success of this project depended on partnerships between key actors, namely the food policy council, the regional district and academic partners. The partners brought technical expertise in planning, GIS, methodology, data analysis, policy, and food systems. These partnerships were readily put in place due to long established relationships with the Food Policy Council Executive Director. Each partner contributed significantly to the substance of this project:

- The Food Policy Council fulfilled the role of project lead, manager, and food systems content expertise;
- The Central Kootenay Regional District enabled access to proprietary datasets, and provided personnel to sit on the Advisory Committee and to assist the academic partners in their data access and analysis;
- The academic partners - the Institute for Sustainable Food Systems at Kwantlen Polytechnic University, and the Applied Research & Innovation Centre at Selkirk College - each provided a combination of faculty and students who undertook the data analysis and generated reports and maps.

In order to create an evidence base for the development of policy proposals, it was necessary to develop an understanding of what data sets were available and how they could be used to better understand impacts on the land, water, population and food systems of the Central Kootenay. We drew inspiration from Jessica Letizia's 2018 Thesis for her Masters in Environmental Studies is entitled "GIS as a Decision Support Tool in Regional Food Systems Policy Implementation". In her thesis[1], Ms Letizia, identified spatial data that could support decisions related to the implementation and monitoring of the specific goals in Calgary's 2017 regional food strategy.

Because we were not starting from a set of established goals, our approach was diametrically opposed to Ms Letizia's. We implemented an iterative approach to creating the evidence base that was driven by two interrelated questions:

1. What were our key research needs related to specific elements of the region that could strengthen or undermine the food systems of the region?
2. What data sets specific to the Central Kootenay Regional District exist and could be accessed?

The answers to question number 1 was created through a group and iterative process led by the Food Policy Council. The goal was to refine specific research questions that could be addressed, at least in part, by an analysis of spatial and other relevant data. The research questions can be found in Appendix A. The questions were grouped by category and then numbered so that they could be cross-referenced with the data sets. Over time, it was determined that not all research questions could be addressed due to a lack of data or the lack

[1] Available here: http://dx.doi.org/10.11575/PRISM/5450

of time and resources to capture and make them accessible, such as plotting the location of contaminated sites, or of schools relative to fast food outlets.

The answer to question number 2 was facilitated by the fact that the Regional District owned or had ongoing access to some relevant data sets and which they made available to the project partners. Each of our academic partners also had existing contractual relationships with different bodies that enabled access to data sets that are not otherwise publicly available, such as those from BC Assessment. To understand the scope of the material that could be available for analysis, a spreadsheet was created on the cloud and filled in collaboratively by project partners. Each data set was then linked to a relevant research question. The spreadsheet can be found in Appendix B. The spreadsheet captures the availability of the data sets, their source and location. Data was also colour coded on the spreadsheet to identify, for instance whether or not it is geo-referenced (and therefore able to plot on a map) or requires permission to access.

When it was clear what data would be available and which questions could be answered, the specific tasks were delegated to each of the academic institutions, based on their respective personnel and program expertise and relevance. A memorandum of understanding and contract was created by the Food Policy Council for each of the academic partners.

The Institute for Sustainable Food Systems at Kwantlen Polytechnic University focused on land ownership, price, and status and provided a report on potential crops suitable for the changing climate in the Central Kootenay. The Applied Research and Innovation Centre at Selkirk College led the work on mapping and created a report that captures lessons learned over the course of this multi-disciplinary rural research project (see Appendix C). The two academic institutions shared information and also enabled access to each other's relevant data.

The Senior Planner with the Central Kootenay Regional District was involved closely throughout the project. He sat on the Advisory Committee, provided feedback and insights, and also directed his GIS staff to assist with the map development. The entire Advisory Committee was involved in supporting the project direction and implementation, representing diverse fields, including health and farming.

Parallel to the data analysis focused on local government purview was a complementary initiative to reach and engage citizens in the Central Kootenay. A specialized Advisory Committee was created to guide the development of educational materials that would foster "food citizens". This group represented diverse backgrounds and skills and contributed significantly to the refining of vision, audience, content and visuals. The intent was to create educational materials that would spark both curiosity and the desire to learn more, as well as an increased sense of agency in each individual about their ability to create food systems that contribute to a range of shared goals, including environmental, social, personal, and economic well-being.

Policy recommendations were created, led by the Executive Director of the Food Policy Council, an acknowledged food policy expert and lead author of the Central Kootenay's Agriculture Plan. The recommendations were grouped to align with the categories used in the original research

scoping document: Existing Farmers; New Farmers; Hunger & Nutrition; and Food Economy / Systems. (See Appendix D)

Results & Lessons Learned

Partner Collaboration

The project was able to launch quickly because of the existing and strong relationships that existed between the Food Policy Council and key personnel at each of the partner organizations. Questions related to sharing of data, expertise and platforms did not arise as a result of the strong trust that already existed.

Nevertheless, as can often be the case when a small non-profit collaborates on a project with an academic partner, there are many unknowns that can include administrative minutiae as well as academic cycles and student / faculty availability, some more complex to resolve than others. For this project, the formal arrangement with each academic partner took different forms, had distinct payment schedules, and involved navigating financial protocols at remote sites. It took longer than anticipated to finalize and formalize the research memoranda of understanding. Nevertheless, the protracted legal processes did not unduly delay progress on the substance of the work together. Despite these formal MOU's, there were still areas that were not covered, resulting in some confusion over who was responsible for copyediting documents created by project partners, for example.

The original project plan intended a contract with West Kootenay Permaculture Coop to help to create and then deliver educational materials. With the COVID-19 outbreak, this aspect of the project had to be reconfigured and no longer necessitated their services. A contract was drawn up to engage the illustrator hired to create the educational materials.

An unplanned partnership with the University of British Columbia's Land & Food Systems program was integrated into the final four months of the project. This partnership was covered by an agreement between the Council and UBC and included learning outcomes for the students as well as an expectation that they would create educational materials for the Evidence Project.

The partnerships implemented through the project resulted in some unanticipated benefits. The two academic partners had not previously worked together and found a lot of alignment between their respective community-oriented and applied research mandates. It is expected that this will result in future partnerships between the two, including a possible bio-regional food systems project that has been in development for the Columbia Basin for some time, led by the Institute for Sustainable Food Systems.

The funds that the Council provided to Selkirk College for the work being undertaken by the Applied Research & Innovation Centre were used as matched funding for two successful Mitacs applications, resulting in additional resources to support the students who were contributing their time and expertise to the project.

Data access & use

The idea to make better use of data accessible to or owned by the Regional District actually originated with a GIS Technician with the idea using it to support decision-making processes. They were anticipating access to LIDAR data being generated by the province about the same time that the project launched.

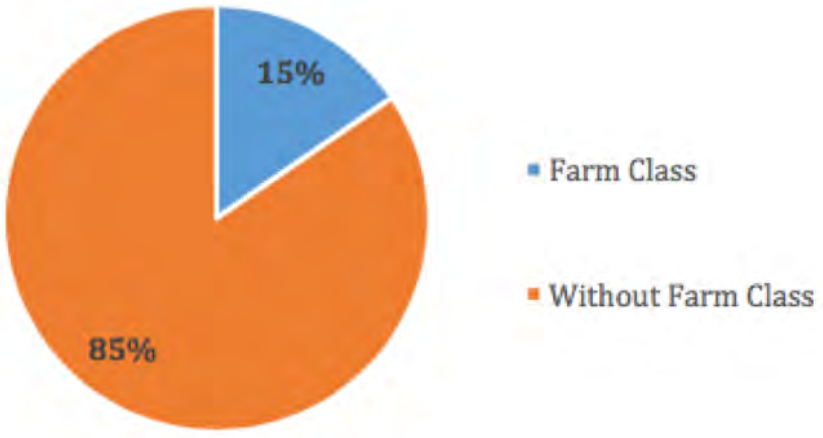
The idea to make best use of data to guide decisions originated within the RDCK. As a result, the project team had ready access to RDCK data in addition to the regular participation by the Planning Manager and other relevant personnel over the course of the project. Unfortunately, the promised LIDAR data never materialized. Initially there were equipment issues that delayed the start of the data gathering. Any access to the data was aborted completely when the aircraft carrying the data-gathering cameras crashed and destroyed the equipment. Nevertheless, the RDCK was able to make valuable datasets available and also worked closely with the GIS faculty and students.

Both academic partners had contractual relationships with data sources that they were able to make available to the project. (See Appendix B for data sources) Beyond sharing data, the two academic institutions also collaborated on analysis and refinement of materials being created for the project.

Some research questions could not be answered due to lacuna in the data available. Other data could not be used due to a lack of geo-referencing. Without a geo-reference, it is not possible to link the information to a specific community or region, which defeated the purpose of our research, which was to understand what is happening specific to a place.

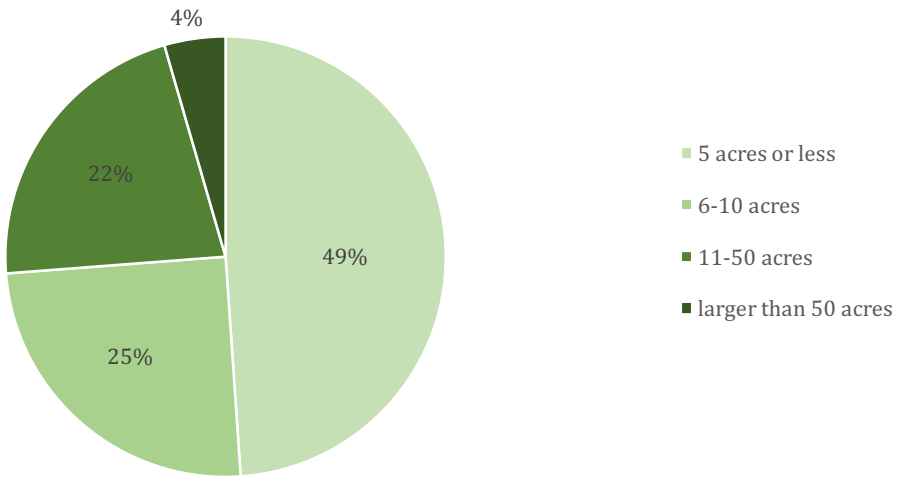
Despite some of the shortcomings related to the data, together with the project partners we were able to generate a wealth of information and materials that can be used to guide future land use planning, both at the level of the local governments and of the farm and related businesses. The study of data related to the Agricultural Land Reserve generated a lot of useful information. This pie chart provides a visual that points undeniably to the high turnover of agricultural land when farmers are not the land owners.

Figure 4: Percentage of sale transactions by farm class in RDCK, 2006 - 2018

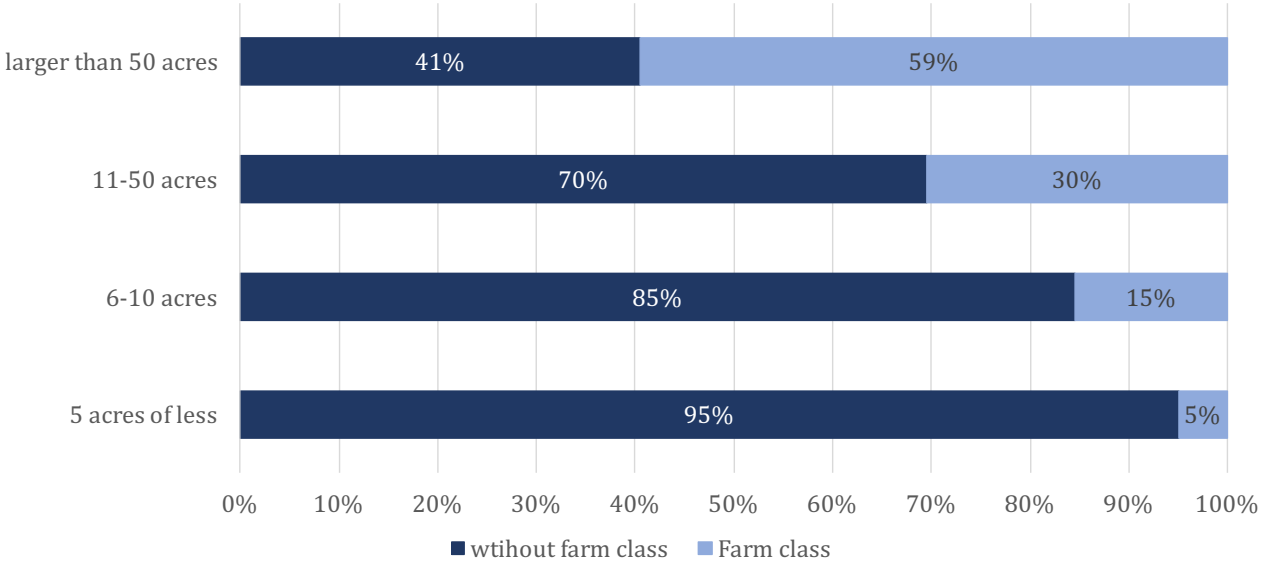


Just as telling and important for consideration by those making land use decisions are the following table and chart[2]. The first conveys the proportion of sales related to parcel size; the second depicts the percentage of those sales by parcel size that were instigated by active farmers.

