

The Southwest BC Bioregion Food System Design Project

About the Project

Researchers at Kwantlen Polytechnic University's *Institute for Sustainable Food Systems (ISFS)* are leading a project to explore the economic, environmental stewardship and food self-reliance potential of a bioregional food system in Southwest BC (SWBC). This project will produce information for government staff and elected officials, food system advocates, farmers, and others interested in the future of SWBC's food system.

Why a Bioregional Food System?

Bioregions are areas that share similar topography, plant and animal life, and human culture. They are largely based on eco-regions but also incorporate human settlement areas and political boundaries. The SWBC Bioregion includes Metro Vancouver, the Fraser Valley, Sunshine Coast, Squamish Lillooet, and Powell River Regional Districts, and the traditional territories of the Coast Salish People.



The SWBC Bioregion

Climate change, energy price instability, depleting oil stocks, and environmental degradation are creating uncertainties in global food production. In SWBC, we are losing our capacity to grow food for local consumption. Farms are being lost and small lots in the ALR are at risk of development. Local processing capacity is nearly absent. Development and expansion of a localized food system in the SWBC bioregion could help to build resilience. It is estimated that residents of SWBC spend over \$6 billion per year on food; a SWBC food system could capture an increased share of this spending and see it circulate within the regional economy.

Our research explores the potential of a bioregional food system in the year 2050. How many jobs could it support and how much could it contribute to the regional economy? How could such a system be designed to minimize GHG emissions and address others environmental concerns? These are some of the questions the ISFS team is trying to answer.

Project Goals

Identify ways to strengthen the regional economy by:

- Retaining more of the "local food dollar" and position the agri-food sector to contribute directly to the regional economy creating jobs and opportunities for small to medium sized businesses.

Support agriculture by:

- Providing regionally appropriate information for current and future farmers; and,
- Identifying opportunities for expanding SWBC agriculture and processing.

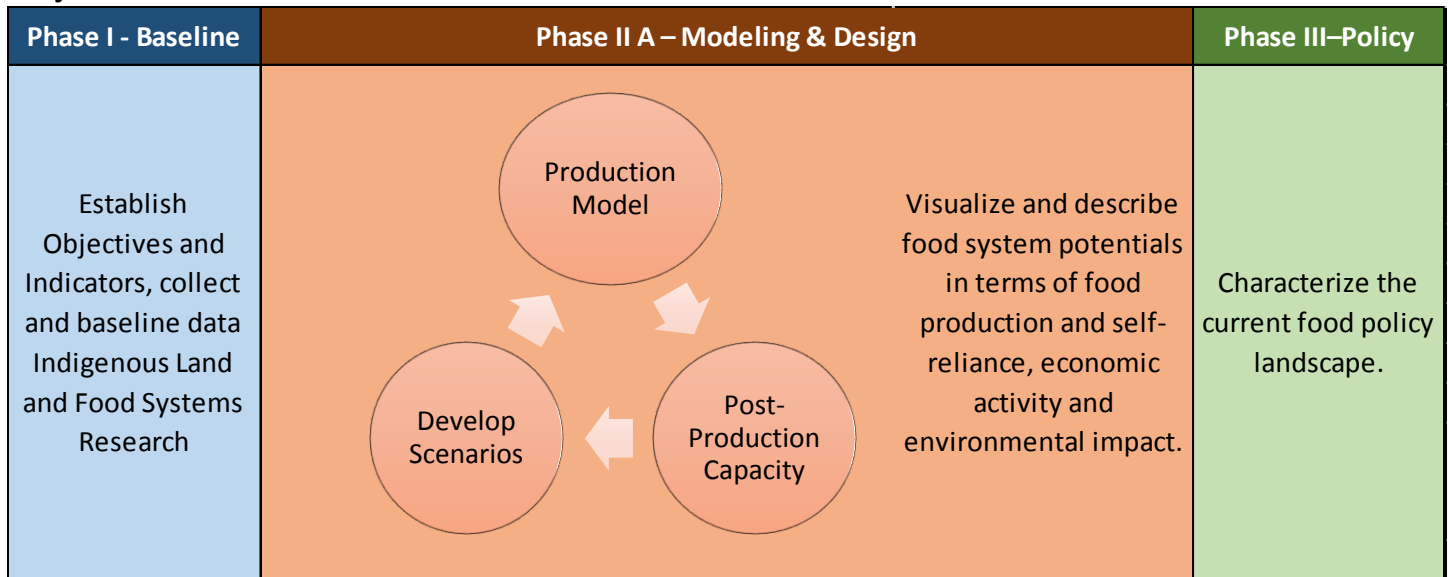
Promote environmental stewardship by:

- Exploring strategies to reduce the environmental impact of SWBC's food system.