Number of sale transactions by parcel size category, 2006 - 2018



Percentage of sale transactions by farm class and parcel size category in RDCK, 2006-2018



Together, these three data pieces point to the relative stability of the established farmers, who likely only sell their properties when they are done with farming on that site. It also points to the need for additional creative measures to assist those who wish to farm access the necessary land to do so. Various related recommendations can be found in the Policy Brief. (Appendix D)

[2] Pie charts & Table source:Polasub et al, Institute for Sustainable Food Systems, 2020.

COVID-19 Pandemic

The project launched in early 2019, with a projected end date of mid 2020. The results of the analysis and the products generated by the academic partners were just moving into the educational work and policy analysis when the pandemic broke out in British Columbia.

The longterm impacts of the pandemic were not at all clear in the early days but it was clear that our plans to create and disseminate educational materials through public engagement events would have to be put on hold at least initially. Our plans to engage with educators and with school children took a back seat to the more urgent questions on how to safely provide any educational opportunities for children at all. Likewise, it was clearly not the time to be providing public events aimed at an adult audience distracted by the impacts of the pandemic on their households, health and employment.

Local Government also had other more urgent matters to attend to. In the early stages of the pandemic when it became abundantly clear that long supply chains were vulnerable, the Food Policy Council was approached by the Emergency Operations Centre of the Regional District to assist them in developing an emergency food security plan, which we did. Our regular contacts at the Regional District, like so many others, both pivoted their work focus and priorities and also began working remotely. Because the Evidence Project was established from the start to work virtually, accommodating the fact that we had far flung partners closely involved in the project, we were able to continue our work but had to adjust timelines and expectations when it came to the availability of our local government partners. The end result has been the formulation of policy proposals to be considered in 2021both for general considerations and priorities and integrated into any scheduled land use planning activities such as updates for official community plans.

We were able to secure the approval of the project's two main funders to extend the project timeline by six months, which gave us time to regroup and reformulate our approach to the educational component of the project as well as give our local government partners more time to work with us on the completion of the map platform.

The Food Policy Council convened a weekly COVID Roundtable in the first four months of the pandemic, switching to bi-weekly in July and monthly starting in September. The intent of the Roundtable has been to provide space for those involved in food systems (farmers, food processors and businesses, non-profits, local government) who live and work in the Columbia Basin to discuss our work, our challenges and to help find a path forward in this pandemic – for the immediate and the long term.Though not directly related to this project, these meetings with a range of food system actors across the Columbia Basin provided information that we have been able to integrate into our policy formulation.

Educational Materials

In September, when we re-initiated the creation of our educational infographics, we discovered that Illustrator we had engaged in January was no longer available. With support from the local arts college, we were able to secure the skills of a talented recent graduate. We then established virtual meetings of the Advisory Committee with the Illustrator to support the development of the infographics.

September also saw the creation of an unexpected but serendipitous partnership with the University of British Columbia's Land and Food Systems program. Six third year students were mentored by the Executive Director of the Food Policy Council in a community-service module during which they were to create the educational materials for the Evidence Project. Weekly meetings were established during which the interests and skills of the students were drawn upon to help formulate the content for the educational materials. The original intent was to create two distinct infographics: one would be based on a pantry stocked with foods from diverse cultures; and the second one was intended to foster a healthy relationship with food and one's body, aimed at mid-teens. More than half-way through the process, the academic advisory team required that the students amend their deliverables, which they felt were too ambitious.

This change forced another adaptation of our plans for developing educational materials. The UBC students decided to not create an infographic but rather to create a presentation aimed at a mid-teen audience that would include a powerpoint and accompanying instructional guide for the teacher. The students administered a survey on the suitability and value of the content they created, which was completed by a small sample of teachers and teenagers. The UBC students integrated the feedback into their final products which was a complete lesson plan, ready for any teacher to deliver to their students. The content focuses on prompting reflection and curiosity in the students about food, its meaning, how they are influenced in their food choices, and what agency they can have in their own food experience. The materials are too large to integrate into this document but can be found here. The UBC students did create an infographic that was part of their academic requirements and which captured their process of working with the Food Policy Council. It is included in Appendix E.

Despite the happy addition of the UBC students, with the intervention by their academic team, we had to adjust our plans and focus on creating the infographics in-house, to be drawn by our contracted illustrator. The Advisory Committee worked closely with Council staff and the Illustrator, to determine audience, communications goals, medium, imagery, colour schemes and format.

In spite of the pandemic delay, the UBC change in plans, and the short timeline, we were able to create two infographics that we believe will appeal to a broad audience and contribute to deepening people's understanding of both food systems and of food policy. The first infographic is of a tomato plant in soil. The tomato plant has a set of statements that convey broader food systems information about tomatoes intended to get people thinking more about the red fruit on their plate or in their sandwich. The statements cover topics from climate change, to biodiversity, mass production, to worker rights. This infographic is scaled to be printed on a ledger size paper and posted on the wall in a classroom or other public venue to spark conversations and thought.

The tomato plant and colour scheme are referenced in the second infographic which is a landscape with a person in the front and a series of questions that all relate to food policy. The goal of the food policy infographic is to help people to make the link between their personal food choices and policy. The infographic is accompanied by explanatory text on the back. The food policy infographic is scaled for standard letter size paper, to be printed double sided. Both infographics have been printed locally and will be disseminated through our Council members, partners and contacts in environmental education and the schools. They can also both be downloaded as a pdf from our website and are contained in Appendix F.

With the pandemic, many of the teachers and schools with which we had established contact early in the year were no longer available or able to engage with the project. Nevertheless, we were able to develop a small cohort of teachers and students who provided feedback or indicated an interest in using the materials in their learning / teaching. One outcome of our new outreach that we had not anticipated but were happy to accommodate was a request to make the materials available in french. The services of a professional translator were engaged to translate the text of the two infographics into french. The french language versions will be circulated to the various french immersion classes and teachers in the schools districts within the RDCK, as well as to the Association des francophones des Kootenay Ouest (AFKO).

Communications & Outreach

The pandemic disrupted our communications implementation. We had recently received most of the products of our academic partners. We finally had some content that, under normal circumstances, we would use to catch the attention of the general public. However, by March, both conventional and alternative news streams were pretty much exclusively devoted to the ongoing impacts, evolving science, and health crises related to the pandemic. We were not, therefore, confident that we could and would be heard. So we delayed our outreach and also put our educational materials development on hold while we waited to see what the options might be, in particular for the in-person engagement planned. Over time it became clear that in-person engagement was no longer an option for at least the remainder of the project term.

In September we engaged a communications professional at the Food Policy Council as our Engagement Coordinator and she immediately set about enhancing and improving the quality of our content and visuals across all our media. She expanded our social media presence by adding Facebook and Instagram to our existing website and Twitter account. She also improved our website, the Council's overall branding, and supported the development of a blog series and more readable e-newsletters, which included pieces on the Evidence Project. Over the course of three months, our new Engagement Coordinator's efforts resulted in a steady increase in our newsletter sign-ups, "click throughs", and social media presence. She has also created a dedicated web page on our website on which all the materials are collected and organized.

Because of all the disruptions to the project and our communications strategy as a result of the pandemic, we will be rolling out a follow-up communications plan for the project throughout 2021. Our Engagement Coordinator is particularly skilled at identifying content suitable for a range of media and that should and can be amplified through new and creative media channels. With all the materials created over the course of the project, there will be an abundance of content to draw on and use to help deepen the impact of the project.

Policy Development

Policy recommendations were captured in document entitled “Policy Brief” (found in Appendix D). The recommendations were formulated based on a combination of the original research questions and scope and then grounded in the results of the data access and analysis.

The Policy Brief itself is structured to align with those found in the RDCK land use documents, such as the consolidated land use bylaws and official community plans, namely Objectives followed by Policies. Three key themes arose from the data analysis and these provided the framework used in the Brief for the recommendations: Land use and access; the ALR; and Climate Change impacts.

The Policy Brief was submitted to the RDCK at the end of December. The delayed submission reflected both the ongoing challenges posed by the pandemic to the project timelines over the course of 2020, as well as the pre-occupation of the RDCK with the pandemic and remote work constraints. Nevertheless, the collaboration between the Food Policy Council and the RDCK over the 2 years of the project has prepared the ground well for due consideration of the proposals contained in the Policy Brief. Moreover, additional collaborations in 2020 between the two agencies demonstrates that the RDCK is increasingly seeing the Food Policy Council as content experts on both food systems and food policy: the RDCK has engaged the Council for guidance in responding to the threat that the pandemic poses to area residents’ food security; and relied heavily on the expertise of the Council in developing a submission on increased rural access to legal slaughter for a meeting with Ministry of Agriculture senior staff at the annual Union of BC Municipalities conference in September.

The policies formulated also all apply to Official Community Plans at the level of Objectives and Policies, rather than the specifics of Zoning. This was a deliberate choice as only the prescriptions found in zoning are enforceable. While we certainly seek to have our recommendations enforced eventually, by keeping them at the level of objectives and policies, they provide direction and aspiration. They also allow for the time that may be necessary to generate support amongst the impacted residents for any of the proposed changes before they are embedded in zoning.

Lastly, some of our proposals are operational. These include the recommendation to revisit and update the Floodplain Management Bylaw on a more frequently schedule than has been done in the past. The impacts of climate change, as documented in the Institute for Sustainable Food Systems’ Potential Crops Report, as well as in many regional climate change reports of the past decade, point to the importance of ongoing support for farmers as they seek to adapt to the changing climate. Continued funding by the RDCK as a partner in the Kootenay Boundary Farm Advisors program is therefore recommended, at least in the absence of a provincially run and funded agricultural extension service. And the multi-layered map created by the Geographical Information Systems faculty and staff at Selkirk College’s Applied Research & Innovation Centre and housed on the RDCK’s mapping platform provides a dynamic tool for use by RDCK staff and elected officials to ground land use planning decisions in real world data.

Next Steps

The Food Policy Council will continue to work closely with the RDCK and will work with both staff and elected officials to test the proposals in the Policy Brief. The various reports, the mapping platform created by the project and controlled by the RDCK, and the expertise of the Food Policy Council will support the eventual creation of enforceable zoning bylaws and other measures to implement the recommendations, over time. The Food Policy Database hosted by the Institute for Sustainable Food Systems at Kwantlen Polytechnic University will assist in the work of translating the policy recommendations to zoning language.

All the materials created over the course of the project will be housed on our website and will be widely shared with other food policy councils and food policy practitioners through outreach provincially and nationally through the Canadian Association of Food Studies, the Canadian Association of Food Law & Policy, the new Food Communities Network, and the BC Community of Practice of food policy practitioners, among others.

The RDCK has updates scheduled in 2021 for several official community plans. The tools generated by the project shall be used to support the public engagement for the consultations on the OCP updates. The various products of the project also provide a rich source of material for our communications. Throughout 2021, we will regularly promote and amplify lessons learned and tools created through the project using our various social media and other communications channels.

Lastly, we will create our own and watch for suitable events and avenues for promoting and making best use of the educational materials created during the project. With the planned COVID-19 vaccination roll out in 2021, we are hopeful that classrooms and public life shall return to something resembling normal. We shall then be able to convene groups of adolescents and of adults to explore together the ways in which we can all deepen our understanding of and agency in shaping food systems that will best serve our communities and environment now and in the future.

Appendix A: Research Scope

Evidence-based Policy Development Project
Scope and focus of the RDCK data analysis

10 April 2019, UPDATED 5 July 2019
Abra Brynne, Executive Director & Project Manager

Overview

The first phase of this project (March through October) is to analyze the data (GIS + LIDAR) available from the RDCK with the intent of identifying factors, trends and areas of concern for the long-term viability of the food systems of the RDCK. Food systems as an area of study is very broad as is the range of factors that will impact them, including the Columbia River Treaty, climate change and the related changes in weather events and temperatures, and policy.

The key research question for this project is to determine **what factors help or hinder the viability and resiliency of the food systems of the Central Kootenay**. The findings of the data analysis will be applied to the policy platforms of local government in the RDCK.

Scope and focus categories

The list below is grouped by categories and is intended to identify research interests from the Council and our partners.

1. Existing farmers
1A: Water flow & volume changes - indicators of the need to plant trees or other soil-retaining vegetation? Or revisit zoning and siting requirements to protect significant infrastructure from potential flooding? Or predicting need to change agriculture practices or sectors to adapt to increased heat and reduced water access?

1B: Predicting flash floods / evacuation needs & routes, particularly for livestock. Analysis of impact on soil loss, infrastructure loss potential.

1C: what combination of bylaws (or the lack thereof), ALR vs non-ALR, etc point to best outcomes for agriculture? Has ag zoning and / or the ALR actually helped farms be more viable or hindered them? Can we link farm status / land use to income levels?

2. New farmers
2A: Fallow land suitable for or with past ag activity, both urban and rural

2B: Identifying areas suitable for agriculture (good soil, water, exposure) that are distant from markets and therefore lower land cost for new farmers.

2C: What types of agriculture are most suitable for different areas of the RDCK?

3. Hunger & nutrition

3A: What can we learn about food deserts and how the food systems of the RDCK are serving or not those who are impoverished and hungry in our communities?

3B: Do bus routes move people without vehicles to where healthy food is available?

3C: What kinds of food outlets are close to schools, low-income housing?

4. Food economy / system generally

4A: Data on lot size groupings, soil quality etc that may give insight into suitable forms of agriculture (eg. goats or wine suitable here but not salad greens or cold-sensitive tree fruit)

4B: Is there a way to identify, based on past use, parcels that are too contaminated to be suitable to food production?

4C: State of the roads re transportation options – which ones are easier to travel on, are there seasonal considerations that impact the transport of food? How do they relate to locations of farms / processors?

4D: Emergency preparedness: can we demonstrate the need to include agriculture & food security in hazard analysis being undertaken related to disasters (flood & fire)?

4E: Mapping high value ag land so as to ensure that future development does not happen there.

4F: Mapping Indigenous land area / claims / traditional use to ensure that ag and development do not compromise it.

4G: Mapping water systems (surface, community, etc). Identifying demand versus availability on communal systems. Chlorinated or not related to irrigation / costs. How well does the available water suit different forms of agriculture? Which water systems provide potable water (relative to those considering establishing processing facilities that will need potable water).

4H: Mapping existing facilities that are part of the food systems (abattoirs, transportation hubs, processing facilities, emergency food services etc).

Appendix B: Data Analysis Spreadsheet

Spatial Data Research Analysis

Research Are	Spatial Data	Data exists & source	Notes	Data Accessibility	Data Source(s)
Rural / Landscape data					
2A, 4A, 4B	land use	RDCK	yes	Need to make routine request or formally via Freedom of Info Act request - possible fee, time approx 30 business days	RDCK
1C	ALR land	GeoBC		Download of data is restricted - requires a request to download data via Data Contact in Contact Information section on Catalogue record HOWEVER, was able to find ALR information in Selkirk drive	
2A, 2B	ALR utilization	RDCK	RDCK sent the dataset	**Unknown	RDCK
2A	fallow agriculture	RDCK			
4A, 4E	soil quality	GeoBC	yes	Open Government License - British Columbia	DataBC, Ministry of Environment and Climate Change Strategy - Knowledge Management
4E	Property values	RDCK	assessment or sales values?		
4E	sun exposure	SGRC			
1C, 4E	Farm capital investment, income?	Stats Can Ag Census			
1A	suraface water systems (vulnerability)	GeoBC	chlorinated community water systems cost farmers more to irrigate, plus add chlorine to their soils	**App is Access Only, Open Government License**	DataBC, Ministry of Environment and Climate Change Strategy - Knowledge Management/BC Environmental Monitoring Locations DataBC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development - GeoBC/BC Major Watersheds DataBC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development - GeoBC/Freshwater Atlas Manmade Waterbodies DataBC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development - GeoBC/Freshwater Atlas Wetlands DataBC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development - GeoBC/Freshwater Atlas Stream Network, Selkirk College DataBC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development - GeoBC/Freshwater Atlas Lakes
4G	aquafers	GeoBC	if this can be known - would be good to know where they are and their size / changes over time	Open Government License - British Columbia	DataBC, Ministry of Environment and Climate Change Strategy - Water Protection and Sustainability
1C	farm locations	GeoBC	yes; csv file - no locations for georeferencing/digitizing; (AB June 14/19 - found an *.xls file that actually has locations BUT 2011 data)	Open Government License - British Columbia	DataBC, Ministry of Agriculture - Corporate Governance, Policy and Regulation, Statistics Canada
	environmental reserve	GeoBC		Access Only - requires permission	
1B	forest fire risk / exposure	RDCK	mapped relative to location of farms - emergency planning related to farms eg: communication re: how/when to evacuate livestock (fire/flood)	**Unknown	RDCK
1B	flood risk	GeoBC\RDCK	mapped relative to location of farms	**Unknown	RDCK, Ministry of Land, Water, and Air Protection
Food Economy					
2C	food types grown / raised	GeoBC	csv file - no locations for georeferencing/digitizing	Open Government License - British Columbia	DataBC, Ministry of Agriculture - Corporate Governance, Policy and Regulation, Statistics Canada
1C	parcels with farming income	BC Assessment		Requires data request	
4H	food retailers	SGRC	would be good to be able to tag them as chain or local / independent		
4H	processors	SGRC	knowing locations of processing facilities could help understand whether on farm processing is needed/viable; csv file - may be able to do a layer join	Open Government License - British Columbia	DataBC, Ministry of Agriculture - Corporate Governance, Policy and Legislation
4H	producers	SGRC	not sure if this will add to the farm locations above		
4H	food system activity nodes	SGRC	we will need to define this if we are going to use it		
1C	fire service areas	RDCK	where they exist, insurance costs are lowered -> RDCK Fire Zones data may cover this - need to confirm (AB - June 7/19) - Yes, Fire Zones cover this (AB - June 11/19)	**Unknown	RDCK
4H	CSA drop locations	SGRC	directory of Kootenay farms that have CSA program - many	Subject to licenses of individual data sources	
Urban / Municipal data					

Spatial Data Research Analysis

Research Are	Spatial Data	Data exists & source	Notes	Data Accessibility	Data Source(s)
2B	municipal boundaries	RDCK	may be useful to see encroachment issues, or proximity	Open Government License - British Columbia	DataBC, Ministry of Municipal Affairs and Housing - Governance and Structure
3A, 4H	community gardens	SGRC			
4H	farmers markets	SGRC	related to this project including info on other topics within	Subject to licenses of individual data sources	
3B	transit routes / stops	BC Transit	access to grocery stores -also may provide information	Open Data - BC Transit	BC Transit
3A, 4H	community kitchens	SGRC	this may be more useful at a municipal level but not for		
3A	food deserts / swamps	GeoBC		Access Only - requires permission	
3A, 4H	food bank locations	SGRC/Data Catalogue	approximate locations of food banks in BC - (added link AB -	Access Only - requires permission; (new link is	Data BC, Ministry of Forests, Lands, Natural Resource Operations and Rural
2B	population density	Statistics Canada	csv file - no location for georeferencing/digitizing	Open Government License	Statistics Canada
4H	green spaces - under public ownership	SGRC/RDCK			
	schools	School District 8	may need to use data from one or two more School Districts to cover all of the RDCK - should be able to	Subject to licenses of individual data sources	
	vacant land		municipal?		
3C	grocery stores, corner stores, restaurants				
Climate / Weather data					
	wind				
	temperature (effects on water	Environment Canada			
	precipitation	Climate Portal	both by location and changes over time		
Other / Miscellaneous					
	landfill locations	RDCK			
	transfer site locations	RDCK		**Unknown	RDCK
4H	compost facilities	RDCK			
4C	roads	GeoBC		Access Only - requires permission	

Highlight guide:

Green - has georeferenced data (feature classes - geodatabase and shapefiles), BUT may need more data and some data may need to be made into feature classes

Yellow - csv files that have no locations for georeferencing/digitizing OR files that may be able to be joined with another layer

Red - requires permission (Access Only, data download restricted unless permission received, etc.)

Light blue - useful website links -> locations will need to be georeferenced/digitized

Appendix C: Methodology Report

2020 EVIDENCE-BASED FOOD POLICY PROJECT

Partnerships in Food Systems Research:

Lessons learned from a multidisciplinary research project in a rural setting

Photo: Abra Brynne

APPLIED RESEARCH & INNOVATION
Selkirk College

SELKIRK GEOSPATIAL RESEARCH CENTRE
Selkirk College

CENTRAL KOOTENAY FOOD POLICY COUNCIL

Hannah J. Dueck and Dr. Adela Kincaid

With contribution from:

Abra Brynne, Central Kootenay Food Policy Council

Shauna Fidler, West Kootenay Permaculture Co-op (Kootenay Food)

Ian Parfitt, Selkirk Geospatial Research Centre

Wallapak Polasub, Institute for Sustainable Food Systems at Kwantlen Polytechnic University

Rachael Roussin, Kootenay & Boundary Farm Advisors

Tara Stark, Interior Health

Nelson Wight, Regional District of Central Kootenay

PROJECT PARTNERS

Research partners were asked to provide a description of their organization, a short biography, and to describe their role in the project. The results, in their own words, are below.

Central Kootenay Food Policy Council
Abra Brynne

Formed in 2016, the Central Kootenay Food Policy Council Society builds a just, sustainable, and prosperous food system. Each council member serves as a vital conduit for information exchange between their respective sector and communities and the Food Policy Council. The council explores issues related to hunger, food waste, farming, land and water, distribution and processing. Council members reside across the region and are engaged in many facets of our food systems. Together, council members' collective relationships, knowledge and experience help identify and create solutions that are not possible alone.

The Central Kootenay Food Policy Council makes policy recommendations and brokers best practices and knowledge about food systems in the Central Kootenay.

The Council developed the concept for the Evidence-based Food Policy project, secured partners and funding, managed the project, and contributed expertise and content, including the creation of policy recommendations derived from the findings of our academic partners.

Abra Brynne grew up on a farm in BC's Okanagan Valley, where her family of 13 raised a large portion of their food needs and were members of a local tree fruit marketing co-operative. She has worked closely with farmers and on food systems for thirty years, with a priority on food value chains and the regulatory regimes that impede or support them. She has worked on policy advocacy and transitions in the fisheries, meat, cannabis and organic sectors. Abra is a founding member of many agriculture and food-related organizations, including BC Food Systems Network, Food Secure Canada and the Canadian Association of Food Law & Policy and has led the Central Kootenay Food Policy Council since it was formed in 2016.