Strengthen communities and build social capital by:

- Bringing together diverse communities by catalyzing action around mutual goals and shared food system values.
- Working with Indigenous communities of focus to identify points of intersection and opportunities for integration of an Indigenous land and food systems perspectives and priorities.

Project Phases



Project Benefits and Deliverables

1. Food System Design

- This report will paint a picture of bioregional food system futures for Southwest BC in 2050 through visualizations and descriptions of their potential economic, environmental and food self-reliance outcomes and impacts.

2. Economic Development

- SWBC Farm Enterprise Budgets for 26 crops and livestock products
- Estimates of the potential for revenue generation and job creation and diversification from farming and processing businesses in a Southwest BC bioregional food system.
- Profiles of Food Processing and Distribution in a Bioregional Food System

3. Environmental Impact

- Greenhouse gas emissions, Ecological Footprint, and nutrient balance associated with bioregional food systems in SWBC.
- Landscape management strategies to protect wildlife habitat.

4. Policy, Planning & Governance

- Local Government Policy Inventory.

5. Indigenous Land and Food Systems Research

- Preliminary work toward the goal of positioning Indigenous priorities, perspectives and paradigms in food system research.

Stakeholder Engagement

Stakeholders across the food system have been engaged in the project in several ways.

- June 2014 Stakeholder workshops were held across the bioregion to gather input and priorities on the objectives and indicators for a bioregional food system (see p.3).
- A project advisory committee was selected and assembled and began meeting in July 2014. This committee provides feedback on project methodology and strategy (see composition on p.4).
- The engagement team has been meeting with City Councils, Agricultural Advisory Committees, Community Organizations and interested individuals to provide updates on the project and opportunities for input and feedback.

Food System Objectives and Indicators

The following Food System Design Objectives and Indicators were vetted by stakeholders during our June 2014 stakeholder workshops held across SWBC. They are used by the project team to guide baseline research about the SWBC food system and model alternative food system futures for 2050.

| Objectives | | Indicators | |
|------------|---|------------|--|
| 1 | Increase self-reliance in agricultural production | 1.1 | Degree to which food grown in SWBC contributes to food need |
| | | 1.2 | Quantity of un-farmed land |
| | | 1.3 | Quantity of water needed for crop and livestock production |
| | | 1.4 | Degree to which livestock feed is produced in SWBC |
| | | 1.5 | Storage and processing capacity requirements |
| 2 | Improve nutrient balance | 2.1 | Percentage of crop nutrient demand met or exceeded |
| 3 | Increase biodiversity | 3.1 | Capacity of agricultural land to provide wildlife habitat |
| | | 3.2 | Connectivity of non-production habitat |
| 4 | Reduce and remove greenhouse gas emissions | 4.1 | CO ₂ Emissions from fossil fuel used in food production and transportation |
| | | 4.2 | CH ₄ emissions from livestock |
| | | 4.3 | N ₂ O emissions from manure management and application and fertilizer application |
| | | 4.4 | Aboveground carbon stocks |
| 5 | Reduce food system's Ecological Footprint | 5.1 | Ecological Footprint of land-based agricultural food production in SWBC |
| | | 5.2 | Ecological Footprint of food consumed in SWBC (local plus imported foods) |
| 6 | Strengthen and enhance local farm and ancillary business | 6.1 | Number of farms and farm types |
| | | 6.2 | Characteristics of farm operators |
| | | 6.3 | Farm profitability in the bioregion |
| | | 6.4 | Initial farm capital costs in the bioregion |
| | | 6.5 | Number and location of food processing operations in the bioregion |
| | | 6.6 | Types and values of alternative marketing channels |
| | | 6.7 | Retail and farm gate price and quantity comparison of selected food commodities |
| 7 | Contribute to the local economy | 7.1 | Gross domestic product (GDP) of the agri-food system sector |
| | | 7.2 | Number of farm jobs and total farm employee labour income |
| | | 7.3 | Number of jobs in ancillary businesses and related labour income |

Project Staff

| Principal Investigator | |
|---|---|
| <ul style="list-style-type: none"> • Dr. Kent Mullinix- Kwantlen Polytechnic University-ISFS | |
| Research Associates | |
| <p>Agriculture</p> <ul style="list-style-type: none"> • Dr. Kent Mullinix - ISFS • Caitlin Dorward - ISFS <p>Economics</p> <ul style="list-style-type: none"> • Dr. Wallapak Polasub - ISFS • Caroline Chiu – ISFS • Ermias Afeworki – ISFS <p>Policy</p> <ul style="list-style-type: none"> • Dr. Cornelia Sussmann - ISFS • Caitriona Feeney - ISFS | <p>Ecology</p> <ul style="list-style-type: none"> • Dr. Sean Smukler – University of British Columbia • Greg Harris – KPU Biology • Anna Rallings – KPU Sustainable Agriculture <p>Ecological Footprint</p> <ul style="list-style-type: none"> • Dr. Meidad Kissinger – Ben-Gurion University of the Negev • Dr. Cornelia Sussmann - ISFS <p>Community Health and Nutrition</p> <ul style="list-style-type: none"> • Katie Robinson, R.D. - ISFS <p>Indigenous Land and Food Systems</p> <ul style="list-style-type: none"> • Dawn Morrison - ISFS |