Institute for Sustainable Food Systems, Kwantlen Polytechnic University
Wallapak Polusub

The Institute for Sustainable Food System (ISFS) is an applied research and extension unit at Kwantlen Polytechnic University (KPU) that investigates and supports regional food systems as key elements of sustainable communities. The institute focuses predominantly on British Columbia but also extends programming to other regions.

ISFS' applied research focuses on the potential of regional food systems in terms of agriculture and food, economics, community health, policy, and environmental integrity. Its extension programming provides information and support for farmers, communities, businesses, policy makers, and others. Community collaboration is central to the institute's approach.

Wallapak's role in the Evidence-based Food Policy Project was to coordinate the ISFS research team to conduct two individual reports on crops suitable for future changing climates in the RDCK and characteristics and price of Agricultural Land Reserve lands. The research team consisted of four members: Grace Augustinowicz, Alexander Stark, Kent Mullinix and Wallapak Polasub.

Wallapak Polasub moved to Canada from Thailand and made Vancouver her new home in 2011. She joined ISFS as a research associate in September 2013. Her interests are on the economic impacts of local food, farm product direct marketing, co-operatives and sustainable economic development.

Kootenay & Boundary Farm Advisors
Rachael Roussin

The Kootenay & Boundary Farm Advisors (KBFA) provides producers with free, technical production support and information from a network of specialized resources, including independent consultants and academics.

KBFA supports producers to improve agricultural production and efficiency by helping find solutions to farm-specific production issues, coordinating educational events and connecting producers to information.

KBFA is funded collectively by the regional districts of Kootenay Boundary, Central Kootenay, and East Kootenay, and the Columbia Basin Trust. The organization's services are free to agricultural producers in working towards commercial viability in this region.

Rachael Roussin's role in the project was as a member of the project advisory committee.

Rachael Roussin has a Masters' degree in Land and Water Systems from the faculty of Land and Food at UBC and brings over 10 years of experience coordinating environmental and agricultural programs. Her technical background includes soil science, soil capability for agriculture, watershed management and climate change impacts and opportunities for agriculture. Rachael is an Environmental Farm Plan Advisor for BC, is an educator on soil health and agricultural land, has operated a market garden, managed her local farmers' market, and sits on several food and agriculture boards and committees. She is the program lead and coordinator for the Kootenay and Boundary Farm Advisor program (KBFA).

Interior Health Authority
Tara Stark

Interior Health (IH) provides a wide range of integrated health-care programs and services to residents across BC's Southern Interior. IH's mission is to promote healthy lifestyles and provide needed health services in a timely, caring, and efficient manner, to the highest professional and quality standards.

Interior Health's Healthy Communities Program aims to improve health and wellness by working collaboratively with local governments and community partners to create policies and environments that support good health.

Tara Stark worked in an advisory capacity for the Evidence-based Food Policy Project and participated in the working group that created the educational activities and materials for school-based and public education events.

Tara Stark is a registered dietitian who works on food security and healthy eating with IH's Healthy Communities Program. She has been a member of the Central Kootenay Food Policy Council since 2017.

Regional District of Central Kootenay
Nelson Wight

Incorporated in 1965, the Regional District of Central Kootenay (RDCK) is a local government that serves an estimated population of 60,000 residents. The region consists of 11 electoral areas (A, B, C, D, E, F, G, H, I, J, K) and nine member municipalities: Castlegar, Creston, Kaslo, Nakusp, Nelson, New Denver, Salmo, Silverton and Slocan.

The RDCK contributed to this project by providing data for GIS analysis, helping to ensure that the project outcomes aligned with RDCK objectives and needs, and providing input on how this project could best connect to and benefit the work being done to deliver planning services to residents.

Nelson Wight is currently employed as the Planning Manager for the RDCK. His background in agriculture extends back to his experience growing up and operating his family's mixed beef cattle and grain farm in central Alberta prior to pursuing a career as a professional planner. His work as a planner in BC for the past two decades has always incorporated aspects of agriculture and food policy. From his time in the Okanagan—where he worked closely with producers as a staff liaison to the City of Kelowna Agriculture Advisory Committee—through to today, where he leads a talented team of planners to implement and shape local government policies that can work to support a robust food system for the RDCK.

Selkirk Geospatial Research Centre, Selkirk College
Ian Parfitt

The Selkirk Geospatial Research Centre (SGRC) is a geomatics centre of excellence launched with BC Knowledge Foundation and Canada Foundation for Innovation funding in 2004. The SGRC is closely connected with Selkirk College's Advanced Certificate, Applied Diploma and Bachelor of GIS programs and has research strengths in GIS analysis, web mapping, and remote sensing. SGRC also operates a fleet of remotely piloted aerial systems (RPAS – also known as drones) that enable the centre to collect its own imagery and LiDAR data. Current projects include an Open Data SSHRC grant and a Forest Technology NSERC grant. See www.sgrc.selkirk.ca for more information.

The SGRC's mandate is to be a regional centre of excellence in geomatics, to advance the capability of communities and industry to adopt geospatial technologies and to provide leading-edge learning opportunities.

Ian Parfitt sat on the advisory committee for the project and oversaw spatial data collection and analysis conducted during the first stage of GIS analysis.

Ian Parfitt is a geomatics and project management expert. He leads RPAS and geomatics research at the Selkirk Geospatial Research Center (SGRC) at Selkirk College in Castlegar, BC.

West Kootenay Permaculture Co-op (Kootenay Food)
Shauna Fidler

The West Kootenay Permaculture Coop (aka Kootenay Food) is a not-for-profit co-op guided by the ethics of permaculture: care of earth, care of people and return of surplus.

The coop is a community-based co-operative working to build a healthy and food resilient region through collaboration, education, media and net positive initiatives.

Shauna Fidler is a permaculture and graphic designer working to support food and farm businesses through branding, food packaging and design services and consultation. She is chair of the West Kootenay Permaculture Coop and a member of the Central Kootenay Food Policy Council.

Young Agrarians
Hailey Troock

Young Agrarians (YA) is a farmer2farmer educational resource network for new and young farmers. YA's Grow-a-Farmer strategy in B.C. engages new, young and potential farmers on-line, brings them together to network and learn together on and off farms, and when ready to start farms, supports them to access land, as well as receive business and production mentorship from a seasoned farmer.

The long-term goal of YA is to increase the number of viable, new farm businesses in B.C. The program has developed on-line, through events, and an on-farm Apprenticeship Program in Regenerative Agriculture in Alberta.

Since YA began in January 2012, the network of participating farmers has grown at the grassroots level across Canada from coast to coast through farms organizing and building community. The YA network is made up of a diverse array of food growers and lovers: rural and urban farmers, market gardeners and livestock-raisers, holistic managers, seed savers, food activists, bee keepers, community gardeners, food/farmer organizations and more - all working to steward land and soil, and grow our local food systems.

Hailey Troock brought her policy skillset and experience in promoting and identifying opportunities for new farmers to the advisory committee for this project.

CONTENTS

PROJECT OVERVIEW

The overall purpose of the Evidence-based Food Policy Project was to develop an evidence base and strategic rationale for policy development to support and promote sustainable and viable land and water use and vibrant food economies in the Regional District of Central Kootenay (RDCK). See *figure 1*, right, for a map of the RDCK region. Prompted by demand in the region and informed by end-user needs, the project is arguably a community-driven initiative. A multidisciplinary team was assembled to accomplish the various objectives of the project, which included factors that impact existing and new farmers, hunger and nutrition, as well as economic factors and food systems in general. Led by the Central Kootenay Food Policy Council, the team spanned academic institutions, community and public organizations, and local government. Included on this team were two departments at the Applied Research and Innovation Centre at Selkirk College (ARIC): the Selkirk Geospatial Research Centre and the Interdisciplinary Intern Team. Notable aspects of the research structure include its entirely virtual format and the autonomous yet collaborative nature of the work. The project provides mapping and analyses of factors that affect food systems in the region and helps support evidence-based decision making within local governance. Lessons learned from it provide the basis for a research model that can guide similar initiatives for other rural communities and future projects in the Kootenays.

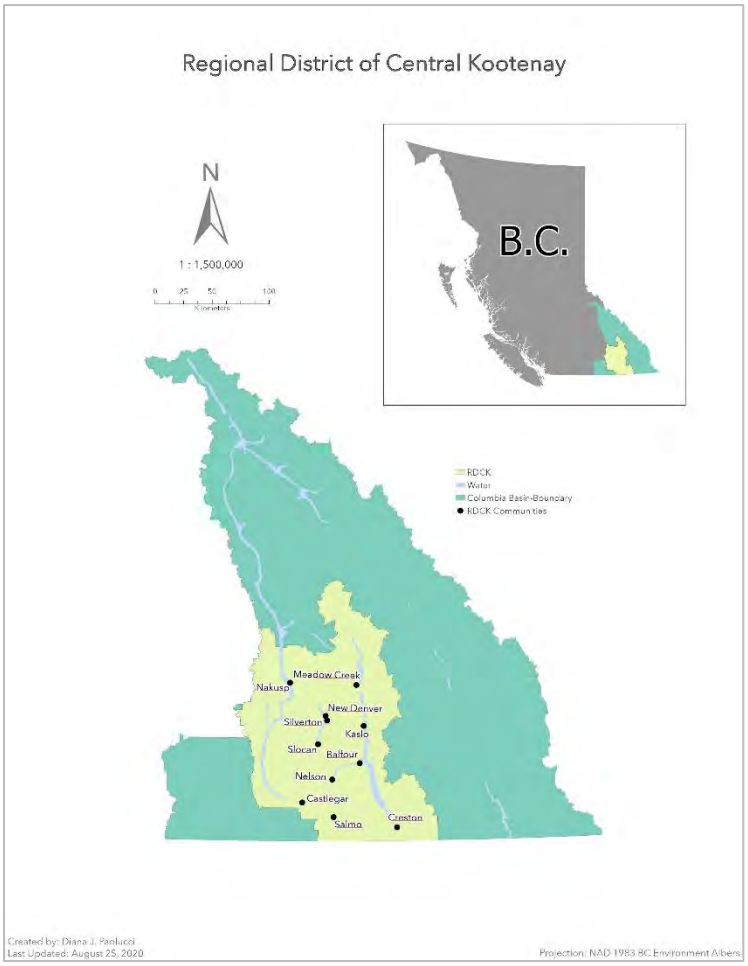


Figure 1: Regional District of Central Kootenay, British Columbia, Canada

About this report

This report includes a brief literature review, a description of the research model, the results of interviews conducted with research partners, directions for future research in the Kootenays, and recommendations to encourage the success of similar research partnerships in the future.

LITERATURE REVIEW

This brief literature review helps to situate this project in terms of project philosophy, provides local context, and supplies a basis for analysing interview results.

Defining "food systems"

Food systems are often viewed as "a set of activities ranging from production through to consumption" [1] (p. 1), a broader definition of food systems includes factors that influence and shape those activities, the activities themselves, and outcomes of the activities (including social welfare, food security, etc.), as well as other determinants.[1] It is important to note that food systems are plural and multiple – most people in the world participate in and rely on a number of food "systems" for their sustenance, ranging from backyard produce to grocery and convenience stores to local farm stands and beyond.[i]

Systems thinking as a framework for research partnerships and food systems

Systems thinking is an adaptable concept, applicable across a wide range of disciplines and areas.[2] While definitions vary slightly across disciplines,[3] essential aspects of systems thinking are taking a macro perspective of an issue, considering all parts of the whole, and recognizing that issues are dynamic and changing (rather than static).[2] Further, systems thinking addresses that people themselves are not separate from issues and the environment they exist in: "systems thinking [is] a cognitive paradigm with which people come to perceive themselves and the world to be dynamic entities that display continually emerging patterns arising from the interactions among many interdependent connecting components" (p. 646-647).[3] Systems thinking asserts that problems do not exist in isolation, are dynamic, and cannot be separated from the social and physical terrain in which they are situated. This makes it a useful construct for considering this research project, which, both geographically and socially, has diverse interconnected players that should not be considered separately from the environment in which the project was situated. Systems thinking is also a natural fit for discussing food systems, as food systems are extremely complex, with considerable local and global interconnectivity. It has been suggested that adopting a systems approach specifically in agriculture is imperative,[4] and at least one researcher has made the connection between systems thinking and food systems, writing that her understanding of a food system "lends itself to a 'systems' approach"(p. 4).[1] Finally, understanding end-users' needs for research is crucial in applied work, and participatory approaches are therefore not only helpful, but necessary. Systems thinking and community-based

[i] A. Brynne (personal communication, July 16, 2020).

participatory research, which is an important part of the Selkirk College research model, complement one another.[5]

Research partnerships: challenges and success factors

Multi- and interdisciplinary research has received increasing attention for its apparent ability to tackle complex, real-world problems.[6,7] However, as its popularity has increased, so has awareness of its challenges.[7] Communication between researchers from different disciplines can prove difficult,[7] proximity can be important (and by implication, geographically distant collaboration difficult),[8,9] and a "core challenge" lies in "coordinating and integrating the work of individuals, workgroups, and organizations accustomed to working independently and autonomously" (p. 218).[10] It has been argued that, among other things, strong leadership, communication, and well-chosen team members can help to overcome some of these challenges.[9]

Local food systems and global context

The Central Kootenay region of British Columbia (BC) produces a wide variety of food,[11] but like the rest of the province and Canada as a whole, much of the food consumed within the region is imported. In the Central Kootenay, an estimated 95% of food consumed within the region comes from outside it. [11]

While the majority of food in the Central Kootenay is imported, there is interest in locally grown products from consumers in the region, and interest within local government to invest in local agriculture and food security.[11,12] There is also potential for more food production in the area. In an analysis of the arable land in the West Kootenays,[ii] the authors of a 2015 study determined that the region is "well situated to grow more food" (p. 186) from a land capability perspective.[13]

The ability to grow more food is not the only factor in increasing local production, however, and it is with these other factors – primarily economic in nature – that global systems are most entangled. The economic structure of national (and thus arguably local) food markets changed dramatically with the advent of globalization: removing trade barriers through free trade agreements exponentially increases rivalry among producers, whether they engage in export or not.[14]

The current COVID-19 pandemic has increased concern about local food systems and their resiliency, with people experiencing disruptions in their food systems on both the supply and demand side.[15] While there is concern about the resiliency of our food systems, the pandemic also presents opportunities for change. As is often the case with disruptions, COVID-19 "provides an opportunity for the creative destruction of mature systems and opportunities for transformation" (p. 26).[15] Paramount in this transformation is the sustainability and resiliency of local food systems.[15]

Holistic models of sustainability include safe, ethical, and equitable development.[16] Sustainability is primarily dependent on environmental boundaries,[17] and sustainable economies need support from strong social networks in order to function, especially in rural areas. Community development hinges upon sustainability that is also safe and ethical while working within a model that has an ecological ceiling.[16]

[ii] The West Kootenays encompasses the Regional Districts of Kootenay Boundary and Central Kootenay.

PARTNERSHIP MODEL

This project was shaped both by its geographical scope and the research partners involved.

Team and partnership structure

This project was guided by an advisory committee, which oversaw the research design and helped refine the research question and objectives. Project partners provided their expertise in different fields, contributed data, and produced various research products[iii] for the project. The RDCK, for instance, contributed data for analysis to partners and helped to guide various deliverables, including the web map produced by ARIC (see *figure 3*, below left, for overall project structure).

The team lead acted as the main conduit and connection between research partners, with two inter-partner connections that developed over the course of the project (see *figure 4*, below right). Some partners were active throughout the project lifecycle, while others were primarily involved in the initial design stages (e.g. on the advisory committee).[iv] Most partners worked independently from one another on discrete parts of the project. Results were occasionally shared with the other team members in meetings.

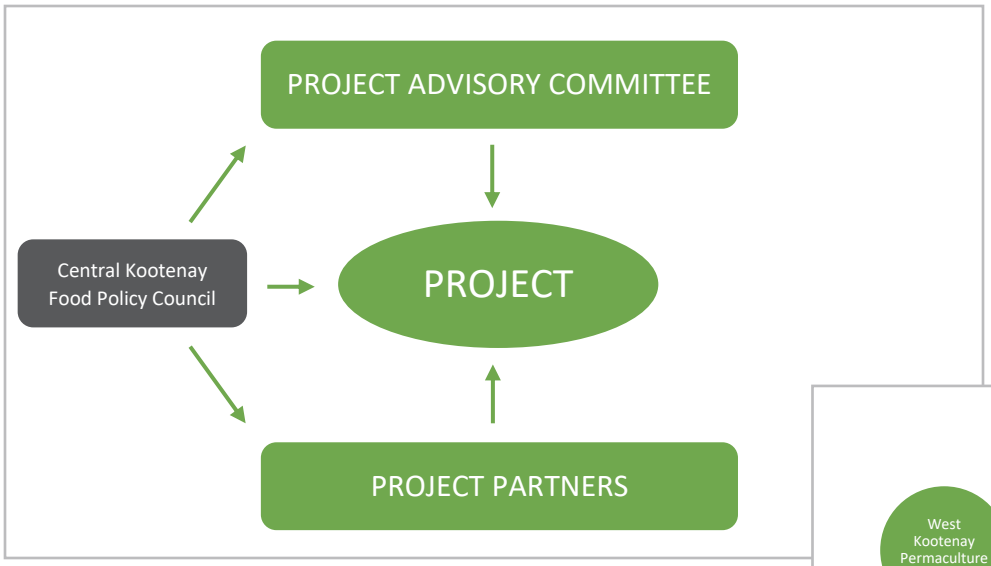


Figure 2: Project Structure

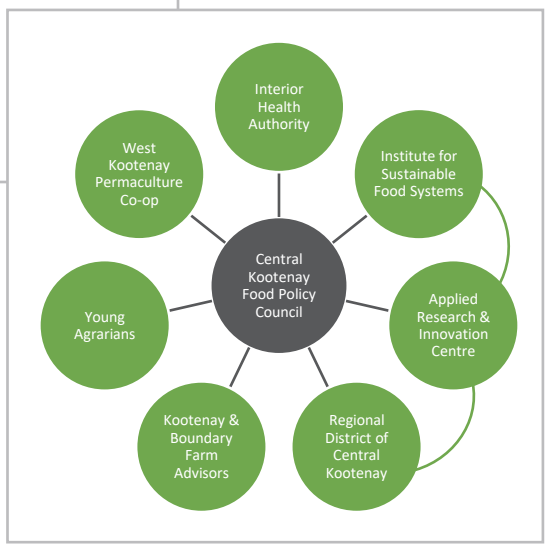


Figure 3: Partner Connections

[iii] E.g. GIS analyses and maps (ARIC) and research reports (Institute for Sustainable Food Systems at Kwantlen Polytechnic University).

[iv] In some cases, more involvement was intended, but these plans were disrupted by the COVID-19 pandemic that began to affect how work was conducted (and many other aspects of life) in British Columbia in March 2020.

Geography

The area of interest for this project was the Regional District of Central Kootenay (RDCK). All partner organizations involved with the project were located within the RDCK, with the exception of the Institute for Sustainable Food Systems (ISFS) at Kwantlen Polytechnic University (KPU), which is based out of Surrey, BC. The map below (*figure 5*) shows the concentration of partners in Nelson, Castlegar, Winlaw, Rossland and Surrey.[v] The size of the circles on the map is proportional to the number of partners in that geographic location.

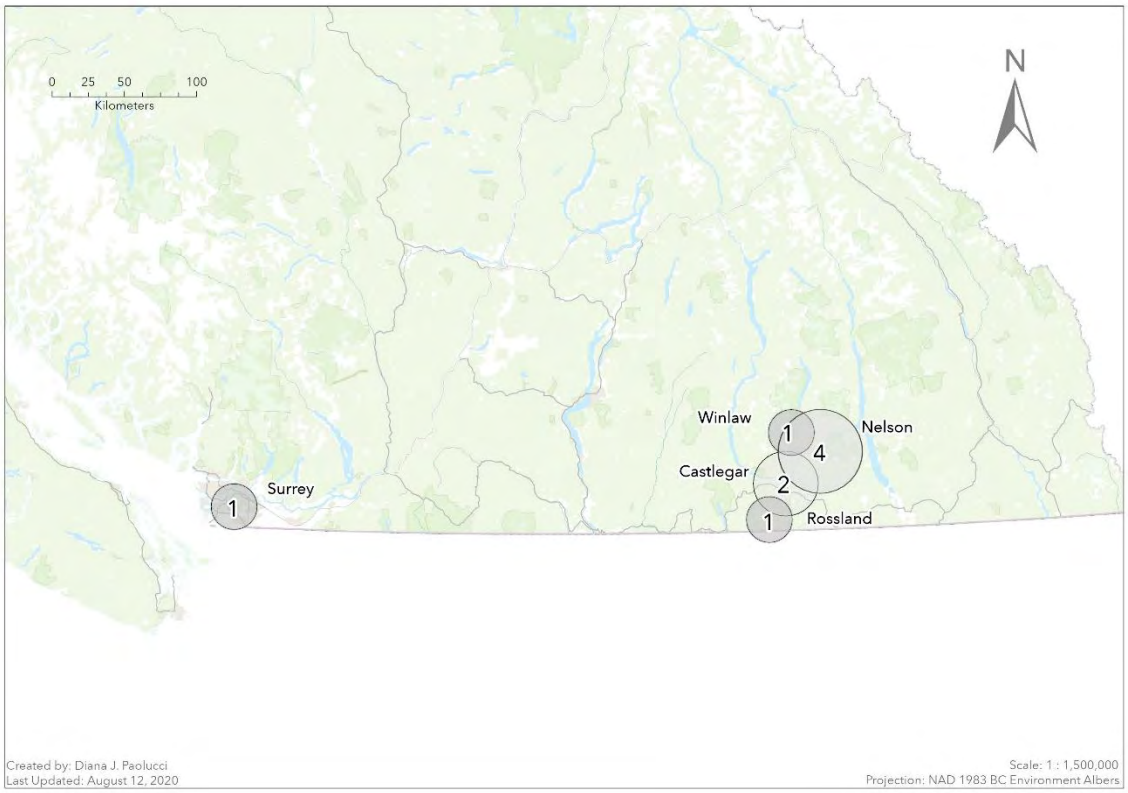


Figure 4: Partner Locations

As shown in the map, most partner organizations were located relatively close to one another (at least by rural Canadian standards).[vi]

[v] Note: the partners in Castlegar both belong to the Applied Research and Innovation Centre at Selkirk College, but are different departments (namely the SGRC and the Applied Research and Innovation Centre internship-based research team).

[vi] Partners within the RDCK were all situated within one hour's drive from one another.

INTERVIEWS

ARIC gathered responses from project partners to gauge the effectiveness of the research collaboration on this project and to identify areas for future research on food systems.

The results below are based on semi-structured interviews with seven of the eight partners involved in the project (excluding the authors; there were nine partners in total). Research partners were asked for their perspectives on the effectiveness of the partnership structure, any perceived benefits of participating, areas for future research, and perspectives on local food systems resiliency (for interview questions see **Appendix A**). Interviews were analyzed using a grounded theory approach. Results were first open coded and overarching themes were identified. Coded sections of interviews were then assigned to the identified themes using sub-coding.

Interviews with partners revealed that most felt that the overall research partnership was strong, although some challenges around connection and collaboration were identified. In terms of themes around food systems, most references made were related to economic food structures, closely followed by areas of interest for research. COVID-19 was also referenced by the majority of partners, as were local research needs. Themes are divided into two categories below: those related to the research partnership, and those related to food systems and directions for future research.

Research partnership

One of the strongest themes to emerge around research relationships was that of connection and cohesion. Through the course of this research project existing relationships were strengthened and new connections were created. However, some facets of the research project hindered early collaboration.