Project Collaborators and Advisors

| Research Collaborators | Research Methodology Advisors |
|---|--|
| <ul style="list-style-type: none"> • Dr. Rebecca Harbut - KPU • Dr. Jan Thompson - KPU • Dr. Lenore Newman - Canada Research Chair in Food Security, University of the Fraser Valley • Dr. Christiana Miewald - Simon Fraser University • Dr. Tara Moreau – University of British Columbia | <ul style="list-style-type: none"> • Dr. Herb Barbolet - Simon Fraser University-Centre for Sustainable Community Development and Centre for Dialogue • Professor Patrick Condon - University of British Columbia • Dr. Eduardo Jovel - University of British Columbia • Dr. Bill Rees - University of British Columbia • Dr. Alejandro Rojas - University of British Columbia • Dr. Hannah Wittman – University of British Columbia |
| Project Advisory Committee | |
| <ul style="list-style-type: none"> • Ann Rowan – Metro Vancouver • Candice Appleby – Small Scale Food Processor Association • Helena Swinkles – Fraser Health Authority • Orlando Schmidt – BC Ministry of Agriculture • Sandy Blue – 2b VENTURES | <ul style="list-style-type: none"> • Sara Dent – Young Agrarians • Shannon Gordon – Whistler Centre for Sustainability • Stefan Misse – Discovery Organics • Trevor Kempthorne – First Nations Agricultural Association • Grant Rice – Surrey White Rock Food Action Coalition |

Project Support: Endorsement and Funding

| Grantors | Local and Regional Government Support | Industry and Community Endorsement through Letters of Support |
|---|---|---|
| <ul style="list-style-type: none"> • Real Estate Foundation of British Columbia • R. Howard Webster Foundation • VanCity Community Foundation • VanCity <i>enviroFund</i>TM • Vancouver Foundation • Kwantlen Polytechnic University | <p>Project Endorsement with Funding</p> <ul style="list-style-type: none"> • Squamish-Lillooet Regional District • City of Burnaby • City of North Vancouver • District of Maple Ridge • Township of Langley • City of Langley • City of New Westminster • District of Squamish • White Rock <p>Project Endorsement</p> <ul style="list-style-type: none"> • Metro Vancouver • Sunshine Coast Regional District • Bowen Island Municipality • City of Abbotsford • City of Pitt Meadows • City of Port Moody • City of Port Coquitlam • City of Richmond • City of Vancouver • Corporation of Delta • District of North Vancouver • District of Mission • Resort Municipality of Whistler • Village of Pemberton | <ul style="list-style-type: none"> • BC Agricultural Land Commission • Small Scale Food Processor Association • BC First Nations Agricultural Association • BC Food Systems Network • Bowen Agricultural Alliance • Delta School District • Farm Folk City Folk • Fraser Health • Food Matters Chilliwack Invest North Fraser • Langley Community Farmers Market Society • Langley Environmental Partners Society • Richmond Food Security Society • Surrey Board of Trade • The New Westminster Community Food Action Committee • The Surrey/ White Rock Food Action Coalition • Vancouver Food Policy Council • White Rock Surrey and Naturalists' Society • Whistler Centre for Sustainability |

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The Institute for Sustainable Food Systems (ISFS) is an applied research and extension unit at Kwantlen Polytechnic University (KPU). We investigate and support regional food systems as key elements of sustainable communities, focusing predominantly on British Columbia but also extending our programming to other regions.

Our applied research focuses on the potential of regional food systems in terms of agriculture and food, economics, community health, policy, and environmental integrity. Our extension programming provides information and support for farmers, communities, business, policy makers, and others. Community collaboration is central to our approach. www.kpu.ca/isfs

Kwantlen Polytechnic University has been serving the Metro Vancouver region for 30 years, and has opened doors to success for more than 250,000 people. Four campuses—Richmond, Surrey, Cloverdale and Langley—offer a comprehensive range of sought-after programs, including business, liberal arts, science, design, health, trades and technology, apprenticeships, horticulture, and academic and career advancement. Over 18,000 students annually have a choice from over 200 programs, including bachelor’s degrees, associate degrees, diplomas, certificates and citations.