Partnerships and leadership

Partner organizations' impressions of the other people working on the project were positive. The team was described as "high functioning", "professional" and "interesting to work with." Partners mentioned that they "really enjoyed" working with the group. The lead of the project, in particular, was mentioned as having "excellent" project management skills and the ability to keep everyone on task; in turn, the lead attributed the success of the project to the ability of individual partners to stay on task without much direction. This suggests a high level of respect between partner organizations and team members, as well as a high level of autonomy.

Existing relationships

Existing relationships were one of the main factors in creating the project. The project lead's connections within the community, and to experts in food policy and agriculture across the province, ultimately formed the basis for the project. All partners indicated that they were involved in the project because of the project lead's connection to them, and many stated that the existing relationship with the lead was strengthened through the project. All project partners described their connection to the lead organization as "strong."

New relationships

Two new relationships were created between partners over the course of the project, specifically between ARIC and ISFS at KPU, and between a new ARIC research team and the RDCK (see *figure 6*, below). However, these relationships were created late in the project, indicating that there may be potential to improve relationship building in the future. Where relationships were created, these relationships were described by partners as "strong."

Figure 5: New Connections

Barriers to connection/cohesion

Three partners mentioned initially feeling disconnected from other project partners and, in some cases, unsure about their place in the project. These feelings were, however, mainly resolved by the end of the project. The initial disconnect was partly attributed to the meeting structure of the project – specifically, that all meetings were virtual.

Communication

Project meetings were conducted over video conference calls, with further communication taking place by email. As a strategy, this allowed for more distant partners (e.g. ISFS at KPU) to regularly participate in meetings. This structure also meant that COVID-19, which resulted in a discontinuance of in-person meetings across BC in March 2020, did not disrupt the structure of the meetings.[vii] While virtual meetings allowed for geographically dispersed project partners to participate more easily, some felt that it hindered collaboration. One project partner expressed regret that they had not realized earlier how and in what way their organization could collaborate with other project partners.

Increasing collaboration and cohesion

It was proposed by two partners that an in-person meeting at the beginning of the project would have encouraged more cohesion and collaboration in the team. A third suggested encouraging more time together for the partners, whether virtual or in person – although it was also mentioned that this is difficult to achieve given everyone's busy schedules.

[vii] COVID-19 did disrupt other parts of the project, such as plans to deliver educational events about food systems policy and civic governance in local high schools.

Outside of these interview results, the authors' experience with this project indicates that sharing of partners' initial results led to increased collaboration between partners.

Food systems

While most questions in the semi-structured interviews related to the research partnership, one question centered on important factors for food system resiliency, and another related specifically to research interests (for the complete list of interview questions, see **Appendix A**). The themes that resulted from these questions (as well as related themes that emerged unprompted) are expanded upon below. While not directly relating to research partnership effectiveness, these themes have been included for their value in providing a snapshot of areas of concern for researchers, organizations, local government, and others working in the realm of food systems in the Kootenays. In a more applied sense, they suggest specific directions for future research.

Economic food structures

Themes related to economic food structures included barriers for local producers in the form of influence from global systems and local topography.

Local economy, global influence

As indicated in the literature review, local food economies are inextricable from global systems, and research partners' views on this aligned with the literature. Global systems were primarily viewed as having a negative impact on local producers by skewing competition. Responses from four partners suggested that having to compete within a global system constitutes one of the primary economic barriers for local producers, with one partner describing it as "battling global food systems." Global systems were seen as supporting unsustainable/unethical practices, and price and sustainability were also perceived as inextricably linked: "Local farmers cannot get a fair price for their goods because the system is biased towards unsustainable practices."

"Local farmers cannot get a fair price for their goods because the system is biased toward unsustainable practices."

Views on how best to support local farmers within the context of global systems were varied. Partners mentioned public education, influencing consumer behaviour, policy (although it was also implied that there are limits to what policy can achieve), supporting shorter, more local supply chains, and encouraging "courageous" entrepreneurship within agriculture. Local community support was also mentioned as important for farmer success.

Geographic barriers and increased cost

Global systems are the source of some economic hurdles for local producers. Another is the region's topography. One partner mentioned that the mountainous terrain of the Central Kootenay limits mechanized means of production, increasing the need for costly labour inputs.

Food security: COVID-19, long supply chains, and indigenous food systems

Given the current situation, it is unsurprising that one of the stronger themes that emerged around food systems, and in particular around food security, was the pandemic and its effect. Research partners felt the pandemic has highlighted the importance of food security and the vulnerability of the current systems. Concern was expressed about the length of supply chains that the region relies on, and whether they would continue to be reliable in the future. However, aligning with the literature on the subject, research partners also saw the pandemic as an opportunity for change.[15] One respondent mentioned that this could

be an opportunity for renewed interest in local food; another suggested changing the perspective of Canadians to understand and value important ecosystems as they relate to agriculture. The Evidence-based Food Policy project was also mentioned for its ability to provide evidence for responding to the pandemic, specifically around strengthening local food systems.

In terms of supply chains, geography again plays a role, as well as globalization: between the Kootenays and the nearest port are mountain ranges that can hinder transport in the winter.

Finally, an important topic mentioned by two partners was that of indigenous food systems; specifically, the access and protection of indigenous food and food lands and producing food to share with elders (and others) during COVID-19.

Knowledge Translation

Themes around knowledge translation included how best to get the word out about the results of this project, especially given public perceptions of policy work as "uninteresting"; how to improve understanding of the complex data around food systems (especially spatial data); and the benefits of local and regional collaboration. The importance of narratives, as well as quantitative data, was mentioned by two partners, with one stating "it has to be both" and the other acknowledging the power of farmer success stories in encouraging local agriculture.

Directions for future research

A particularly important theme that emerged from the interviews was the desire for further research on local food systems and food policy: "the findings of this research beg for the next steps, next phase, next iteration." Reflecting the multi-disciplinary nature of the research partnership, personal and organizational research interests were varied. While diverse, the topics mentioned in the interviews also reveal synergies and potential areas for future collaboration.

"The findings of this research beg for the next steps, next phase, next iteration."

It was suggested that, given the vulnerability of the area and COVID-19, an important area to continue research in the future would be systemic analyses of food systems and how to support local farmers to improve local supply chain resilience. Other areas of interest included a statistical analysis of farmland prices using GIS technology, bio-regional mapping, and a potential partnership to explore organic extension services,[viii] as well as soil health and climate change research. Regarding gaps in local research, irrigation needs of specific crops were mentioned as a topic of interest for local farmers. Finally, one partner expressed an interest in research into technology such as drones and other GIS-related tools, to determine whether this would be useful for farmers in the Central Kootenay and if so, at what scale.

In discussing future research, many partners mentioned the importance of tying research to local and regional need, and for community-led or farmer-led projects. Also mentioned was the importance of projects at different levels of geography – local, regional, and provincial. Worth noting is that the barrier to future research partnerships that was mentioned most often was a lack of funding.

[viii] Organic extension services aim to connect academic institutions with farmers to promote sustainable production methods.

RECOMMENDATIONS

Four main recommendations emerged from the interviews with research partners.

Together, these recommendations have the potential to increase the effectiveness of future multidisciplinary food systems research projects by: encouraging collaboration where synergies are present; enhancing research usability by ensuring it is practicable and aligned with local need; and increasing research impact by amplifying awareness of it.

Recommendation 1: Encourage collaboration with sharing of expertise and in-person meetings

One connection between two research partners who had not previously worked together was sparked through the sharing of initial results. This indicates that encouraging an understanding of other partners' skill sets and areas of expertise could help promote collaboration. It may therefore be worthwhile to encourage partners in future research partnerships to share past work, or at least areas of expertise, in initial project meetings. Where possible, initial meetings should be in-person and opportunities for partners to socialize should be integrated.

Recommendation 2: Integrate end users in research partnerships

The aim of applied research is for it to be used. To accomplish this, a strong understanding of the needs/preferences of the intended user(s) is necessary. Ideally the research "client" – whether that is an organization, a local government, or a community– is integrated into the project planning process. Interview responses suggest that the earlier these relationships can be developed, the better. As projects are dynamic and change over time, integrating users of the research throughout the project life cycle is likely to be beneficial. In this project, the primary "client" of research produced by project partners was also the project lead, and thus was very well integrated in the planning process. However, a second potential user of the final research is the RDCK. The connection between the RDCK and ARIC was helpful in the creation of maps for the project.

Recommendation 3: Align research with local and regional needs

Research must align with local and regional needs to be effective. Future research projects should be informed by experts in the area – as this project was – and by those it will potentially impact or be used by. One research partner mentioned that in some past cases, research has not been aligned with farmers' needs, and/or specific gaps have not been addressed. This illustrates how important it is to undertake research that suits regional and local needs, and that a nuanced understanding of end-users is necessary. Future food systems research projects, especially those focused on specific regions, should incorporate the perspectives of those impacted by the research as much as possible.

Recommendation 4: Increase impact of research through communication strategies

A theme that emerged in various comments during the interviews was that of communicating and disseminating results beyond the scope of local government and local organizations to the general public.

Policy work is, unfortunately, not often seen as interesting or engaging; despite this, policy affects almost every aspect of our lives. Projects should include a communication strategy, and research networks built during projects can be used to disseminate results more widely and to reach specific audiences. A direct result of the interviews with project partners was a plan to develop, host and disseminate a webinar aimed at educating the public on the use of the RDCK Food Policy Web App developed by the intern team at ARIC. Research partner networks were suggested as a good way to reach webinar participants, illustrating how partners' connections and local collaboration can be utilized to raise awareness of projects.

CONCLUSION

This report has offered insight into a small, multidisciplinary research partnership in rural BC.

Multi- or interdisciplinary teams are often well-positioned to tackle complex issues; however, multidisciplinary work is not without its challenges.[6-10] The results of interviews with project partners on the Evidence-based Food Policy Project highlight the importance of participatory methods to ensure the relevance of research for the intended user(s) and suggest strategies to address some of the more common challenges within multidisciplinary teams. Participatory methods that integrate research clients into multidisciplinary projects can lead to a more holistic understanding of the research topic. Additionally, incorporating the perspectives of those impacted by the research can help ensure projects address regional gaps. Fostering an understanding of research partners' areas of expertise may help address some of the barriers to collaboration between researchers in different disciplines, therefore resulting in more effective collaboration, and opportunities for unstructured conversations between team members may encourage team cohesion. This project also demonstrates that while proximity may make partnerships easier,[8,9] geographical distance is not an insurmountable obstacle in rural collaborative research projects. Outsiders often wield much of the decision-making power in rural areas,[18] an issue which strong local representation on research teams could potentially reduce. Projects such as this one – community-driven, with abundant representation from local organizations on the research team – are increasingly relevant for rural development.

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APPENDIX A – INTERVIEW QUESTIONS

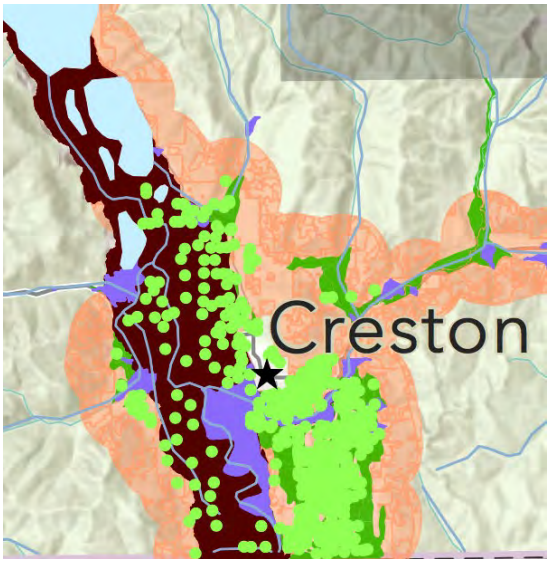
In the informal interview we may ask you some or all of the following questions, time allowing. You are welcome to skip any questions that you prefer not to answer, and we also welcome feedback outside of these questions. Your answers will be used to help guide and improve future collaborative projects.

1. Where are you and your organization located?
2. What geographical scope does your organization cover?
    a. E.g. region, province, country.
3. What pieces did you (and/or your organization) contribute to the project?
4. How did you become involved in the project?
5. What was your overall experience with the project?
6. How did you find the working/partner structure?
    a. Did it work well for you?
    b. If not, why?
    c. Is there anything that could be improved in the future?
7. Overall, did this project benefit your organization/ or further your organizational goals?
8. What are your future interests in relation to similar projects?
9. What do you see as the most important factors related to food system resiliency?
    a. In the RDCK, BC, and/or in general
10. Which of the other partners did you work with?
    a. How would you describe the strength of the relationship(s)?
    b. Who did you work with most closely?
11. Do you foresee working with this partner/these partners in the future?
    a. If not, why not?
12. Do you have any other comments to add?

Appendix D: Policy Brief

Evidence-based Food Policy Project

Policy Brief



CENTRAL KOOTENAY FOOD POLICY COUNCIL

Fostering a just and vibrant food system

Abra Brynne
Executive Director
December 2020

Table of Contents

Background

Project Overview

The Evidence-based Food Policy Development Project project was a civil society, government, and academia collaboration, led by the Central Kootenay Food Policy Council. Our partners included the Rural Development Institute and the Applied Research & Innovation Centre at Selkirk College, the Institute for Sustainable Food Systems at Kwantlen Polytechnic University, Interior Health, the Regional District of Central Kootenay, Kootenay & Boundary Farm Advisors, and the West Kootenay Permaculture Coop.

The project had the goal of developing an evidence base and strategic rationale for food policy development that can best support and promote sustainable land and water use and vibrant food economies for the long term. We sought to understand how factors such as land prices, climate change, proximity to flooding and fire risk, and other factors would impact current and future farmers and the overall resilience of the Central Kootenay food economy.

The first step, in collaboration with our academic partners and the RDCK, was to identify all accessible and relevant datasets and sources. Simultaneously, a scope of research document was created collaboratively by the partners to aid in focusing the work. Once this was completed, analysis of the available data was delegated to the appropriate project partner with the most relevant in-house expertise. Each academic partner created a set of products related to their respective data and research. These products fed into the formulation of the policy recommendations in this Policy Brief, along with existing RDCK documents, including the Agriculture Land Use Inventory, Comprehensive Land Use Bylaws, and other relevant policies and plans.

This project was launched in 2019, originally intended to wrap up in June 2020 but extended to the end of 2020 due to the impacts of the COVID-19 pandemic. The events of 2020 and the impacts on supply chains, essential workers, and economies have only reinforced the value of strengthening measures that enable and bolster a secure local food system.

Basis for Policy Formulation

The recommendations were formulated based on a combination of the original research questions and grounded in the results of the data analysis. Three key themes arose from the data analysis and these provided the framework used in the Brief for the recommendations: Land Use and Access; the Agricultural Land Reserve; and Climate Change impacts.

We have structured the recommendations to align with the consolidated land use bylaws and official community plans: Objectives followed by Policies. The policies formulated all apply to Official Community Plans, rather than the specifics of Zoning. We hope to see our recommendations embedded in zoning bylaws eventually. However, by introducing them at the level of objectives and policies, they provide direction and aspiration while allowing for the time that may be necessary to generate support amongst the impacted residents for any of the proposed changes before they are embedded in zoning.

Resources

As noted above, various resources developed over the course of the project by the academic partners provided the context for the formulation of our policy proposals:

1. "Potential Crops Suitable for Central Kootenay Region in a Changing Climate Regime" by the Institute for Sustainable Food Systems at Kwantlen Polytechnic University (KPU), June 2020.
2. "Research Brief on ALR Land Price and Non-farm use and Subdivision Activities in the Regional District of Central Kootenay" by Wallapak Polasub, Alexander Stark and Kent Mullinix at the Institute for Sustainable Food Systems (KPU), June 2020.
3. "ALR and Assessed Farmland Overlap in the RDCK" by the Applied Research & Innovation Centre at Selkirk College in collaboration with the Selkirk Geospatial Research Centre, June 2020.
4. The RDCK Food Policy Web App, powered by ESRI and hosted at https://selkirk.maps.arcgis.com/apps/webappviewer/index.html?id=b42d800ecc87400dbe28a0d97df32a7a
    I) Navigation Guide to the RDCK Food Policy Web App, found within the app
    II) Layers list for the Web App
    III) Glossary to the terms used and data sets available in the Web App
5. Map of ALR properties sold in 2018 by price per acre
6. Map of Soil Quality, Flood Risk, and Wildland Urban Interface Zones
7. Map of RDCK area covered by Zoning and Official Community Plans
8. Map of Soil Quality and Water Access points
9. Map of Agricultural Capability

All documents can be found on the dedicated Evidence Project page on the Food Policy Council's website: ckfoodpolicy.ca/evidence

Policy Proposals

Land Use & Access

Land Use & Access Background

The impacts of COVID-19 on long supply chains around the world and across sectors heightened an awareness of the value of having a secure source of the goods deemed essential. Food is clearly high on the list of essential goods and, for most food stuffs, relies on a land base and adequate water supplies to be realized. No less important are the people who farm that land. While homesteading and gardening have a long history of contributing to household level food security in the region, those engaged in commercial farming with product intended for markets are vital for our collective food security.

The RDCK has diverse ecosystems, soil types, markets and land values. Agriculture requires a secure land base, both as a region but also for the individual farmers. Farmland in the Nelson and Creston areas consistently have the highest average prices in the regional district. Nevertheless, larger parcels also consistently have lower prices per acre, offering options for those able to secure and, perhaps, share the land.

The challenges faced by those who want to get into farming are well documented. Programs like Young Agrarians and FarmLink help to overcome those challenges. There are, however, additional initiatives that could be put in place to increase the number of active, successful farmers, including various incentives for land-sharing. Nebraska provides tax incentives to to those who large land holdings to carve out a portion and make available to new farmers (https://nextgen.nebraska.gov/bf_eligibility.html). There are also models for crop share arrangements that reduces the need for the new farmers to provide cash up front that they may not have or that could be put to better use investing in infrastructure such as fencing or irrigation. Land sharing on established farms comes with many benefits which can include access to equipment (machinery, hand tools), infrastructure (barns, irrigation, fencing), established healthy soils, markets, and mentoring. The success rate of new farmers is enhanced when they are able to build their skills, markets, and savings while working on shared farmland.

Key information identified in the data analysis:

- 42% of the land sold is less than 5 acres; 67%% is less than 10acres.
- low percentage of properties sold with farm class relative to the whole is an encouraging indicator that established farmers are not likely to sell until they are ready to stop farming at that site.

Land Use & Access Objectives

1. To foster stable farmland tenure.
2. To reduce the amount of un-used farmland.
3. To lower barriers to accessing land for new farmers or those wishing to expand their operations.
4. To create circumstances for best chance of success for new farmers.
5. To privilege commercial farming over other uses on land zoned for agriculture or in the ALR.
6. To eliminate, to the degree possible, speculative investments in farmland and privilege local ownership.

Land Use & Access Policy Proposals

7. Promote consolidation of agricultural parcels wherever possible.
8. Explore options for lower mil rates (taxes) for landowners who provide extended (5 years +) leases to landless farmers.
9. Consider developing zoning specifically for collective or cooperative farms in order to remove barriers to multi-party farm enterprises that may need special provisions, for example, dwellings.
10. Promote construction of accommodation above existing farm buildings in order to limit stress on land available for production.
11. Require credible business plans for collective / cooperative farms.
12. Ensure enforcement of decommissioned buildings removal in the ALR (which helps to lower land values).

Land Use & Access Related Proposals

13. Engage with the provincial government to revise farm income levels necessary for farm tax status, with the goal of maximizing agricultural use of the land.
14. Explore options with the area's Credit Unions and the Columbia Basin Trust to establish an "Aggie Bond", dedicated to providing loans for start-up farmers.

Agricultural Land Reserve

ALR Background[1]

The RDCK contains almost 162,000 acres of ALR land and almost 31,000 acres classified as farm land by the BC Assessment Authority. Of the land in the ALR, only 16% is actively farmed. Of the land that meets the BC Assessment criteria for income derived from farming, 83% is in the ALR.

- 73% of properties in the ALR do not have farm tax classification.
- non-farm use applications to the ALC tend to be approved more readily than subdivisions, in keeping with their mandate to preserve agricultural land.
- 85% of the properties that were approved for subdivision by the ALC were sold in the following year.
- Between 2006 and 2018, 306 agricultural parcels in the RDCK were sold multiple times.

ALR Objectives

1. Maintain viable agricultural parcels in the RDCK.
2. Maintain or expand the area of land in the ALR.
3. Maximize active farming on ALR land and reduce the acreage of long-term fallowed land.

ALR Policy Proposals

4. Wherever possible, ensure that residences and related infrastructure are sited close to property lines and not on land best suited to cropping.
5. Consider reducing the maximum limit for residential footprint on farmland.
6. Consider creating a Regional Growth Strategy that will help to alleviate stresses on individual agricultural parcels to “development” for other uses than farming.
7. Explore amending rural residential zones to include secondary use that provides off-site accommodations for farmers and farm workers.

ALR Related Proposals

8. Engage with the provincial government to remove tax incentives on ALR land that is not commercially farmed.
9. Collaborate with Selkirk College’s Applied Research & Innovation Centre and Rural Development Institute to assess the factors that drive repeated sales of the same agricultural properties in order to identify options for stabilizing agricultural land ownership.
10. Collaborate with farm organizations and economic development agencies in the region to provide full service supports for strengthening the business of and expanding opportunities for established and new farmers.
11. Work with the Real Estate Foundation of BC and Kootenay Real Estate organizations to reduce speculative investment in farm land.

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[1] This section draws on the reports produced by project partners at Selkirk College’s Applied Research & Innovation Centre and the Selkirk Geospatial Research Centre and at the Institute for Sustainable Food Systems at Kwantlen Polytechnic University found on the Project website: ckfoodpolicy.ca/evidence.

Climate Change

Climate Change Background
Climate change is affecting precipitation patterns across the seasons and could negatively impact the agricultural capability of the region without significant mitigation and adaptation measures, including changes in crop varieties and types as well as management practices. Precipitation is predicted to increase during the autumn, which may affect harvest across many sectors, in addition to impacting peak flows timing and channel stability. Increased precipitation in the winter that comes in the form of rain will increase flooding events. Reduced snowpack combined with higher average daily temperatures in the spring will result in earlier spring freshet, reduce summer flows and decrease groundwater storage. (see Table 6, Potential Crops) Decreases in summer precipitation may result in adverse effects on drought sensitive forage crops such as Timothy and alfalfa, which are under pressure around the world as a result of climate change. Increasingly unpredictable and severe weather events will also impact some tree fruit varieties more than others, necessitating better adapted cultivars. (Potential Crops, pages 14 - 15)

“Facing the increasingly difficult challenge of adapting to climate change, farmers in the RDCK are looking for alternatives to maintain and increase the production of their farming operations, while remaining ecologically and economically viable.” (Potential Crops, page 15) While new crops may be possible under the changing conditions, these will not succeed without a learning curve to master any different agronomic practices as well as the development of and access to markets. Crop and cultivar trials will be necessary, as well as the support provided by the Kootenay Boundary Farm Advisors.

While autumn, winter, and spring will bring more precipitation with climate change, increased heat and reduced precipitation during the summer could result in an expanded use of mulches. Where the mulches are plastic, this could result in an additional waste stream that will need to be managed effectively. Other measures to support soil health include reduced or no-tillage, cover cropping and crop rotations. Peer to peer farmer training as well as the services of Kootenay Boundary Farm Advisors will assist in increasing the rate of adoption of these practices. Summer heat and reduced precipitation also increases wildfire risk.

Locally adapted seeds are more tolerant of weather shocks and other pressures. Grain and some vegetable producers in the area already save their own seed but commercial production of local seeds would provide another income stream for farmers and build up the supply of locally adapted seeds. (Potential Crops, page 27).

The impacts of climate change, as documented in the Institute for Sustainable Food Systems’ Potential Crops Report, as well as in many regional climate change reports of the past decade, point to the importance of ongoing support for farmers as they seek to adapt to the changing climate.

The multi-layered map created by the Selkirk Geospatial Research Centre faculty and staff and housed on the RDCK’s mapping platform provides a dynamic tool for use by RDCK staff and elected officials to ground land use planning decisions in real world data. Assessment by RDCK staff indicates that much of the data will be readily or routinely updated, ensuring the ongoing utility of the tool.

Climate Change Objectives

1. Support farmers adapting to the impacts of climate change on their production, harvests and management practices.
2. Support farmers to institute changes that can reduce their greenhouse gas emissions.
3. Ensure adequate water available for irrigation and other essential uses on farm.
4. Protect structures from flood damage.
5. Ensure that increased use of plastic mulches does not result in increased waste stream burden for the RDCK.

Climate Change Policy Proposals

6. Privilege food production access to water, linked to requirements to follow best practices in irrigation timing and equipment.
7. Amend bylaws to require maintenance, and enhancement where possible, of riparian areas in all zones in order to mitigate flood events and GHG emissions, and to provide an effective fire break.
8. Establish a more frequent schedule than has been done in the past and use current data to update the Floodplain Management Bylaw, specifically definitions and setbacks related to floodplain and flood construction levels.

Climate Change Related Proposals

9. Maintain the funding contribution to the Kootenay Boundary Farm Advisors program, in the absence of a provincially run and funded agricultural extension service.
10. Work with partners to develop and deliver a granting program to support farmers to transition to irrigation equipment that will maximize water use efficacy and reduce water loss.
11. Work with relevant partner organizations (Columbia Basin Trust, accelerate Kootenays, BC Hydro and others) to continue to expand electric charging options in communities and provide incentives for on-farm fast charging stations.
12. Establish and maintain relationships with the Applied Research & Innovation Centre, Kootenay Boundary Farm Advisors, and BC Agricultural Climate Adaptation Research Network and the Ministry of Agriculture to access research on impacts, adaptation strategies, and best practices closely tied to the sectors and on-farm practices within the RDCK.
13. Work with area farm organizations and business leaders to develop market opportunities for new varieties and crops that can thrive in our region under a changing climate.
14. Ensure that the Emergency Operations Centre has access to a current database of livestock farms in the Region to facilitate emergency removal of animals in the event of wild fire or flooding. The provincial Premises ID is a key source but may not include all area farms.
15. Work with local agricultural organizations, stream keepers, and tree nurseries to encourage and enable planting of deciduous trees in riparian areas, along streams, and on non-arable farmland.
16. Draw on the model in the District of Kent and other innovations in recycling to minimize agricultural plastic waste that may come from an increased use of plastic mulches.

With gratitude, the Central Kootenay Food Policy Council acknowledges the support of the Real Estate Foundation of BC. We also acknowledge and appreciate the funding support provided by the Columbia Basin Trust, and RDCK Directors Jackman, Watson, Faust, Newell, Cunningham, Popoff, and Peterson.

We are grateful for the incredible contributions of the many people and organizations who were partners in this project: the Regional District of Central Kootenay, the Rural Development Institute, the West Kootenay Permaculture Coop, Interior Health, Selkirk Geospatial Research Centre, Kootenay & Boundary Farm Advisors, and the Institute for Sustainable Food Systems, Kwantlen Polytechnic University.

Appendix E: UBC Students Process Infographic

YOUTH IN THE CENTRAL KOOTENAY: LET'S LEARN ABOUT FOOD

LFS 350 GROUP 3 X CENTRAL KOOTENAY FOOD POLICY COUNCIL (CKFPC)

KRISTIE TAI, DOROTHY DINH, MEGHAN BLACKMORE, DEVIKA PILLAI, MICHELLE NIFCO, REESE LIN

THE UNIVERSITY OF BRITISH COLUMBIA

CKFPC

Advocates for **equitable and sustainable food system policies**, and operates as a mediator between municipal governments and regional stakeholders[3]

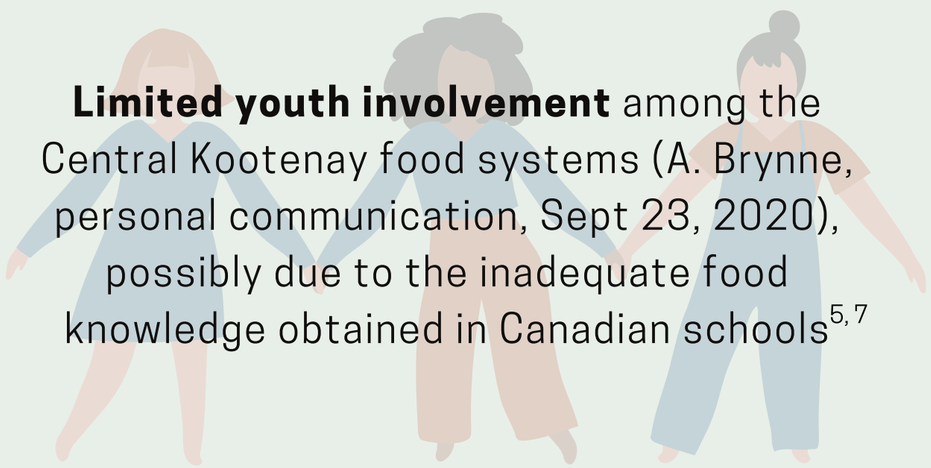
OUR PARTNERSHIP

We collaborated with Abra Brynne, the CKFPC executive director, to **generate educational content** for youth aged 12-16 in the Central Kootenay region

OUR GOAL

Increase youth involvement in food system activities by enhancing food literacy in youth

THE ISSUE



Limited youth involvement among the Central Kootenay food systems (A. Brynne, personal communication, Sept 23, 2020), possibly due to the inadequate food knowledge obtained in Canadian schools[5, 7]

34%

Food literacy

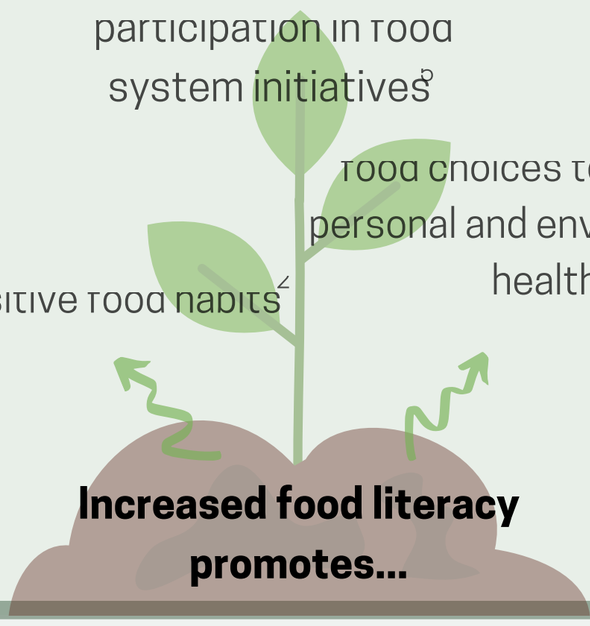
knowledge and skills that **empower individuals** to make food choices that support sustainable food systems and their health[4]

PROJECT SIGNIFICANCE

participation in food system initiatives[5]

food choices to support personal and environmental health [4,6]

positive food habits[4]



Increased food literacy promotes...

OUR APPROACH

PRELIMINARY STEPS

Discussed the **issue and envisioned outcomes** with the CKFPC. Potential topics were chosen prior to our research

BACKGROUND RESEARCH

On the **selected topics**: Influences on eating behaviour and the multiple dimensions of food[8]

DELIVERABLES

1. **PowerPoint presentation:** familiar to students and facilitates a concise and visually appealing delivery[1]
2. **Detailed presentation instructional guide**
3. **Additional resource list**

NEXT STEPS

1) Obtain feedback on the deliverables from the CKFPC and teachers of the Central Kootenay through a feedback form

2) Implement deliverables in Central Kootenay secondary and middle schools

TAKE HOME MESSAGE

Increasing food literacy in students may inspire **meaningful engagements** with food systems[5]

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Appendix F: Infographics

TOMATOES

CLIMATE CHANGE

How tomatoes are grown, transported and consumed can contribute to climate change.

WORLD TRAVELLERS

Tomatoes are grown and eaten all around the world.

BIODIVERSITY

Did you know that tomatoes come in all shades of the rainbow, from deep purple to bright yellow and even blue?

WATER

Tomatoes are 93% water.

WORKERS

Many of the fresh tomatoes eaten in salads and sandwiches were picked by migrant workers.

PROCESSING

All the tomatoes grown in Canada that become ketchup and pizza sauce are grown in Ontario - unless you make them at home, then they come from your garden!

SOIL HEALTH

Healthy soil is teeming with life - worms, beetles, fungi and bacteria - and grows tasty, nutrient-rich tomatoes.

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FOOD POLICY
FROM PERSONAL TO POLITICAL
What does it mean for our farm activities that we are in the Agriculture Land Reserve?
Does this farm have a water license that provides water for their growing needs?
Did they need a building permit for this barn?
Are they managing their farm waste so it doesn't harm the river?
Did the farm workers get paid fairly?
Do farmers have a reliable farmers market for selling their harvest?
Does the zoning permit this farmers market?
Do farmers need a buisness license from the city ?
VEGGIES
If we harvest more than we can eat can we sell it off our property?
Can we compost our food waste or does our municpality collect organic waste?
Does this tomato fit my budget?
I wonder how this tomato was grown?
I wonder who grew this tomato?
Can I safely process my tomatoes?
Was the scale used to weigh this tomato approved by the government as accurate?
Does this processing plant rely on new immigrants?
Does it provide a safe workplace for its workers?
Does it source tomatoes from local farmers?
SMITH'S KETCHUP PLANT
Do we need to update the Canadian Food Guide to better reflect current science and the diverse food cultures of Canada?
Are the workers unionized?
Does the bus route and schedule make it easy for low income households to get to the grocery store?
Do the profits from this store stay in my local community?
GROCERY
SALE
CENTRAL KOOTENAY FOOD POLICY COUNCIL
Illustrated by: Mercedes Minck | www.merkminck.com

Food Policy: From Personal to Political

Policy is about how we make choices.

A young child makes food choices primarily based on taste and texture.

By the time we are adults, we will have a food policy that is based on a multitude of factors: our finances, allergies, cultural practices, and cooking skills. We make choices about what to eat that may include seeking out local food, eating in season, avoiding animal products, and wanting to address climate change. This is our personal food policy.

Our personal food policy is inevitably linked with the choices that governments are making on behalf of citizens. In our towns, cities and countrysides, local governments establish zoning to determine what kind of activities can happen where, in order to minimize conflict between neighbours, between businesses and homes. They can allow or ban the growing of food in front yards, the keeping of chickens or bees, they can make sure that farmers have ready access to space for a farmers market and that citizens have access to locally grown food.

Within the provincial governments, food policy is found in diverse ministries. Access to a safe and secure supply of water is found in provincial water policy. The movement of food across our landscapes cannot happen in trucks larger than those allowed to safely travel on highways. Provincial labour laws seek to ensure that those whose work on farms, in processing plants, and in grocery stores are protected from unreasonable working conditions.

The federal government has policy that is about making sure that scales used to weigh food for sale are accurate. What seeds are available for sale is covered by federal policy. What information has to be on food labels and in what language is covered by the federal government. At the farm and at processing plants, food safety practices are determined by federal government policy. And the federal government controls how fish is caught for our dinner plates.

As individuals the choices we make for ourselves and our households have an impact on how food is produced.

As food citizens, we have the ability to become engaged with our local governments, with the provincial and the federal governments in order to influence their policy so that it better aligns with how we want to eat and to live together on this planet.

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